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THE 3<sup>rd</sup>

# JOINT INTERNATIONAL CONFERENCE 2021

After Covid-19 Pandemic:  
Health and Education  
System Resilience

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AFTER COVID-19 PANDEMIC: HEALTH AND EDUCATION SYSTEM  
RESILIENCE

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RESILIENCE**

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## PREFACE

Coronavirus disease, known as Covid-19, is a deadly virus that affects the world population, and cause a Pandemic since early of 2019. In Indonesia, about 3.8 million people are diagnosed with COVID-19, with more than 30,000 and 115,000 deaths due to this virus. Many Countries have been implementing numerous strategies to fight the pandemic; however, the virus remains uncontrol for almost two years.

This pandemic has shocking effects on all countries globally and weakens all systems in every country, especially the health and education system. The research findings show that 80% of cases are mild, 15% of people experience severe cases, and the other 5% become critically suffering (septic shock, respiratory and organ failure). The number of hospitalization is also challenging. According to UNICEF, at least 98.5% of the world's student population experienced new school policies, such as school closures, distance learning, and no school interaction. Long school closures and distancing learning will affect their graduation careers, skills and future. Inaddition, graduates will face severe challenges from the global recession due to the COVID-19 pandemic.

Therefore, the committee initiated the international conference by inviting experts and leaders around the world. The 3<sup>rd</sup> Joint International Conference will be held to organize a Global discussion, ideas and innovations are critically needed to improve the current responding strategies of COVID-19 in the health and education system.

Jombang, September 2021

**Pujiani, S.Kep.Ns., M.Kes.**

Dean of Faculty of Health Science  
University of Pesantren Tinggi Darul Ulum

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# Relation Between Stress Level During Study From Home (SFH) And Menstrual Cycle On University Students Of Regular Midwifery Department Program At STIKES Karya Husada Kediri

**Devi Nurmayanti<sup>a,1,\*</sup>, Tintin Hariyani<sup>b,2\*</sup>**  
<sup>a,b</sup> Prodi Sarjana Kebidanan STIKES karya Husada Kediri  
\*Corresponding Author E-mail: [tintinhariyani2@gmail.com](mailto:tintinhariyani2@gmail.com)\*

## ABSTRACT

Key words:  
Stress Level\_1  
Menstrual Cycle\_2  
University Students\_3

**Background:** Menstruation is a sign of female sexual maturity that first occurs at puberty. Menstrual cycles are ideally regular every month with a span of 21-35 days on each menstrual period. The menstrual cycle is influenced by many things, one of them is stress level. The most common stress experienced by students is academic stress, especially during the Covid-19 pandemic which requires students to study from home. The objective of this study was to determine whether there is a relation between stress level during Study From Home (SFH) and the menstrual cycle in undergraduate students of Regular Midwifery Department Program at STIKES Karya Husada Kediri.

**Methods:** This study used a correlational analytic method, examining the relation between independent variable (stress level) and the dependent variable (menstrual cycle) with a cross-sectional approach. The research was carried out on July 29 to August 30, 2021 at STIKES Karya Husada Kediri. The population consisted of 31 respondents. The sample used was 29 respondents with purposive sampling technique. The instrument in this study used a questionnaire and data analysis used the Spearman Rho test.

**Results:** Based on the Spearman Rho. test, it obtained p value = 0.154 ( $>= 0.005$ ) and r value = 0.272, which means there is no significant relation between stress level during Study From Home and the menstrual cycle.

In a stressed state, the hypothalamus releases the hormone CRH which will stimulate the release of endorphins and ACTH hormones, causing blood cortisol levels to increase and indirectly lowering GnRH levels and causing menstrual cycle disorders, but there are also other factors including weight, physical activity, diet, environmental exposure, working conditions, menstrual process synchronization, and endocrine disorders that may have important roles in maintaining menstrual pattern to remain normal.

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## I. INTRODUCTION

Menstruation is regular bleeding from the uterus as a sign that the uterus is functioning properly as a natural process that occurs in women. This period will change behavior from various aspects, such as physical and psychological. The normal menstrual cycle is every 21-35 days, with a menstrual period of 2-7 days.<sup>(1)</sup>

Menstrual cycles are not necessarily the same from one woman to another. There are women who experience normal conditions, but others have menstrual cycle problems that need to be watched out for ovulation problems or other medical conditions.<sup>(2)</sup>

According to the 2010 Basic Health Research, most of 68% of women in Indonesia aged 10 to 59 years reported regular menstruation and 13.7% experienced irregular menstrual cycle problems in the last 1 year. Irregular menstrual problems at the age of 17 to 29 years

and 30 to 34 years are quite a lot, which is 16.4%. The reasons put forward by women 10 to 59 years who have irregular menstrual cycles are due to thoughts of 5.1%.<sup>(3)</sup>

Research by Toduho et al in 2014 regarding the relationship between psychological stress and the menstrual cycle in grade 1 students at Senior High School 3 Tidore Islands, North Maluku. The results obtained from 68 respondents proved that 100% experienced psychological stress. It was found that 15 respondents experienced mild stress (22.1%), 49 respondents experienced moderate stress (72.1%), and 4 respondents experienced severe stress (5.9%) and from 68 samples obtained 42 respondents (61.8%) have an abnormal menstrual cycle.<sup>(4)</sup>

Menstrual cycle disorders can be caused by stress. Stress is a perception of threat or of a shadow of displeasure, alerting or making the organism active. Stress is the body's reaction/response to psychosocial stressors (mental stresses/life burdens). In its influence on the menstrual cycle, stress involves the neuroendocrinological system as a system that plays a major role in female reproduction.<sup>(5)</sup>

Govarest and Gregoires argue that the most common stress experienced by students is academic stress, which is a condition or condition of individuals experiencing pressure as a result of student perceptions and assessments related to science and education. Students are very vulnerable to experiencing academic stress caused by the demands of routine learning in the world of lectures, demands for higher and critical thinking, independent living, and participating in social life.<sup>(6)</sup>

The Covid-19 pandemic that is currently engulfing the world causes many problems that are difficult for the community to handle. The Covid-19 pandemic is the first and main health crisis in the world today, many countries have decided to close schools, colleges and universities. by implementing Study from Home for all students in Indonesia. This strategic step is considered the most optimal because it can reduce the number of contacts and reduce the spread of Covid-19 infection.<sup>(7)</sup>

According to research conducted by Kusnayat, et al the year 2020 shows that around 60.5% of students are ready to adapt to the use of online lecture learning technology but around 59.5% object to assignments given by lecturers which result in student stress levels of around 60%, if this is allowed to continue it will be fatal in the mental development of students, and as many as 92% of students choose and prefer face-to-face lectures in class compared to online lectures. Another impact of applying home learning causes students to experience several psychological problems such as anxiety, stress and depression.<sup>(8)</sup>

Based on the above background, researchers are interested in conducting this research because from a preliminary study conducted on 5 university students of Regular Midwifery STIKES Karya Husada Kediri all said they experienced unstable emotions and 3 female students of whom experienced changes in the menstrual cycle during Study From Home (SFH) in the time of the Covid-19 pandemic.

## II. METHOD

This study uses a correlational analytic research design carried out with a cross-sectional approach, the research variables are stress levels as the independent variable and the menstrual cycle as the dependent variable. The research population was regular midwifery university study program students totaling 31 respondents. sampling using purposive sampling technique with a total of 29 respondents. The method of data collection is through a google form link with the measuring instrument used is a questionnaire. The questionnaire consisted of the DASS 42 questionnaire and the menstrual cycle questionnaire. Univariate analysis is used to measure stress levels and menstrual cycles using a frequency distribution. Bivariate analysis using Spearman Rho. The research was conducted on July 29, 2021 to August 30, 2021.

### III. RESULTS AND DISCUSSION

Table 1. Frequency distribution based on stress level of undergraduate of Regular Midwifery Student STIKES Karya Husada Kediri in August 2021

Number	Stress Level	Frequensy (f)	Percentage (%)
1	Normal	4	13,8
2	Light	1	3,4
3	Currently	1	3,4
4	Heavy	5	17,2
5	Very heavy	18	62,1
Total		29	100

Based on table 1, it is known that most of the 62.1% (18 respondents) of the frequency distribution of respondents based on the level of stress, which is very heavy.

Stress is a physiological, psychological and behavioral response of humans trying to adapt and regulate both internal and external pressures (stressors). Humans experience stress from three main sources, namely the environment, physiological, and mind

With the Covid-19 virus, the Government has made several policies to stop the spread of this outbreak. One of them is from the education sector, the government implements distance learning or Study From Home. The changes that occur make students have to adapt, causing instability and anxiety that results in feelings of depression, this creates increased stress during the pandemic.

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Table 2. Frequency distribution based on the Menstrual Cycle for Undergraduate Regular Midwifery students of STIKES Karya Husada Kediri in August 2021.

Number	Menstrual Cycle	Frequensy (f)	Presentage (%)
1	Normal	20	69
2	Abnormal	9	31
Total		29	100

Based on table 4.2, it can be seen that from 29 respondents, it is known that 69% (20 respondents) have normal menstrual cycles and from 31% (9 respondents) have abnormal menstrual cycles.

Menstruation is a physiological change in a woman's body that occurs periodically and is influenced by reproductive hormones accompanied by the release (desquamation) of the endometrium, this can occur every month between the ages of puberty and menopause.<sup>11</sup> Menstruation that occurs regularly every month will form a menstrual cycle. The occurrence of regular menstrual cycles is a sign that a woman's reproductive organs are functioning properly. One cycle is counted from the first day of one period to the first day of the next period. The menstrual cycle in normal women ranges from 21-35 days, with an average cycle duration of 28 days.<sup>(12)</sup>

As long as a woman experiences menstruation, she must have had a history of irregular menstrual cycle patterns. Menstrual cycles that extend more than 35 days are called oligomenorrhea, menstrual cycles that are less than 21 days are called polymenorrhea and those who do not menstruate for three consecutive months are called amenorrhoea. The pattern of the menstrual cycle is influenced by hormonal factors, BMI, age at menarche, physical activity, stress, diet, endocrine disorders, bleeding disorders, environmental exposure and working conditions.

Table 3. Relationship of Stress Levels During Study Frome Home with Menstrual Cycle of Undergraduate Regular Midwifery Students STIKES Karya Husada Kediri

Stress Level	Menstrual Cycle				Total	<u>Nilai r</u>		
	Abnormal		Normal					
	f	%	f	%				
1 Very Heavy	7	24.1	11	37.9	18	62,1		
2 Heavy	2	6.9	3	10.3	5	17,2		
3 Currently	0	0.0	1	3.4	1	3,4		
4 Mild	0	0.0	1	3.4	1	3,4		
5 Normal	0	0.0	4	13.8	4	13,8		
Total	9	31	20	69	29	100		

*Test Spearman Rho p = 0.154 > α 0.05*

Based on the results of the study, 29 respondents analyzed data using the Spearman Rho test, it was found that p-value = 0.154 where the probability value (p) > (0.05) which means there is no significant relationship between stress levels during the Frome Home Study and the menstrual cycle in Midwifery undergraduate student STIKES Karya Husada Kediri, while the value of r = 0.272 indicates the strength of the correlation is weak, the direction of the correlation is positive, which means that the relationship between the two variables is unidirectional, thus it can be interpreted that the higher the stress level, the greater the risk of disruption to the menstrual cycle.

Stress is a physical and psychological reaction that is individual, so that each individual's stress is different. Responses to stress are very unique and vary for each individual depending on the complexity of the stressor, individual situation and strategies to deal with it.<sup>(13)</sup>

This research was conducted in August 2021, during which time there was a spike in Covid-19 cases, so the government implemented Level 4 Community Activity Restrictions (PPKM) which caused limited movement of students who began to gradually improve and had to return to limiting outdoor activities and activities so that can be a stressor that causes some of the respondents in this study to experience very heavy stress.

In line with the research conducted by Permatasari et al, which stated that there was no relationship between stress levels in the face of the Covid-19 pandemic with the menstrual cycle of adolescent girls in Dukuh Ngawinan Tegalsari Klaten, changes in the menstrual cycle were not only caused by stress levels but also other factors affecting including physical activity, activity patterns, anxiety, obesity, exercise and anemia. In addition, students are starting to be able to adapt to the current pandemic situation so that the stress that appears will decrease over time.<sup>(14)</sup>

In the study, it was found that most 55.2% (16 respondents) had a normal BMI and most 69% (20 respondents) had a normal menstrual cycle, this indicates that BMI is a factor that greatly affects the menstrual cycle. Women with thin BMI related to lack of nutrition or limited nutritional intake will affect growth, organ function, will also interfere with the function of reproductive organs, lose weight on a large scale causing a decrease in GnRH hormone to stimulate FSH and LH hormones which will result in decreased estrogen levels. This has a negative impact on the menstrual cycle and ovulation. Meanwhile, high fat reserves will increase the aromatization of androgens into estrogen in garnulose cells and fat tissue so that estrogen levels become high. High levels of estrogen cause feedback to FSH to be disrupted so that it does not reach peak levels and interfere with follicular growth, causing

an extension of the menstrual cycle. estrogen by the follicle in the middle of the cycle. If there is a disturbance in the feedback process, ovulation will occur.<sup>(15)</sup>

Other factors that can affect menstruation, some of which are daily activities such as activities at home, participating in social and sports activities, how to relate to family and friends and chores at home. While activities in educational places have the least effect on respondents, especially during the current pandemic so that the stress caused by places of education is not high.<sup>16</sup> Apart from the high level of stress in female students, there are other factors that may have an important role in maintaining normal menstrual patterns. and other causes should be studied in female students who experience menstrual disorders before assuming it is the result of stress.<sup>(14)</sup>

#### IV. CONCLUSION

Based on the results of the study, there was no significant relationship between stress levels during study from home and the menstrual cycle in undergraduate students of Midwifery STIKES Karya Husada Kediri, this is because stressors that occur in students do not only come from the academic environment but can come from the social environment, conflicts in family, love problems, bullying and traumatic events that befall the individual, on the other hand there are many factors apart from stress that can affect the menstrual cycle in students that need to be observed in depth to find out the causes of menstrual cycle disorders. Therefore, educational institutions are advised to provide explanations to students about coping with stress and provide relaxing time between learning processes in order to reduce stress within the academy and to students who are experiencing stress conduct a personal evaluation to find out the causes of stress and strive to improve coping stress so as to avoid the occurrence of stress. system imbalances in the body that can interfere with health and students who experience menstrual disorders conduct personal evaluations to find out the cause of their menstrual disorders.

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# Characteristics of Stroke Patients in Outpatient: An Analytical Descriptive

Joko Susanto<sup>a,b,1,\*</sup>, Makhfudli<sup>a,b,2</sup>, Ah. Yusuf<sup>b,3</sup>, Ilkafah<sup>a,4</sup>, Amelia Mardhika<sup>a,b,5</sup>

<sup>a</sup>Faculty of Nursing, Universitas Airlangga, Surabaya, Indonesia

<sup>b</sup>Faculty of Vocational Studies, Universitas Airlangga, Surabaya, Indonesia

<sup>1</sup> jsusanto@vokasi.unair.ac.id\*; <sup>2</sup> makhfudli@fkp.unair.ac.id, <sup>3</sup> ah-yusuf@fkp.unair.ac.id,

<sup>4</sup> ilkafah@vokasi.unair.ac.id, <sup>5</sup> ameliamardhika@vokasi.unair.ac.id

\* Corresponding author: jsusanto@vokasi.unair.ac.id

## ABSTRACT

**Keywords:**  
Stroke Characteristics  
Risk Factors  
Outpatient

**Background:** Characteristics of the population are influenced lifestyle due to changes in demographics, epidemiology, and local culture there is a risk of behavior that is detrimental to health. This study aims to determine the characteristics of stroke patients in outpatient settings.

**Methods:** The study using a descriptive-analytic. The population was patients diagnosed with stroke in the Outpatient Unit of RSUD dr. Soegiri Lamongan in June-July 2019. The sample size was 46 patients with consecutive sampling. Data was collected from interviews with patients or patient families and based on medical records. Patients criteria for interviewed have an MMSE score of 24-30. Analysis data used descriptive statistics and Logistic Regression tests.

**Results:** The results showed the characteristics of stroke patients 57.6% aged 40-59 years, 50% male patients, no education to school 30.4%, non-hemorrhagic stroke 83.7%, patients with left hemiparesis 51.1%, risk factors for hypertension 85.9%, and patients never been exposed to information about stroke as much as 79.6%. Patients with diabetes mellitus have a risk of 9.6 times, and patients with smoke habits had to risk of 3.9 times to occur a non-hemorrhagic stroke.

**Conclusions:** The concluding study is that non-hemorrhagic stroke is the dominant type of stroke in the Lamongan Regency. History of Diabetes Mellitus and smoking habits significantly influence the occurrence of non-hemorrhagic stroke.

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## I. INTRODUCTION

A stroke is the vascularization of the brain's blood vessels that can cause physical problems, disability, and even death. The incidence of stroke reaches 40-300 cases per 100,000 population [1]. The World Health Organization (WHO) report states that 7.3 million people die from ischemic heart disease, and 6.2 million, caused by stroke and other cardiovascular diseases. Stroke is the sixth leading cause of death in low-income countries and the second leading cause of death in middle and high-income countries [2].

Characteristics of stroke patients in developing and developed countries are different. Characteristics of stroke patients in the Netherlands, which is one of the developed countries, namely aged 59-80 years (69%), male (54%), risk factors for cardiovascular disease (71%), hypertension (57%), hyperlipidemia (30%), diabetes (16%), myocardial infarction (13%), atrial fibrillation (13%), stroke patient duration before 3 hours of the initial attack in 60% of cases (Horsch et al., 2016). In Indonesia, prevalences of stroke sufferers continue to increase, in 2013 by 7%, increasing in 2018 to 10.9%. Prevalences of stroke in Indonesia increase with age. The number of stroke sufferers is 11.0% male and 10.9% female the highest case is over 75 years old 50.2%, lives in urban areas 12.6% and rural areas 8.0%, most out of school 21.2%, and also 21.8% more do not work. The risk factors for stroke are smoking habits 35.7%, hypertension 27.1%, and diabetes mellitus 2.4% [3].

Indonesia is a developing country and has many different cultural variations. Technological advances in developing and developed countries have led to epidemiological and demographic changes, namely changes in lifestyle and an increase in the prevalence of non-communicable diseases, one of which is stroke [4]. In addition, lifestyle and diet are also strongly influenced by varied local cultures [3].

Lamongan Regency is one of the regions in East Java located at the north coast area with a population of 1,360,987 people in 2020, the large number have junior high school education (24, 18%), with the Human Development Index (HDI) in 2019 reaching 72,57%. A total of 26.3% of the Lamongan Regency area uses agricultural land in the rice and aquaculture, and the rest is non-paddy land is most was used for the industrial sector. According to the health profile of East Java, the number of stroke sufferers is 1.24% per 1000 population, while in Lamongan Regency, 1.27% per 1000 population [5].

The data shows that Lamongan Regency was original an agricultural area to an industrial area. The existence of industrialization in an agrarian society can cause socio-economic changes in society, one of which is a change in the level of health [6]. The low level of public education is also at risk for behavior that is detrimental to health [7]. One of the efforts in planning health programs to reduce stroke prevalence prevent disability, and death, is more important to study the characteristics of stroke patients, especially for referral patients in primary care facilities. It aims to determine the risk factors for stroke in all referral patients focusing on sociodemographic factors and habit patterns.

## II. METHOD

The research design used the descriptive-analytic method. The study population was patients diagnosed with stroke in the Outpatient Unit of RSUD dr. Soegiri Lamongan in June-July 2019. Sampling used a consecutive of 46 patients. The samples used were patients diagnosed with a stroke, based on the American Heart Association (AHA) Stroke 2013, with signs of acute central nervous system (CNS) neurologic deficit due to vascular disorders, cerebral infarction, intracerebral hemorrhagic (ICH), or subarachnoid hemorrhagic (SAH) as evidenced with the neuropathological examination, neuroimaging, and or permanent clinical injury (Sacco et al., 2013). The inclusion criteria for the study are stroke patients evidenced by the results of a CT scan by a radiologist. Assessment of patient characteristics used patients who did not experience aphasia or dysarthria with MMSE values of 24-30. Collect data from medical records and interviews with patients or families. This research obtained information on ethical suitability from the dr. Soegiri Hospital Lamongan, Number of Ethical Approval 88/KEPK/D.Kep/V/2019.

Researchers conducted an assessment of the patient's medical record, interviews with patients or their families, and also used a questionnaire containing patient demographic data (8 questions), patient examination data including risk factors, physical abnormalities experienced by the patient (4 questions), disease history and patient behavior as a risk factor for stroke (3 questions), as well as interviews about the patient's knowledge about stroke information and the chronology of the beginning of stroke until getting medical action (2 questions).

To determine the distribution of frequency, percentage, and cross-tabulation using the Chi-Square test. To determine the risk factors associated with stroke using the Haenszel Mantel test and analyze determining risk factors and the incidence of non-hemorrhagic stroke as the dominant type stroke used Logistics Regression test.

### III. RESULTS AND DISCUSSION

#### a. Results

Table 1 Frequency Distribution of Respondent Characteristic (n=46)

Characteristic	SNH		SH	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
<b>Gender</b>				
Male	20	87,0	3	13,0
Female	18	78,3	5	21,7
Total	38	82,6	8	17,4
<b>Age (Year)</b>				
≤ 39	1	100	0	0,0
40-59	21	80,8	5	19,2
≥ 60	16	84,2	3	15,8
Total	38	82,6	8	17,4

Table 1 shows that 87.0% of male patients had a non-hemorrhagic stroke, while 13.0% of hemorrhagic strokes had. Female patients who had a non-hemorrhagic stroke were 78.3%, and 21.7% had a hemorrhagic stroke. Patients experience is the majority of non-hemorrhagic stroke, namely at the age of > 60 years by 84.2% and at the age of 40-59 years by 80.8%.

Table 2 Frequency Distribution of Education, Knowledge Level about Stroke Information and Duration of Stroke Initial Handling (n=46)

Characteristic	Frequency	Percentage (%)
<b>Education</b>		
No School	14	30,4
Elementary	9	19,6
Middle School	12	26,1
High School	7	15,2
College	4	8,7
<b>Knowledge level about stroke information</b>		
Knowing	9	19,6
Unknowing	37	80,4
<b>The duration of stroke initial handling (hours)</b>		
< 4,5	26	56,5
> 4,5	20	43,5

The results in table 2 show that 30.4% of stroke patients never attended school, 80.4% of patients who never received information about stroke before the attack, and 56.5% of patients who received treatment before 4.5 hours since the stroke occurred.

Table 3 Frequency Distribution of Stroke Types and Clinical Manifestations (n=46)

Characteristic	Frequency	Percentage (%)
<b>Stroke types</b>		
SNH	38	82,6
SH	8	17,4
<b>Clinical Manifestations</b>		
1. Motor disorders		
Right hemiparesis	22	47,8
Left hemiparesis	24	52,2

Characteristic	Frequency	Percentage (%)
2. Communication disorders		
Yes	21	45,7
No	25	54,3
3. Decreased awareness		
Yes	6	13,0
No	40	87,0

The results of table 3 show that the type of stroke that often occurs is non-hemorrhagic stroke 82.6%, left hemiparesis occurs 52.2%, communication disorders occur (dysarthria or aphasia) 45.7% and decreased consciousness 12%

Table 4 Risk Factor Analysis Stroke (n=46)

Risk Factor	SNH		SH		p	OR	p	CI 95%
	n	%	n	%				
<b>Gender</b>								
Male	20	87,0	3	13,0	0,744 <sup>a</sup>			
Female	18	78,3	5	21,7				
<b>Age (Year)</b>								
≤ 39	1	100	0	0,0				
40-59	21	80,8	5	19,2	0,420 <sup>a</sup>	0,646 <sup>a</sup>		
≥ 60	16	84,2	3	15,8				
<b>Hypertension</b>								
Yes	22	84,6	4	15,4	0,503 <sup>b</sup>	0,646 <sup>c</sup>	2,977 <sup>c</sup>	0,642-13,809
No	16	80,0	4	20,0				
<b>Diabetes Mellitus</b>								
Yes	20	95,2	1	4,8	0,036 <sup>b</sup>	9,609 <sup>c</sup>	0,040 <sup>c</sup>	1,104-83,666
No	19	76,0	6	24,0				
<b>Hyperlipidemic</b>								
Yes	22	81,5	5	18,5	0,260 <sup>a</sup>	1,255 <sup>c</sup>	0,712 <sup>c</sup>	0,376-4,187
No	14	73,7	5	26,3				
<b>Smoke</b>								
Yes	19	86,4	3	13,6	0,045 <sup>a</sup>	3,904 <sup>c</sup>	0,049 <sup>c</sup>	1,003-15,193
No	17	70,8	7	29,2				
<b>Drinking alcohol habits</b>								
Yes	20	60,6	13	39,4	0,274 <sup>b</sup>	0,133 <sup>c</sup>	0,104 <sup>c</sup>	0,012-1,512
No	11	78,6	3	21,4				
<b>Use of contraceptive pills</b>								
Yes	10	76,9	3	23,1	0,550 <sup>b</sup>	0,750 <sup>c</sup>	0,701 <sup>c</sup>	0,173-3,260
No	27	81,8	6	18,2				

<sup>a</sup>Chi-square, <sup>b</sup>Fisher exact, <sup>c</sup>Regresi Logistic

Table 4 explains that age and gender did not have significant relations with stroke ( $p=0.744$ ) and ( $p=0.420$ ). Hypertension does not have a relationship with stroke ( $p=0.503$ ), but hypertension had a 2.97 times risk of non-hemorrhagic stroke to those without hypertension. Risk factors of hyperlipidemia did not have a relationship significant with the incidence of stroke ( $p = 0.260$ ). Hyperlipidemia is 1.25 times the risk of non-hemorrhagic stroke. The habit of drinking alcohol was not associated with stroke ( $p=0.274$ ). A history of alcohol consumption has 0.13 times the chance of having a stroke compared to people who never drink alcohol. The use of contraceptive pills also had a non-significant relationship ( $p=0.550$ ). Patients who had used the contraceptive pill had a 0.8 times risk of having a stroke than patients who did not use the contraceptive pill.

The results showed that the factors of diabetes mellitus and smoking had a significant relationship to stroke. Diabetes mellitus has a relationship that causes stroke, especially non-hemorrhagic stroke ( $p = 0.040$ ), with a risk of 9.6 times. Smoking habits had a relationship significant with stroke ( $p=0.045$ ), especially non-hemorrhagic stroke ( $p=0.049$ ), with a 3.9 times risk of having a stroke compared to patients who did not smoke.

## b. Discussion

The results of the studies explained that gender did not have a significant relationship ( $p>0.005$ ). Male or female stroke patients have the same number, which is 50%. Previous research explains that gender does not affect the incidence of stroke [4]. The results of other studies men are the majority of stroke (52%) are women the incidence of stroke increases at a certain age, namely after menopause because after menopause a experiences a decrease in the hormone estrogen. Estrogen is a hormone that acts as a blood vessel vasodilator [8]. The results of previous studies also found that men were 25% at risk of suffering from stroke, but 60% of deaths due to stroke incidence to women, and male patients often experienced smoking habits and high-stress levels in young men [9,10].

The results studies explain stroke patients are majority ranged between 40-59 years of 57.6%. The age factor did not have a relationship significant with type stroke ( $p>0.005$ ). Previous results of study risk of non-hemorrhagic stroke increased after 45 years and will increase by 11-20% for every additional 3 years of age [11]. Increased age results in degenerative processes, especially in the blood vessels of the brain. Stroke attacks at a young age tend to be triggered by lifestyle and temperament [10].

The incidence of stroke at a young age influences risk factors as of trigger. Patients had smoking habits at risk of having a stroke at a younger age, and the prevalence will decrease at an older age ( $>75$  years). Risk factors for diabetes mellitus and hyperlipidemia also increase at the age of 65-75 years. Hypertension often causes non-hemorrhagic stroke at the age of  $<55$  years and causes hemorrhagic stroke in all age groups up to 75 years [12]. The age factor also causes the emergence of various blood vessel disorders and increases the severity in stroke patients. Increasing age causes the elasticity of the aortic blood vessels to decrease and causes an increase in systolic pressure. In addition, older stroke patients are also at risk for aphasia compared to younger patients [13,14].

The level of education of patients, the majority of whom never went to school, causing a lack of exposure to information about stroke. Education affects health status, level of knowledge, and healthy living behavior [15,16]. Education level and knowledge stroke will affect the length of time it takes to get help when you first experience an attack. Education and knowledge about stroke will affect the length of time to get help first incidence attack. Assistance to stroke patients before 4.5 hours is proven to be more effective in reducing the risk of disability or death due to stroke [17].

The results of previous studies explained that most stroke patients had a history of hypertension. However, hypertension was not significant for the incidence of both types of stroke. Previous studies describe hypertension as a factor that causes a hemorrhagic stroke and an important in the development of atherosclerosis which is one of the causes of non-hemorrhagic stroke [18]. The results showed that hypertension had a risk of experiencing a non-hemorrhagic stroke as much as 2.9 times. Their previous studies hypertension has 7.5 times the risk of having a hemorrhagic stroke to non-hemorrhagic stroke [4]. The results of a study in Japan explained that a history of hypertension was 7.6% at risk of having a non-hemorrhagic stroke and 1.3% at risk of having an intracerebral hemorrhage (Turin et al., 2016). Studies also show that good hypertension treatment can reduce the risk of stroke by 36-42% [9,19].

Hypertension is the leading cause of heart failure and accounts for half of all stroke deaths globally [20]. Continuous increases in blood pressure can cause damage to the endothelial lining of blood vessels and trigger the formation of aneurysms that cause a stroke [21]. The causes of hypertension include age, heredity, smoking habits, excessive sodium, and fat intake, and lack of physical activity. Consume habits foods high sodium, such as salted fish, and fatty foods such as fried foods a caused by hypertension [22,23]

The results showed a relationship significant between a history of DM and stroke, especially non-hemorrhagic stroke, with an increased risk of 9.6 times. The results of previous studies explained

that DM had a 2.96-time risk of having a stroke to people who did not suffer DM [3]. DM will disrupt the endothelial lining of blood vessels, arterial stiffness, and systemic infections that cause atherosclerosis to cause a stroke. Uncontrolled DM patients are more at risk of causing stroke, especially non-hemorrhagic stroke. Disorders that arise are usually limb weakness and dysarthria caused by cerebral lacunar infarction [24]. Stroke patients with diabetes mellitus have a 60% risk for recurrent stroke. Type 2 DM has a higher risk of causing stroke than type 1 DM [22,25].

The results of this study indicate that the majority of stroke patients have a history of hyperlipidemia. In previous studies, patients have high cholesterol levels above 200 mg/dl and is a risk factor for stroke [21]. However, the results of this study showed that hyperlipidemia had no association with stroke. Hyperlipidemia is not the only cause of stroke. Hyperlipidemia can cause stroke because it has caused cardiovascular disorders [26]. The population is 25% of low-income countries and 33% of middle-income countries, and 50% of high-income countries have high cholesterol levels [27]. Factors that affect the increase in blood cholesterol include diet and smoking. High cholesterol levels cause plaque formation in blood vessels and lead to atherosclerosis at times resulting in thromboembolism. If the blockage occurs in the blood vessels of the brain will cause a stroke. A history of hyperlipidemia has a risk of stroke by 2.856 times to other people who did not have hyperlipidemia [12,28].

The results showed a significant relationship between smoking and stroke, especially non-hemorrhagic stroke, with a risk of 3.9 times compared to non-smokers. Not only active smokers are at risk, but passive smokers also increase stroke risk factors by 30% [22]. Smoking is more in younger patients and tends to cause a subarachnoid hemorrhagic stroke. Smoking is more in younger patients and tends to cause a subarachnoid hemorrhagic stroke [12]. Smoking is more in younger patients and tends to cause a subarachnoid hemorrhagic stroke (Hauer et al., 2017). Smoking is a direct or indirect incidence of stroke, because smoking causes hypertension or COPD, and if not handled properly, it can lead to stroke [29]. Smoked increased the production of fibrinogen and the occurrence of atherosclerosis in the blood vessels of the brain. The nicotine in cigarettes increases adrenaline production and can increase blood pressure [30].

The results showed that a history of alcohol consumption was not associated with stroke. Following previous research that the habit of consuming alcohol is not associated with stroke [18]. The behavior of alcohol consumption and smoking can increase the hematocrit and blood viscosity, thus triggering the incidence of stroke at a young age, either in the form of thrombotic stroke or subarachnoid hemorrhage. The risk of stroke caused by alcohol depends on the amount and type of alcohol consumed. Other studies have shown that consuming 1-2 glasses of alcohol per day can increase HDL levels in the blood, and the more alcohol you drink, the higher the risk of hemorrhagic stroke [31].

The results showed that the use of contraceptive pills did not have a relationship with stroke. The use of the contraceptive pill does not directly cause a stroke. Pill contraception causes stroke because it can induce hypertension which is one of the risk factors for stroke [7]. Women who use oral contraceptives have 3,458 times the risk of developing hypertension than other women who do not use oral contraceptives. Adolescent girls have suffered a stroke if there is no evidence of other causative factors, can be suspect that contraceptive pills are the cause with a 10% prediction of causing a stroke [32].

The results of this study showed that the majority of patients had a non-hemorrhagic stroke. The risk of non-hemorrhagic stroke increased age of 45 years and will continue increased age [19]. Hypertension is a risk factor for hemorrhagic stroke, but long-term hypertension also causes atherosclerosis. In addition, smoking and hyperlipidemia are also important factors in the formation of atherosclerosis [18]. The habits of people who are mostly smokers and often consume fatty foods further increase the risk of atherosclerosis and trigger non-hemorrhagic strokes [33].

The results showed that 51.1% had left hemiparesis, and 48.9% had right hemiparesis. Stroke causes motor function disorders that arise due to lesions in the right or left hemisphere cortex. Left hemiparesis disorders are often caused by right brain damage because the right brain is rarely used for activities compared to the left brain [8,9]. Almost 70-80% of stroke patients experience hemiparesis [34]. Patients who experience hemiparesis will have difficulty performing daily activities (ADL), causing the patient to be unable to perform ADL independently. The independence of stroke patients can cause post-stroke psychological disorders [16,35].

Stroke can also cause impaired verbal communication and decreased consciousness. Communication problems due to stroke include aphasia, dysarthria, and lisp. Aphasia will cause various communication disorders, namely comprehensive language disorders, language expression, reading, writing, attention, memory, and other cognitive domains [14]. The results of this study showed 46.7% of patients had aphasia. This is consistent with previous studies that aphasia occurs in 20-40% of acute stroke patients. Aphasia is more common in non-hemorrhagic strokes than hemorrhagic strokes. Several previous studies have suggested that Broca's aphasia usually occurs in younger patients, whereas Wernicke's aphasia occurs in older patients. As a result of lesions in the left hemisphere causes speech disorders form of pronunciation of morphemes using inappropriate phonemes [18].

The results showed that 12% of stroke patients experienced a loss of consciousness. Decreased level of consciousness is caused by lesion in the thalamus that causes damage to the rostral ARAS system [36]. Decreased level of consciousness in stroke-causing extensive bleeding volume results in increased ICP or direct compression of the thalamus and brain stem [37].

Stroke is a burden for patients and families because it reduces productivity and quality of life [38]. The government can make efforts to formulate policies for the treatment and prevention of stroke patients, increase public awareness about the impact and dangers of stroke through increased education and knowledge about stroke, develop promotive, preventive, curative, and rehabilitative efforts that are carried out holistically through services to the community in every health facility [39].

#### IV. CONCLUSION

The conclusion of the study showed that the dominant type of stroke was a non-hemorrhagic stroke. History of DM and smoking habits significantly affect the incidence of non-hemorrhagic stroke. DM patients risk 9.6 times, and smokers risk 3.9 times to suffer a non-hemorrhagic stroke. Results of the analysis found that several risk factors for stroke did not have a significant relationship, caused the incidence of stroke was not only caused by one factor but was the result of complications from several risk factors.

Changes in demographics, epidemiology, and local culture lead to changes in the characteristics of the community. The industrialization process in Lamongan Regency resulted in changes in the stroke characteristics of patients. This condition must get attention from local governments and health workers to improve health services through promotive, preventive, curative, and rehabilitative efforts carried out comprehensively based on the culture and characteristics of the community.

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# Correlation of Nutritional Status with The Degree of Diarrhea in Toddlers in Srikandi Room at RSUD Jombang

Pujiani<sup>\*1</sup>, Arys Widya Astutik<sup>2)</sup>, Andi Yudianto<sup>3)</sup>, Ana Farida Ulfa<sup>4)</sup>, Zulfikar As'ad<sup>5)</sup>

Faculty Of Health Sciences, Universitas Pesantren Tinggi Darul Ulum University, Jombang, Indonesia

<sup>1</sup> pujiani@fik.unipdu.ac.id\*, <sup>3</sup> andiyudianto@fik.unipdu.ac.id, <sup>4</sup> anafaridaulfa@fik.unipdu.ac.id

\* Corresponding author

## ABSTRACT

**Keywords:**  
nutritional status, degree  
of diarrhea, toddlers

Low nutritional status of toddlers may interfere metabolic processes in their body which cause infection such as diarrhea. The purpose of this study was to determine the relationship between nutritional status and the degree of diarrhea of toddler in the Srikandi Room at RSUD Jombang. The research design used was correlational analytic with cross sectional design. The independent variable was nutritional status on the dependent degree of diarrhea. While the sampling technique, it applied consecutive sampling, with a total sample of 39 toddlers. The nutritional status instrument for toddlers uses observations based on body mass index according to age (BMI/U) and the degree of diarrhea uses observations based on medical records, then the results of statistical tests: Pearson correlation with a significance level of 0.05. The results showed that: half of the respondents had normal nutritional status (56.9%), more than half of the respondents had mild dehydration (51.3%). From the pearson correlation statistical test, it was obtained p-value (0.000) < ( $\alpha = 0.05$ ), then H1 was accepted. Based on the results of the study, it can be concluded that there is a significant relationship between nutritional status and the degree of diarrhea of toddler in the Srikandi Room of RSUD Jombang. Therefore, mothers of toddlers are expected to improve the nutritional status of their children and always monitor it regularly through the *posyandu Balita*. It is intended that mothers understand that the nutritional status of children is good. Besides, it is to prevent diarrhea.

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## 1. INTRODUCTION

Diarrhea is an environmental disease which occurs in almost every geographic world. It is one of the main causes of death in children in developing countries (1). Toddlers' diarrhea is defined as the develop of daily stool volume exceeding the upper limit, which is 10 mg/kgBW/day (2). In developing countries, toddler generally has diarrhea periods of 3 times a day. In each periods, nutrition for growth and development is disrupted due to diarrhea. Therefore, diarrhea is a major factor in malnutrition of children (3). Low nutritional status of toddlers may interfere metabolic processes in their body which cause infection such as diarrhea (4).

According to UNICEF data, it is estimated that 1.5 million children die each year due to diarrhea (5). In the same time, the target coverage of services for toddler's diarrhea who come to health facilities is 20% of the estimated number of sufferer's toddler's diarrhea (the incidence of toddler's diarrhea times the number of children under five in one work area within one year). In 2018, the number of toddler's diarrhea sufferers served in health facilities was 1,637,708 or 40.90% of the estimated diarrhea in health facilities. Meanwhile, the number of diarrhea sufferers served in health facilities throughout Indonesia was 1,637,708 of toddler's diarrhea, and in East Java, there were 232.398 of toddler's diarrhea (6).

From the data on the number of toddler's patients at the Srikandi room RSUD Jombang, from July to September 2020, there were 127 toddlers. Meanwhile, the nutritional status with the incidence of diarrhea in July 2020 were 36 toddlers, with details; there was a status of 10 toddlers (27.78%) undernourished, 7 toddlers (19.44%) had severe malnutrition, while 6 toddlers (16.67%) have diarrhea.

In August, there were 42 toddlers with nutritional status as follows; 10 toddlers (23.81%) had poor

nutritional status, and 8 toddlers (19.05%) had poor nutritional status, while 8 toddlers had diarrhea (19.05%). In September, there were 49 toddlers with nutritional status; 14 toddlers (28.57%) were poor, and 5 toddlers (10.20%) were poor, while those who had diarrhea were 13 children (26.53%). The nutritional status of toddler is the main thing that must be maintained by every parent. The nutritional disorders of toddler are due to the mismatch of the quantity of nutrition they get from food with the necessities of their bodies (7).

Nutritional disorders are affected by primary or secondary factors. Secondary factors include all factors that cause nutrients not to grasp the body's cells after food is consumed, for example factors that cause digestive disorders, such as digestive tract structural abnormalities and enzyme deficiencies. The primary factor is the incorrect food composition in quantity and or quality which is caused by a lack of food supply, poverty, food distribution, ignorance, wrong eating habits, and etc (8). Poor nutritional status and the occurrence of diarrhea is like a circle. It is difficult to break, since both are interrelated and exacerbate each other. Chronic infectious conditions will cause malnutrition and it also has a bad impact on the defense system, making it easier for infection to occur. Malnutrition is a disorder where a body has lack of essential nutrients. Nutritional status correlates to the incidence of diarrhea for the children. If they have poor nutritional status, resistance to pressure or stress decreases, the immune system and antibodies are reduced, so they are susceptible to infections such as diarrhea.

Diarrhea in toddlers with liquid stool consistency, is accompanied with an increase of frequency  $> 3$  times a day, which may cause dehydration, acid-base balance disorders, hypoglycemia, nutritional disorders and circulatory disorders in the form of shock or hypovolemic shock. As a result, tissue perfusion is reduced while hypoxia occurs, acidosis gets worse which can lead to bleeding in the brain, decreased consciousness and if they are not immediately helped, the patient may die (9).

A good diet needs to be implemented as an effort to meet nutritional needs (10). Since good nutrition plays an important role in achieving optimal body growth. This optimal body growth includes brain growth which greatly determines the intelligence of toddlers (11). Managements of nutritional problems, needs to be carried out in an integrated method, between departments or health centers (*Posyandu, Puskesmas, hospitals and others*) and professional groups (midwives, nurses, and doctors). It can be done through increasing food, diversification of food production and consumption and balanced in nutritional quality. These efforts are conducted by providing information and education to the community regarding efforts to improve nutrition (12).

Based on the above phenomenon, it is interested to conduct a study under the title: "The relationship between nutritional status and the degree of toddler's diarrhea in at Srikandi Room of RSUD Jombang".

## 2. METHOD

This study applied correlational analysis. It is a statistical method used to measure the strength of the linear relationship between two variables and compute their association. Hence, this study would investigate "The correlation between nutritional status and the degree of toddler's diarrhea at the Srikandi Room at RSUD Jombang". Furthermore, this study also applied cross sectional approach. It is research design implemented by measurement or observation, including general data of respondents, family support variables, anxiety level variables which is carried out simultaneously at one time (13).

The population in this study were all patients of toddlers from July to September in the Srikandi Room at RSUD Jombang. On average, there are 42 children in the room per month. consecutive sampling was used as a data collection technique. Finally, there were 39 of toddlers as samples. The instrument in this study was a questionnaire. The content was the nutritional status of toddlers by applying observations based on body mass index according to age (BMI/U), while the degree of diarrhea uses observations based on medical records.

The procedure for collecting the data: Requesting a cover letter from the Head of the S1 Nursing Study Program, FIK Unipdu Jombang, to conduct research at the Jombang Hospital. Furthermore, a letter was given to the Head of the Srikandi Room at the RSUD Jombang. Data collection was carried out after obtaining the feasibility of an ethical test. Next, an informed consent form was given to the respondents who came and they received an explanation of the aims and objectives of the study. If the respondent agrees, then the respondent was asked to sign the consent form to become a research respondent. Observing the nutritional status of toddlers based on age (BMI/U), and medical records was categorized as diarrhea based on the degree of dehydration (14).

Collecting the results of questionnaires about toddler's nutrition, and the results of observations or observations of nutritional status in toddlers was grounded by age (BMI/U), and the degree of diarrhea using observations/observations was grounded on medical records, then the measurement results are then recorded as well as data processing. The data processing was carried out, includes: editing, coding, scoring, tabulating, and data analysis was performed using the Pearson correlation test with a significance level of 0.05.

### 3. RESULT AND DISCUSSION

Tabel 1 Frequency distribution of general characteristics of respondents in the Srikandi room at RSUD Jombang

No.	Characteristic of General Responden	Frequency (f)	Percentage (%)
1.	Age of toddler's mother		
a.	< 20 years	4	10,3
b.	20-35 years	26	66,7
c.	> 35 years	9	23,1
2.	Occupation of toddler's mother		
a.	Housewife	20	51,3
b.	Private employees	8	20,5
c.	entrepreneur	7	17,9
d.	farmer	0	0
e.	Civil servant	4	10,3
3.	Educational background of toddler's mother		
a.	Elementary(SD, SMP)	0	0
b.	High school (SMA, SMK)	32	82,1
c.	Higher education (University)	7	17,9
No.	Characteristic of General Responden	Frequency (f)	Percentage (%)
4.	Obtaining information about nutrient for toddler		
a.	Obtain information	35	89,7
b.	Do not obtain information	4	10,3
5.	Resource about nutrient for toddler		
a.	Do not obtain information	4	10,3
b.	Non medical staf	7	17,9
c.	Medical staf	19	48,7
d.	Mass Media (newspaper, magazine and etc)	0	0
e.	Electronic Media (TV, radio and etc)	9	23,1
6.	Gender		
a.	Boy	21	53,8
b.	Girl	18	46,2
7.	Age		
a.	< 1 year	0	0
b.	1-3 year	17	43,6
c.	4-5 year	22	56,4

Resource: Primary Data

Based on table 1 above, it shows that most of the respondents were 20-35 years old (66.7%), while a small proportion of respondents were > 35 years old (23.1%). In addition, more than half of the respondents (51.3%) work as housewives, and the rest were as civil servants (10.3%). Furthermore, in education aspect, most of the respondents had secondary education (SMA, SMK) (82.1%), and the rest (17.9%) have higher education at university level.

Meanwhile, most of respondents (89.7%) received information about nutrition for toddlers. Meanwhile the rest (10.3%) of respondents did not get it. Furthermore, the source of information about nutrition for toddlers, there were (48.7%) the respondent got it from health workers, 17.9 % were from non medical staff, and 23.1% were from electronic media such as TV, radio and etc. Meanwhile, (10.3%) of respondents do not get information.

Moreover, based on the gender of toddler, more than half of the respondents were male (53.8%), and (46.2%) of the respondents were female. Furthermore, based on the age of toddlers, more than half (56.4%) of the respondents were 4-5 years old, and (43.6%) of the respondents were 1-3 years old.

Tabel 2 Frequency Distribution of Respondents on Nutritional Status of Toddlers in the Srikandi Room, RSUD Jombang

No.	Toddler Nutrient status	Frequency (f)	Percentage (%)
1.	Very skinny	2	5,1
2.	Thin	14	35,9
3.	Normal	22	56,4
4.	Fat	1	2,6
	Total	39	100

Based on table 2, it shows that 56,9 of toddlers include in normal category, while the rest 2,6 % is fat.

Tabel 3 Frequency Distribution of Respondents on the Degree of Diarrhea in Toddlers in the Srikandi Room, Jombang Hospital

No.	Degree of Diarrhea in Toddlers	Frequency (f)	Percentage (%)
1.	Diarrhea without dehydration	19	48,7
2.	Diarrhea with mild dehydration	20	51,3
3.	Diarrhea with severe dehydration	0	0
	Jumlah	39	100

Based on table 3, it shows that 51,3% has diarrhea with mild dehydration, while (48,7%) got diarrhea with no dehydration.

Tabel 4 The Relationship between Nutritional Status and Degree of Toddlers Diarrhea in Srikandi Room, RSUD Jombang

No.	Status Gizi Pada Balita	Diarrhea							
		without dehydration		mild dehydration		severe dehydration		Total	
		f	%	f	%	f	%	f	%
1.	Very skinny	0	0	2	5,1	0	0	2	5,1
2.	thin	0	0	14	35,9	0	0	14	35,9
3.	Normal	18	46,2	4	10,3	0	0	22	56,4
4.	Fat	1	2,6	0	0	0	0	1	2,6
	Total	19	48,7	20	51,3	0	0	39	100

Pearson correlation ( $r$ ) = 0,753,  $p$ -value = 0,000;  $\alpha$  = 0,05

Based on table 4, 46,2% of toddlers include in normal category of nutrient status in which they got diarrhea without dehydration. Meanwhile, 5, 1% toddlers include in fat category in which they got diarrhea without dehydration. The correlation among variables of nutrient status with diarrhea degree of toddlers show sturdy correlation level which pearson correlation has 0,753. This correlation has positive pattern which means that a better of toddlers' nutrient status, diarrhea occurrence is low or without dehydration. Meanwhile, based on statistical test, it shows that  $p$ -value (0,000), smaller than alfa ( $\alpha$  = 0,05). It means that there is a significant relationship between nutritional status and the degree of toddler's diarrhea.

## DISCUSSION

### 1. Nutritional Status of Toddlers in *Srikandi* Room, RSUD Jombang Hospital

The results of the study in table 2 show that more than half of the respondents had the normal category of nutritional status (56.9%), and a small percentage of the obese category (2.6%).

Nutrition is a process of organisms using food that is consumed normally through the processes of digestion, absorption, transportation, deviation, metabolism and excretion of substances that are not used, to maintain life, growth and normal function of organs., and produce energy (15). Meanwhile, according to Adnani (2018), nutritional status is the level of health that a person achieves as a result of consuming food. According to (16), the cause of malnutrition is not only due to lack of food but

also due to infectious diseases. Children who are well fed but often have diarrhea or fever may suffer from malnutrition. The indirect causes are food security in the family, child care patterns, and health and environmental health services.

From the results of the data above, the nutritional status of more than half of the respondents is in the normal category. According to the information found in the field, verbally, the mother of the toddler said that every day the child was always given food that had adequate nutrition. Normal nutrition in a good sense can provide an adequate contribution to growth and development in toddlerhood which includes protein, fat, carbohydrates, minerals, vitamins, and water which must be consumed in a balanced manner, with the amount as needed, 3 times a day. In toddlerhood especially during the period of rapid growth and development requires more calories and protein. Therefore, the role of parents, especially mothers, is necessary in supporting the growth and development of toddlers, especially through efforts to fulfill a balanced nutritional intake which includes rice, side dishes, vegetables, fruits and milk in sufficient quantity and quality. good, while toddlers with nutritional status are very thin, thin and fat. This is because parents pay less attention to what toddlers consume and the possibility of hygiene in food patterns is not paid attention to, such as: food ingredients that are not clean, food behavior is not good (before food forget not to wash hands), so children are easily exposed to illness.

The nutritional status of more than half of the respondents in the normal category cannot be separated from the influencing factors, which are seen in terms of parents' occupations. Table 5.1 shows that more than half of the respondents work as housewives (51.3%), and a small proportion of civil servants (10.3%). Work is an activity to earn a living, looking at the data in the field that the observed work is the work of mothers of toddlers. However, based on verbal communication with mothers of children under five, it was stated that family income was sufficient to meet daily needs in the family. The dominant economy in influencing food consumption is family income and prices. An increase in income will increase the opportunity to buy food with better quantity and quality, on the contrary, a decrease in income will cause a decrease in food purchasing power both in quality and quantity (17).

From the description above, the mother is indirectly able to buy foodstuffs which have high nutritional worth. However, being unable to get nutritious food does not lie in the ability to buy food ingredients, but an understanding of the food ingredients obtained whether the food ingredients obtained have nutritional value or not, so that mothers understand the menu. nutritious food leads to the quality of nutritional status in toddlers.

From the point of view of the education of parents of toddlers. Table 1 shows that most of the respondents have the latest secondary education (SMA, SMK) (82.1%), and a small portion of the last education is tertiary education (17.9%). According , education in this case is usually associated with knowledge, which will affect the selection of food ingredients and the fulfillment of nutritional needs. one example, the principle that someone with low education usually has is that it is important to be filling, so that the portion of food sources of carbohydrates is more than that of other food groups. On the other hand, groups of people with higher education tend to choose protein sources and will try to balance them with other nutritional needs.

From the description above, it shows that in general, mothers of children under five have good knowledge due to education and getting information about nutrition in toddlers. Knowledge is an important capital in providing nutritious food to toddlers, even though they are able to provide or buy food ingredients but mothers don't know what food ingredients have nutritional value for toddlers which can result in the quality of nutritional status in toddlers.

Information reviewed. Table 1 shows that most of the respondents received information about nutrition for toddlers (89.7%), and a small proportion of respondents did not get information about nutrition for toddlers (10.3%). On the source of information, almost half of the respondents the source of information about nutrition in children under five from health workers (48.7%), and a

small part of the respondents did not get information (10.3%). Information is notification of new knowledge for additional knowledge. Providing information is to raise awareness of a motivation that affects knowledge. According to (18), that nutritional problems due to lack of knowledge and skills in the field of cooking reduce children's consumption, the diversity of ingredients and the diversity of types of dishes that affect the psyche, for example boredom.

From the description above that the nutritional status of toddlers is more than half of the respondents in the normal category due to the information obtained and sources of information, most parents of toddlers get information about toddler nutrition, and the information is obtained from health workers, of which almost half parents of toddlers are the source of information. information from health workers. This indirectly affects the cognitive abilities of parents of toddlers, which leads to the provision of quality food menus for toddlers.

From the description above, it can be concluded that in general, mothers of toddlers understand very well food ingredients that have good nutritional value for toddlers because they are supported by knowing well what they get from getting information about nutrition for toddlers, so that toddlers get food that is quite good in their needs. nutrition which leads to good quality nutritional status. However, not all toddlers in the Srikandi room at Jombang General Hospital had good nutritional status, only more than half of the respondents had normal nutritional status, while the rest had underweight, very thin and fat nutritional status. Toddlers who have this nutritional status, it does not mean that mothers of toddlers do not know foods that have good nutritional value for toddlers, but there is a high probability of eating patterns such as rarely or even not washing hands before and after food, water used hygiene or not, so that the immune system is low which leads to toddlers often getting sick. It is because of this that mothers of toddlers pay less attention to toddlers so that toddlers have a thin and very thin nutritional status.

## **2. Degree of Diarrhea in Toddlers in Srikandi Room at RSUD Jombang**

The results of the study show that more than half of the respondents had diarrhea with mild dehydration (51.3%), and almost half of the respondents had diarrhea without dehydration (48.7%). According to WHO, diarrhea is defecation with a soft or liquid consistency 3 or more times in 1 day, or with a frequency that is more frequent than usual (19). Stool may be accompanied by blood, mucus, fat, and undigested food particles. Parents are usually worried about the color difference in their child's stool, but in general only stools that are red, black or white are a sign of danger. Complications of diarrhea result in fluid and electrolyte deficiencies (20). Diarrhea that lasts for a while without adequate medical treatment can cause death due to lack of body fluids resulting in hypovolemic shock or due to biochemical disturbances in the form of advanced metabolic acidosis (21).

From the description above, the degree of diarrhea in children under five is categorized as more than half of respondents with mild dehydration and almost half of respondents with diarrhea without dehydration. This relates to the handling of toddlers when suffering from diarrhea. Toddlers without dehydration because the toddler's mother immediately took the toddler to the hospital the first time the toddler suffered from diarrhea, so that the toddler received early treatment that didn't lead to dehydration, while based on the category that toddler had diarrhea with mild dehydration, this was found at the time of the study. The general condition of toddlers is fussy, eyes look sunken, and toddlers feel thirsty (appendix). Diarrhea with mild dehydration due to toddlers before MRS was not given the first treatment, namely ORS administration, and in addition to fluid loss that was not balanced with adequate nutritional intake.

However, in general, toddlers in the Srikandi Room of RSUD Jombang who suffer of diarrhea are most likely to have diarrhea in toddlers because they are infected with bacteria that cause inflammation and release toxins that cause diarrhea. This is based on the information from the mother of the toddler on the sidelines of the nursing care for the toddler, the mother stated that the mother always provides adequate nutritional food intake, it is most likely that the toddler has diarrhea due to lack of healthy and clean living behavior, although the study was not conducted.

research on healthy and clean living behavior. Seeing that the cause of diarrhea in toddlers is due to bacterial infection, then indirectly diarrhea does not pay attention to life behavior (before food, forget not to wash hands), or eat snacks outside that have been contaminated with bacteria, so that children have the potential to be infected with bacteria that cause diarrhea. This is in line with (22), the playing behavior of toddlers who still do not understand games or dirty conditions that can spread germs, such toddler habits should be prevented by the role of parents or people around them who understand clean and healthy living behavior, While the same thing is stated in the research of Wiharto, within the scope of the household to behave in a clean and healthy life from the aspect of public health, especially the pattern of the spread of infectious diseases (such as diarrhea) can be prevented through hygiene habits or behavior, one of which is using clean water., the habit of washing hands with soap, and using healthy latrines.

### **3. The Relationship between Nutritional Status and Degree of Diarrhea in Toddlers in Srikandi Room, RSUD Jombang Hospital.**

From the results of the study shows that almost half of the respondents with nutritional status in the normal category with diarrhea without dehydration (46.2%), while a small proportion of the respondents in the nutritional status in the obese category with diarrhea without dehydration (5.1%). The relationship between nutritional status variables and the degree of diarrhea in children under five is a strong relationship where the Pearson correlation ( $r$ ) value is 0.753. This relationship has a positive pattern, meaning that the better the nutritional status of toddlers, the lower the degree of diarrhea in toddlers or diarrhea without dehydration. Statistical test results show  $\alpha$ -value (0.000) which is smaller than alpha ( $\alpha = 0.05$ ).

Poor nutritional status (malnutrition) ranges from diarrheal diseases. Diarrhea is caused by a bacterial, viral or parasitic infection. Bacterial infections that cause malnutrition due to decreased food intake, decreased absorption of nutrients in the small intestine and increased catabolism of nutrients needed for tissue repair. Conversely, malnutrition can also be a predisposing factor for infection due to a decrease in intestinal mucosal barrier protection and trigger changes in the patient's immune function, thereby increasing the risk of infection, especially enteral infections, while enteral infections cause diarrhea in toddlers (23).

Toddler is a tough period because the child's health condition is still unstable and susceptible to infectious diseases that result in poor nutritional status, and vice versa that poor nutritional status can cause toddlers to be susceptible to diseases, one of which is diarrhea, this is related to the immune system in infancy. still not stable. From the results of the study, almost half of the respondents were in the normal category of nutritional status with diarrhea without dehydration. This incident can be presumed that the food consumed is contaminated by bacteria, this is in line with (24), that there are toddlers who have good nutritional status but experience diarrhea, this is because the trigger for diarrhea is not only nutritional status but there are several factors that contribute to this. For example, digestive tract infections are the main cause of diarrhea in children. In toddlers, a small proportion of respondents' nutritional status in the very thin category with mild dehydration diarrhea, it is suspected that the low immune system leads to underweight or poor nutritional status which has an impact on the health of toddlers, namely children are easily infected with bacteria that cause diarrhea. This is in line with the research of Black et al quoted in the research of (25), concluding that nutritional status does not significantly affect the incidence of diarrhea in children under five which leads to dehydration, but is most likely related to the duration of diarrhea. Black et al quoted in the research of (26) also stated that it should be noted that the relationship between nutritional status and the duration of diarrhea in this study occurred in diarrhea caused by *E.coli* and Shigella, there is no data that explains this relationship.

The researcher assumed that looking at the research data that the nutritional status is good, thin, very thin and fat toddlers with diarrhea are caused by infection with bacteria that cause diarrhea. However, this study also proves that good nutritional status is very important in providing protection to toddlers against disease, which shows that toddlers with good nutritional status do not have diarrhea with dehydration. Thus the nutritional status of toddlers is closely related to the degree of diarrhea. This is evidenced from the results of statistical tests which state that there is a significant

relationship between nutritional status and the degree of diarrhea in children under five in the Srikandi Room of RSUD Jombang. This is in line with the opinion of (27), in his research stating that poor nutritional status increases the risk of severe diarrhea than good nutritional status. Children with diarrhea are more susceptible to dehydration than adult patients due to differences in body fluid composition and limited ability of children to meet their own fluid needs freely.

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#### 4. CONCLUSION

There is a significant relationship between nutritional status and the degree of diarrhea in children under five in the Srikandi Room at RSUD Jombang.

#### 5. SUGGESTION

The results of this study might be used for mothers in improving the nutritional status of toddlers. They have always to monitoring the nutritional status of children by visiting *posyandu*. Therefore, mothers will understand that good nutritional status in children greatly affects the health of toddlers, specifically the degree of diarrhea. Thus the mother will pay attention to the quantity and quality of the food menu given to the child, based on balanced menu.

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# The Effectiveness of Zinc Supplementation on Z-Score Index Changes in Stunting Children

Brivian Florentis Yustanta <sup>a,1,\*</sup>

<sup>a</sup>Department of Midwifery, School of Health Sciences

Karya Husada Kediri, East Java, Indonesia

\* Corresponding author : brivianflorentis@gmail.com

## ABSTRACT

*Keywords:*

Zinc Supplementation\_1  
Z-Score Index\_2  
Stunting Children \_3  
Pandemic\_4

**Background:** During the Covid-19 pandemic, the number of stunting cases continue to increase. The prevalence of stunting in East Java in 2020 reached 32.81%, while in Kediri reached more than 30%. In stunted children, there is a deficiency of macro and micronutrients. One of the micronutrients that have an important role in growth process is zinc. This study objective to analyze the effectiveness of zinc supplementation on z-score index changes in stunting children.

**Methods:** This study was an experimental research with pretest posttest control group design. It was conducted from February to May 2021 in several Public Health Center Kediri, East Java, Indonesia. The population were all stunting children under five. By using purposive sampling obtained sample size 32. The instrument used questionnaire, zinc syrup, weight scale, stature meter, maternal and child health book. Data were analyzed using Mann Whitney Test.

**Results:** After 4 months of zinc supplementation with a dose of 1 tablespoon (10 mg) per day, the results showed that there was a significant difference in the z-score index of stunting children who received zinc compared to the control group with p value 0.001. The average weight gain in intervention group was 2.7 kg and in control group was 1.2 kg. While the average increase in height in intervention group was 2.9 cm and in control group was 1.1 cm.

**Conclusions:** Handling cases of malnutrition, especially stunting, need to be a priority during the pandemic.

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## I. INTRODUCTION

One indicator of the success of national development related to the health sector is to create a quality generation <sup>(1)</sup>. Several efforts have been made, one of which is by reducing the number of stunting nutrition problems <sup>(2)</sup>. Based on the standards of the World Health Organization (WHO), stunting (short) is a condition of nutritional status that can be measured by height where the child is less than minus 2 standard deviations or Z-score <sup>(3)</sup>. The Z-score is the standard recommended by WHO to monitor children's growth <sup>(4)</sup>.

Indonesia is a country with the 5th highest number of stunting children in the world and the 2nd highest in the Southeast Asia region. Basic Health Research Data <sup>(2)</sup> shows the prevalence of stunting under five in Indonesia reaches 30.8%, which means that one in three toddlers is stunted. The prevalence of stunting in East Java in 2020 reached 32.81%, while in Kediri Regency it reached more than 30%.

The problem of stunting cannot be underestimated. Children with stunting tend to have low

levels of intelligence. This is due to the growth failure experienced by stunted children, which affects their physical and cognitive development, resulting in their level of intelligence and susceptibility to non-communicable diseases as adults. Children who experience stunting have the potential to lose productivity as adults<sup>(6)</sup>.

Nutrition is an important component in the management of stunting. Nutritional improvement can be done by giving quality complementary feedings, vitamin and micronutrient supplementation. One of the micronutrients that is considered beneficial for stunting children is zinc. Zinc with the chemical term is Zn, this nutrient has an important role in body functions such as cell growth, cell division, cell metabolism, immune function and development. Zinc is an essential micromineral as a cofactor of more than 100 metalloenzymes that play an important role in metabolic processes, growth, cell regeneration, and repair of body tissues<sup>(7)</sup>.

The characteristics of children who experience stunting can be seen from the short stature of children when they reach the age of 2 years or more. The importance of zinc for the growth of stunting children, especially those who are still in the golden age (under 5 years) growth is the basis for conducting research. Based on the problem above, this study objective to analyze the effectiveness of zinc supplementation on Z-score index changes in stunting children.

## II. METHOD

This study was an experimental research with pretest posttest control group design. The independent variable was zinc supplementation, while the dependent variable was Z-score index changes. It was conducted from February to May 2021 in several Public Health Center Kediri, East Java, Indonesia. The population were all stunting children under five as many as 37. This study used purposive sampling. The sample size was 32 with inclusion criterias were : (1) Children who lived in the same house with mother, (2) Mother can communicate well, (3) Mother who have agreed to become respondents. While exclusion criteria was (1) Children who have congenital abnormalities, (2) Children who have comorbidities, and (3) Children who have developmental disorders. The instrument used questionnaire, zinc syrup, weight scale, staturemeter, maternal and child health book. Data were analyzed using Mann Whitney Test.

## III. RESULTS AND DISCUSSION

Stunting is a chronic nutritional problem due to a lack of micronutrients for a long period of time. Stunting begins to occur when the fetus is still in the womb, caused by the mother's food intake during pregnancy that is less nutritious. As a result, the nutrition obtained by the child in the womb is not sufficient. Malnutrition will inhibit the growth of the baby and can continue after birth. Stunting children have shorter stature than normal children their age.

Table 1. Children's Age

Age	Intervention Group		N (%)
	f (%)	f (%)	
2 – 3 years	7 (21.9%)	8 (25.0%)	15 (46.9%)
4 – 5 years	9 (28 .1%)	8 (25.0%)	17 (53.1%)
Total	16 (50.0%)	16 (50.0%)	32 (100.0%)

From table 1, it can be seen that most of the stunted children aged between 4-5 old<sup>(8)</sup>. In addition, stunting years were 17 children (53.1%). Signs of stunting will usually only be seen when the child is two years can occur due to inadequate nutritional intake when children are less than 2 years old, either because they are not exclusively breastfed or given complementary feeding that lack quality nutrients, including zinc, iron, and protein<sup>(9)</sup>.

Table 2. Children's Sex

Sex	Intervention Group		N (%)
	f (%)	f (%)	
Boy	10 (31.3%)	10 (31.3%)	20 (62.5%)
Girl	6 (18.7%)	6 (18.7%)	12 (37.5%)
Total	16 (50.0%)	16 (50.0%)	32 (100.0%)

From table 2 it can be seen that most of the stunting children are boys by 19 children (59.4%). The prevalence of stunting in boys is higher than in girls<sup>(10)</sup>. Sex does not affect the incidence of stunting in toddlers. The possible cause is that in toddlers there is no difference in the speed and achievement of growth between boys and girls. These differences will begin to appear when entering adolescence, namely girls will first experience an increase in the speed of growth. This causes boy and girl to have the same risk of experiencing stunting. However, the effect of sex on the incidence of stunting is still controversial. The results of the study also show that the incidence of stunting is more common in boys under five<sup>(11)</sup>. In Ethiopia reports that one of the risk factors that influence the incidence of stunting is male children. During the growth period, there are differences in the growth patterns of children at a certain age and growth speed, including gender differences that can cause a tendency to stunting<sup>(12)</sup>.

Table 3. Children's Birth Weight

Birth Weight	Intervention Group		N (%)
	f (%)	f (%)	
Low birth weight	8 (25.0%)	10 (31.3%)	18 (56.3%)
Normal birth weight	8 (25.0%)	6 (18.7%)	14 (43.7%)
Total	16 (50.0%)	16 (50.0%)	32 (100.0%)

From table 3, it can be seen that 18 children (56.3%) of stunted children have been born in low birth weight conditions. Called Low birth weight (LBW) if the infants is born weighing < 2,500 grams. Weight at birth is related to long-term growth and development which is a follow-up impact of LBW, namely growth faltering. An infants born with LBW will have difficulty catching up at the beginning of the growth period, especially the first two years of life. Growth that lags behind normal causes children to become stunted<sup>(13)</sup>. Low birth weight infants are a projection of the health problems of pregnant women who are malnourished in the long term. LBW is a risk factor that is also mentioned in correlation to the incidence of stunting. Children with LBW have a risk of 5.87 times to experience stunting. Based on the multivariate analysis test, the history of LBW has a role in the occurrence of stunting in children under two years old in the Sungai Karias Health Center area, Hulu Sungai Utara<sup>(14)</sup>. Mortality in LBW is 4 times higher than the birth weight of 2,500 – 3,000 grams<sup>(15)</sup>. Children born with LBW are at risk of stunting at school age<sup>(16)</sup>.

Table 4. Children's Exclusive Breastfeeding History

Exclusive Breastfeeding History	Intervention Group		N (%)
	f (%)	f (%)	
Not exclusive	13 (40.6%)	11 (34.4%)	24 (75.0%)
Exclusive	3 (9.4%)	5 (15.6%)	8 (25.0%)
Total	16 (50.0%)	16 (50.0%)	32 (100.0%)

From table 4, it can be seen that most of the stunted children who had not exclusive breastfeeding history were 24 children (75.0%). One way to prevent stunting according to WHO and UNICEF recommendations is to provide exclusive breastfeeding until the baby is six months old. Breast milk contains white blood cells, immunity, enzymes, hormones, and proteins that are very beneficial for baby's growth. Insufficient breastfeeding for up to six months or weaning breast milk too quickly and giving complementary food too early can make

infants lose the nutrients they need from breast milk. As a result, the loss of important nutrients that can make growth stunted. The incidence of stunting in children was dominated by children with a history of not being exclusively breastfed compared to children who were exclusively breastfed <sup>(17)</sup>. It was found that the OR value = 61, where toddlers who were not given exclusive breastfeeding had a 61 times chance of experiencing stunting compared to toddlers who were exclusively breastfed. Then, toddlers who are not exclusively breastfed have a 98% chance of experiencing stunting <sup>(18)</sup>.

Table 5. Children's Feeding Pattern

Feeding Pattern	Intervention Group	Control Group	N (%)
	f (%)	f (%)	
Deficient	11 (34.4%)	9 (28.1%)	20 (62.5%)
Sufficient	5 (15.6%)	7 (21.9%)	12 (37.5%)
Total	16 (50.0%)	16 (50.0%)	32 (100.0%)

From table 5, it can be seen that 20 children (62.5%) of stunted children have deficient feeding pattern. The problem of stunting is influenced by low access to food, both in terms of quantity and quality of nutrition, and often does not vary. Therefore, a diet with nutrition and a balanced menu needs to be introduced and accustomed to in daily life since the child is familiar with food. For children who are in their infancy, it is highly recommended to increase protein sources, in addition to still getting used to eating fruits and vegetables. In one serving, half of the plate is filled with vegetables and fruit, the other half is filled with protein sources (vegetable and or animal) with a higher proportion than carbohydrates. There is a correlation between feeding patterns and the incidence of stunting in toddlers <sup>(19)</sup>. Toddlers from mothers with deficient feeding patterns are 6 times more likely to experience stunting than toddlers with good eating patterns. Deficiency of nutritional intake will lead to growth disorders in children, one of which is stunting. The results of this study shows that toddlers with a diet that lacks nutritional intake, especially protein, will be 1.87 times more likely to experience stunting compared to toddlers who have adequate protein intake <sup>(18)</sup>.

Table 6. Children's Nurture

Parenting	Intervention Group	Control Group	N (%)
	f (%)	f (%)	
Baby Sitter	4 (12.5)	3 (9.4%)	7 (21.9%)
Families	3 (9.4%)	3 (9.4%)	6 (18.7%)
Parents	9 (28.1%)	10 (31.3%)	19 (59.4%)
Total	16 (50.0%)	16 (50.0%)	32 (100.0%)

From table 6, it can be seen that 19 children (59.4%) of stunted children nurtured by their own parents. The poor parenting practices referred to here are the lack of knowledge of parents regarding the health and nutrition of children, before and during pregnancy. This is very influential because to get optimal growth and development, everything must be prepared from the first 1,000 days of their life or from the time of conception. That is the importance of a mother to increase knowledge, especially before pregnancy. Because good parenting since the child is in the womb is important in preventing stunting.

Table 7. Children's Family Income

Family Income	Intervention Group	Control Group	N (%)
	f (%)	f (%)	
Less than regional minimum salary	11 (34.4%)	8 (25.0%)	19 (59.4%)
More than regional minimum salary	5 (15.6%)	8 (25.0%)	13 (40.6%)
Total	16 (50.0%)	16 (50.0%)	32 (100.0%)

From table 7, it can be seen that most of the stunted children whose family income is less than regional minimum salary were 19 children (59.4%). Malnutrition that causes stunting is often associated with financial problems that occur in a family. Among family income is below the minimum salary, stunting usually occurs because parents cannot provide balanced nutrition for their children in the first 1000 days of a baby's life. In fact, stunting is not only experienced by families with family incomes below the minimum wage, but also those with affluent or wealthy family status. Because the factors that cause stunting are very complex. As a result, stunting occurs which not only interferes with physical growth, but also disrupts brain development.

Table 8. How to Drink Zinc Syrup

Drink Zinc Syrup	Intervention Group		N (%)
	f (%)	f (%)	
Direct	5 (15.6%)	8 (25.0%)	13 (40.6%)
Mixed drinks	8 (25.0%)	7 (21.9%)	15 (46.9%)
Mixed foods	3 (9.4%)	1 (3.1%)	4 (12.5%)
Total	16 (50.0%)	16 (50.0%)	32 (100.0%)

From table 8, it can be seen that 15 children (46.9%) of stunted children drink zinc syrup directly. Zinc is best given on an empty stomach. For some children will experience vomiting because it tastes bad. If you want to be circumvented, you may use food or drink, but not all types are allowed. What should be avoided is when taken or eaten with milk, coffee, cheese, high-fiber foods, and cereals and whole grain breads.

Table 9. Z-Score Index in Intervention Group

Z-Score Index	Increase		N (%)
	f (%)	f (%)	
Weight / Age	16 (100%)	0 (0%)	16 (100%)
Height / Age	16 (100%)	0 (0%)	16 (100%)
Weight / Height	16 (100%)	0 (0%)	16 (100%)
Mean of Weight = 2.7 kg	Mean of Height = 2.9 cm		

After 4 months of zinc supplementation with a dose of 1 tablespoon (10 mg) per day, the results showed that there was a significant difference in the Z-score index of stunting children who received zinc compared to the control group with p value 0.001. The average weight gain in intervention group was 2.7 kg, while the average increase in height in intervention group was 2.9 cm.

Zinc supplementation significantly had a positive response to weight and height gain, and was able to increase linear growth in stunted adolescents and children<sup>(20)</sup>. Provision of protein and multi-micronutrients (iron, zinc, calcium, iodine, and vitamin A) has an influence on the linear growth of children even though the child is over 2 years old<sup>(21)</sup>.

Meta-analytical studies in Asia, Africa, and America concluded that the use of zinc at a dose of 5 – 40 mg/day for 2-12 months can improve linear growth. In infants aged 6 – 23 months, zinc supplementation should be given routinely for at least 2 months every 6 months<sup>(22)</sup>. Giving 10 mg zinc supplements every day for 6 months can increase height. The zinc adequacy rate is around 3-16 mg/day<sup>(23)</sup>.

Table 10. Z-Score Index in Control Group

Z-Score Index	Increase		N (%)
	f (%)	f (%)	
Weight / Age	16 (100%)	0 (0%)	16 (100%)
Height / Age	16 (100%)	0 (0%)	16 (100%)
Weight / Height	16 (100%)	0 (0%)	16 (100%)
Mean of Weight = 1.2 kg	Mean of Height = 1.1 cm		

The control group was not given zinc supplementation at the time of the study. The weight and height of the respondents were allowed to grow naturally. The average weight gain in control group was 1.2 kg. While the average increase in height in control group was 1.1 cm.

#### IV. CONCLUSION

Stunting prevention is carried out by efforts to control the first 1,000 days of life through infant and child feeding programs, including exclusive breastfeeding, nutritionally balanced complementary foods, and breastfeeding for up to 2 years or more. This homework cannot be done by the government alone. Convergent cooperation is needed, both across programs and across sectors to achieve these targets.

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# Stress And Coupling Mechanism In Postpartum Mothers Ethnography Study On Postpartum Mothers In Darungan Village, Pare District, Kediri Regency

Ratna Hidayati<sup>a,1</sup>

<sup>a</sup> Karya Husada College of Health Sciences, Kediri, Jl. Soekarno Hatta 07 Bendo, Kediri 64183, Indonesia

\*Corresponding Author E-mail:ratnahidayati1971@gmail.com

## ABSTRACT

*Keywords:*

Stress\_1 Coping  
Mechanism\_2  
postpartum\_3  
Ethnography\_4

Physical changes that occur in postpartum mothers require the ability to adapt both physically and psychologically which of course has started since pregnancy. The inability to adapt to the postpartum period will cause stress both physically and psychologically and even have an impact on the baby. Socio-cultural and environmental factors in society can affect stress, such as some rituals and dietary restrictions for postpartum mothers from Javanese tribes, but also can play a role in helping mothers' coping mechanisms to deal with stress with the support and attention given by the family. The purpose of this study was to determine stress and coping in postpartum mothers in Darungan Village, Pare District, Kediri Regency. This research is an ethnographic qualitative study with pregnant women participating in Darungan Village, Pare District, Kediri Regency with a total sampling of 12 informants. Data were collected through observation and structured interviews and analyzed by analysis of cultural themes. The results showed that the theme of stress that occurred in postpartum mothers was due to physical complaints, mood disorders, feeling neglected by their husbands/family, and the impact of being lazy to interact with their babies. Meanwhile, the mother's coping mechanism in dealing with stress is silent and does not confront when it is related to the culture that parents usually do first and the strength to overcome the stress is due to the support of her husband. It is recommended that the husband/family provide support with an accepting attitude, be ready to listen to complaints, and provide assistance in getting through the postpartum period.

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## I. INTRODUCTION

The pattern of human life is strongly influenced by social and cultural aspects, including aspects of the life of women and their babies after giving birth. These cultural influences can be classified into three categories, namely those that have a positive impact on health, have a negative impact on health and have no impact, or are not related to the health of the mother and her baby. Problems will arise if socio-cultural and environmental factors in society contribute to increasing mortality or morbidity rates for mothers and babies where their rights are still not fulfilled. One of the beliefs and knowledge of Javanese culture is about various taboos, causal relationships between food and health and illness often have a negative impact on the health of mothers and babies. For example, it is forbidden to eat sea fish, chicken, and drinking lots of water which is believed to slow wound healing.<sup>[1]</sup>

In addition to socio-cultural factors, the physical changes that occur in postpartum mothers often become a problem of decreasing health status or morbidity if the mother has difficulty adapting from pregnancy to childbirth. Not to mention the psychological adaptations that mothers also face, adaptations of their husbands/partners, grandparents, and biological children before. The inability to adapt or coping mechanisms that are not adaptive in dealing with the postpartum phase will cause stress to the mother which has an impact such as postpartum blues, and depression.<sup>[2]</sup>

The global prevalence of postpartum depression is up to 10-15%. Research conducted in India, involving 359 primiparous mothers, found the incidence of postpartum depression as much as 11%.<sup>[3]</sup> Meanwhile, the incidence of postpartum depression in Asia is quite high, varying between 26-85%. In Indonesia alone, the incidence is between 50-70% of post-partum women. Research in Indonesia reported at Haji Adam Malik Hospital, Medan in 2009 that of 50 spontaneous postpartum mothers who were hospitalized, 16% experienced postpartum depression.<sup>[4]</sup>

Postpartum depression is a mood disorder that occurs after childbirth and reflects psychological dysregulation with characteristics such as feelings of depression, excessive anxiety, insomnia, and weight changes.<sup>[5]</sup> In this condition, postpartum mothers will have a depressed mood, loss of interest or pleasure in activities, appetite disorders, sleep disturbances, physical agitation or psychomotor slowing, weakness, feeling useless, difficulty concentrating, even suicidal ideation.<sup>[6]</sup> The impact on babies due to their mothers experiencing depression is that babies are at risk of experiencing delays from various aspects, both in terms of cognitive, psychological, neurological, and motoric. Babies will also tend to be fussier in response to seeking and getting attention from their mothers.<sup>[7]</sup>

Given the impact of the problem, it is important to reassure the mother and provide adequate psychological support. Mothers need to adapt to lifestyle adjustments since pregnancy, be able to recognize and detect psychological disorders so that they can fully anticipate and understand the mother's condition. Therefore, the researcher wanted to know the stress and coping of postpartum mothers in Darungan Village, Pare District, Kediri Regency.

## II. METHOD

This research is a qualitative study with an ethnographic approach with postpartum mothers participating in Darungan Village, Pare District, Kediri Regency with a total sampling of 12 informants. To develop the qualitative revolution, data were collected through observation and structured interviews with deep interviews, textual analysis, and cultural studies related to what was going on with the analysis of cultural themes.<sup>[8]</sup> This research has received ethical approval from the Health Research Ethics Commission no. 22/EC/STIKES/KH/11/2020.

## III. RESULTS AND DISCUSSION

Since the beginning of pregnancy, a woman has experienced many changes, both physical and psychological along with the development of the fetus she is carrying. These changes require the mother's ability to adapt, which will certainly be easier with the support of the family and the socio-cultural environment. This process lasts until postpartum and throughout life along with the developmental tasks of both himself and the children he has born. The inability to adapt both physically and psychologically will cause stress to a person, but if that person has a good coping strategy, he will pass through every stage of development in his life. Complex physical and emotional changes require adaptation to lifestyle adjustments to postpartum conditions. The conflict between the desire for procreation, a pride that is grown from socio-cultural norms, and the problems of this period can trigger various psychological reactions, ranging from mild emotional reactions to severe mental disorders.

### Characteristics of Informants

Selection of informants based on suitability and adequacy, namely informants who have knowledge related to the research topic and also informants who can describe all phenomena related to the research topic. Broadly speaking, this research can be realized because of the willingness of informants to provide information through in-depth interviews.

### Main Informant (Postpartum Mother)

**Table 1. Distribution of Main Informant Characteristics**

No	Characteristics	Frequency (f)	Percentage (%)
1	<b>Mother's age</b>		
	21-25 years	6	50
	26-30 years	4	33.3
	31-35 years	1	0.83
	>35 years	1	0.83
2	<b>Education</b>		
	Primary school	4	33.3
	Junior high school	4	33.3
	Senior High School	4	33.3
3	<b>Occupation</b>		
	Housewife	11	91.7
	Self-employed	1	8.3
4	<b>Give birth to</b>		
	1	5	41.7
	>1	7	58.3

Based on the table above, it is known that the majority of the informants are 21-25 years old, which is half (50%), elementary, junior high, high school education is on average the same, which is almost half (33.3%), almost all of the informants work as housewives (91.7 %), the delivery status was mostly more than once (58.3%).

### Supporting Informants

**Table 2. Characteristics of Supporting Informants**

No	Characteristics	Frequency (f)	Percentage (%)
1	<b>Age of Informant</b>		
	25-29 years	2	16.7
	29-33 years	4	33.3
	34-38 years	5	41.7
	>38 years	1	8.3
2	<b>Education</b>		
	Primary school	2	16.7
	Junior high school	3	25
	Senior High School	5	41.7
	College	2	16.7
3	<b>Occupation</b>		
	Farmer	4	33.3
	Craftsman	2	16.7
	self-employed	4	33.3
	PNS/TNI/Polri	2	16.7
4	<b>Relationship with participants</b>		
	Husband	6	50
	Parent	4	33.3
	Siblings	2	16.7

Based on the table above, it is known that the age of most supporting informants is 34-38 years old, which is almost half (41.7%), high school education is almost half (41.7%), the work of informants is balanced between farmers and entrepreneurs, which is 33.3% and half of the relationship with the main informants is as husband by 50%.

### Postpartum Mother's Stress and Coping

Javanese culture in the postpartum period includes using pilis, parem, drinking herbal medicine, massage, *walikdadah*, *wearing octopus*, *wearing stag*, *cramping*, sitting down, abstinence from eating and sitting culture. This culture even applies up to 40 days of birth. This

culture is part of the factors that contribute to the emergence of stress in postpartum mothers in addition to the adaptations that they are going through. The following is an overall theme formed from data collected through in-depth interviews (indepth interviews), in the form of excerpts from interviews conducted on postpartum mothers who experience stress.

Excerpts of the results of interviews with the first postpartum informants regarding the stress of the theme of physical complaints experienced are as follows:

*"Wow... if I hit my breast it hurts, I'm sorry... pinch... pinch... so I'm stressed, I'm afraid of what's going on".<sup>1</sup>*

*"My baby's tongue is still rough....so my nipple is blistered on the other side....., so how does it feel when you want to breastfeed.....yes it's stressful too."<sup>2</sup>*

*"If you remember the days after giving birth yesterday..... your stomach hurts like it's being squeezed..... what's wrong with you too? Especially with blood clots like that..."<sup>5</sup>*

Postpartum physiological adaptations due to the process of involution, lactation, and breastfeeding trigger stress. With changes in the body that are felt to cause worries such as irrational thinking, changes in affection triggered by predisposing factors such as hormonal changes, marital dysfunction, or the inability to build relationships with other people resulting in a lack of support systems.<sup>[9]</sup>

Following what Soep reported in 2011 that primiparous mothers or mothers who gave birth for the first time experienced more postpartum depression.<sup>[10]</sup> Participants no. 1,2 and 5 are primiparous mothers. This happens because the psychological unpreparedness of primiparous mothers in facing the birth of a baby is greater than that of multiparous mothers or those who have given birth more than once. Multiparous mothers already have experience dealing with previous births so they are not stressed in welcoming the birth of the child.

Excerpts of the results of interviews with the first postpartum informants regarding the stress theme of mood disorders experienced are as follows:

*"I don't know, Ms....sometimes I suddenly feel sad without knowing why....especially if you go to work and I'm at home alone with this baby....it's just weak by nature....is it because of lack of sleep...you often wake up at night"<sup>7</sup>*

*"I'm so lazy to eat... I don't feel hungry either... I just want to lie down."<sup>2</sup>*

Adaptation to a new role for postpartum mothers because they have to take care of their babies, reduces the mother's sleep time. These activities tend to make the mother tired so that it can trigger stress. Lack of sleep causes the sleep hormone produced by the pineal gland of the brain, namely the hormone melatonin to decrease. Disruption of hormone production is a contributor to postpartum depression.<sup>[11]</sup>

Excerpts from the interview with the first postpartum informant regarding the stress of the theme of feeling neglected are as follows:

*"It seems that my husband only focuses on the baby, sis....my mother-in-law too....eh...my mother is like that too...wow, I feel neglected now, hehe..."<sup>5</sup>*

*"The first birth with the second child, the second child hurts, sis... Maybe I'm getting old, huh... especially when I was born I wasn't waited on... there was no one to help"<sup>6</sup>*

The feeling of neglect in postpartum mothers triggers stress. The same thing can happen to husbands and biological children if the mother herself only focuses on the baby. Lack of affection, communication, and interaction are the main problems that cause feelings of being neglected.<sup>[12]</sup>

Excerpts from the interview with the first postpartum informant regarding the impact on the baby are as follows:

*"It was time for Ms. at the age of 1 week the first .... I'll just let it cry if you're tired ..."<sup>6</sup>*

*"My baby number two is ndhuableq sis....(other words are naughty).....I cook every night fussy when I sleep in the morning....Just tease my parents....."<sup>1</sup>*

The extreme fatigue, sadness and anxiety of a postpartum mother have a serious impact on her emotional and physical health. If the mother is depressed, the relationship with her baby becomes unstable. This condition affects the baby's development considering that the mother

should provide warmth and comfort to her child. The associated physical and psychological stress can result in an emotional crisis that affects the health of the mother and baby as well as affects family integration and hinders the emotional bond between mother and baby.<sup>[13]</sup>

Excerpts of the results of interviews with the first postpartum informants regarding coping done to deal with stress, with the theme of coping with silence and not confrontation are as follows:

*"If I am forbidden to eat this, especially the nutritious ones such as fish, chicken and eggs, I ask Ms. why is that? Because it's not necessarily what people said before everything was true..... I might be malnourished later, hehe...."<sup>11</sup>*

*"Sometimes I keep quiet, Ms. I don't deny that I am forbidden to eat... I'm worried that my parents-in-law will be offended... but later on after the control I ask the nurse/midwife is it true? Well...if the officer said it was my in-laws, I heard it myself and wasn't hurt"<sup>12</sup>*

*"My mother said that if you eat fish, your breast milk will also be fishy....the baby will not like it"<sup>10</sup>*

*"I have to drink the bitter godogkan jamu every day, sis... the word other than the breast milk is smooth as well as the body so it won't be fat after giving birth"<sup>13</sup>*

*"My sister after giving birth was not allowed to sleep on her back because it could cause white blood to rise to the eyes, the legs should not be bent, the legs should be sitting straight, wearing pilis on the forehead, wearing stageng, well, there are a lot of taboos....oh yeah, take a bath wuwung morning and evening too..... fortunately now my grandmother is no longer as loud as before....my mother is also calm as long as I am healthy"<sup>8</sup>*

Stress in postpartum mothers is also influenced by socio-cultural factors. The advice of parents or in-laws at this time related to culture, of course, cannot be rejected, causing stress. In addition, psychosocial background, support from the environment (husband, family), stress in the family, stress experienced by oneself, postnatal fatigue and changes in roles experienced by mothers also contribute to increasing stress levels.<sup>[14]</sup> However, positive family support in the form of attitudes/actions and family acceptance of postpartum mothers greatly helps the process of coping mechanisms in dealing with stress. The family functions as a support system that is ready to assist.<sup>[15]</sup> The most expected support by postpartum mothers is from their husbands.

*"Alhamdulillah....my husband is always ready to help me...accompanying me to wake up at night to breastfeed..."<sup>4</sup>*

*"Yes ma'am... it's a shame if we don't get help... moreover we're far from our parents and siblings... so it's normal... we have to understand each other"<sup>10</sup>*

Good husband support is one factor that can prevent postpartum stress/depression.<sup>[4]</sup> Hormonal changes cannot be prevented, but awareness of family and surrounding relatives can be the key to overcoming mental disorders in new mothers. Husbands can be quite good listeners, help detect changes that occur in postpartum mothers so that they can immediately find the best solution for their wives so that their wives are happy and will produce happy children and families too.

#### IV. CONCLUSION

The theme of stress that occurs in postpartum mothers is due to physical complaints, mood disorders, feeling neglected by their husbands/family, and the impact of being lazy to interact with their babies. Meanwhile, the mother's coping mechanism in dealing with stress is silent and does not confront when it is related to the culture that parents usually do first and the strength to overcome the stress is due to the support of her husband.

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# Dyad Model as a Caring Innovation in High Risk Pregnancy

Sri Wahyuni <sup>ab,1\*</sup>, Moses Glorino Rumambo Pandin <sup>c</sup>, Nursalam <sup>d</sup>

<sup>a</sup> Doctoral Program, Nursing Faculty, Universitas Airlangga

<sup>b</sup> Departemen of Maternity Nursing, Nursing Faculty, Universitas Islam Sultan Agung

<sup>c</sup> Departemen of English Literature, Faculty of Humanities, Universitas Airlangga

<sup>d</sup>Lecturer of the Faculty of Nursing, Airlangga University

\* Corresponding author: wahyuni@unissula.ac.id

## AB STRAC T

*Keywords:*  
Dyad Model  
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**Background** Pregnancy is a process of maturity for women that requires adaptation to the changes in their new roles. Adjustment to a new role is not easy, especially if the pregnancy is accompanied by risks, so it is necessary to get treatment to minimize complications. Dyad models that optimize husband or family support are very important to prevent the risk of complications and adapt mothers to their new roles. **The purpose** of this study was to determine the effect of the dyad model on high-risk pregnancies. **The method** used with a literature review is through the collection of articles from Scopus, ebsco, ProQuest and PubMed. **The results** obtained were articles from Scopus 9, Ebsco 107, PubMed 214 and ProQuest 85 which carried out identification, screening and eligibility for 25 articles. Overall results mention. Journals are categorized into 4 groups, Dyad Model and social support, high-risk pregnancy, maternal role and Self Efficacy. **Conclusion**, there is an effect of the dyad model on care for high-risk pregnancies.

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## 1. INTRODUCTION

Pregnancy is part of the process of female maturity which can cause changes in all body systems as well as have a psychological impact. Pregnancy does not always run normally, we often encounter pregnancies with a variety of risks that accompany it or are called high-risk pregnancies. Pregnancy with complications that can affect the health of both the mother and the fetus. Types of risk in pregnancy such as pregnancy with HIV positive, diabetes mellitus, hypertension in pregnancy, obesity, multiple pregnancies, pregnancy too young or too old, biological factors, social factors such as age, social status, parity, obstetric history, occupation, factors Psycho-social and nutritional status also influence health conditions during pregnancy [1].

The incidence of high-risk pregnancy is a very dangerous condition and can increase both maternal and infant mortality rates. Data from WHO states that every day a number of 810 mothers die due to pregnancy and childbirth, 75% of them die due to complications that occur during the pregnancy period. [2]. The prevalence of high-risk pregnancies was 14.4%. Based on the color-coded risk stratification, 7.5% of the women were categorized as red, 6.9% yellow, 72.0% green, and 13.6% white. Women with high-risk pregnancies were 4.2 times more likely to develop illnesses and other risky conditions during labor [3].

High-risk pregnancies can cause various health problems for the mother and the fetus during the perinatal period. High-risk pregnancies with impaired blood pressure have the potential to because preterm labor and low birth weight as a result of hypoperfusion and decreased uteroplacental perfusion.

Mothers who have a pregnancy with diabetes mellitus and a history of obesity are at the highest risk of experiencing complications in pregnancy [4]. Pregnancy with obesity and Diabetes Mellitus can also lead to complications in both the mother and the fetus. Complications can include hydramnios, preterm labor, severe hypoglycemic, diabetic ketoacidosis, hypertension in pregnancy, pre-eclampsia, labor dystocia, macrosomia and intensive neonates.

Mothers with pregnancy conditions that are full of risks are stressors in themselves but need adaptation to carry out their new roles as mothers who are very important in the care and development of babies or maternal attachments. Adjustment to this change in role is not an easy thing, especially when the pregnancy is a high-risk pregnancy that actually or has the potential to interfere with the health of both the mother and the fetus [5]. High-risk pregnancy with various health threats causes affects the psychological response of the mother. The mother will feel fear, sadness, feel guilty and sometimes even experience frustration throughout her pregnancy [6]. This condition will increasingly have a negative impact on the health of the mother and the fetus and affect the mother's ability to adapt to her new role.

Women who are not ready to become mothers will feel depressed and helpless starting from pregnancy, pregnancy, delivery and during the care of the baby in their new role. Barriers that help a woman in carrying out her role will have an impact on the inability to become a mother who can cause stress or depression while carrying out her new role which will also have an impact on the growth and development of the child [7]. As for the research conducted by [8] Which states that failure to become a mother can lead to depression and have an impact on the ability of mothers to maintain pregnancy and child care. The mother's ability to adjust roles and manage problems can reduce various problems experienced during her pregnancy period [9]. Adaptation to roles with experienced pregnancy conditions requires special programs, social and family assistance and support to reduce anxiety and increase the bond between mother and fetus[10].

Efforts to improve antenatal care in high-risk pregnancies to prevent negative impacts can be made through initial screening of the risk of hypertension and modification of antenatal care. Delays in detection and treatment will increase the incidence of complications in the perinatal. [11]. Monitoring and treatment for high-risk conditions needs to be focused on both the mother and the fetus, the so-called Dyad method [12]. The Dyad method is a method that involves the interaction between two people in certain situations such as the involvement of the mother and the fetus in an action to achieve the goal of the intervention. Antenatal care and monitoring performed on the mother and fetus can monitor as soon as possible the health condition experienced by both the mother and the fetus [13]. In research conducted by [14] States that the Dyad Model for high-risk pregnancies needs to be carried out between the mother and the fetus considering that in high-risk pregnancies there are physiological disorders which are feared to interfere with the closeness of the relationship between the mother and the fetus. The Dyad model by providing interventions on the interaction between mother and fetus is best done to prevent complications that may occur in high-risk pregnancies, but this model needs to be developed by involving partner support to increase attachment and optimize one's ability to overcome problems or what is called Self Efficacy.

The involvement of a partner in the Dyad model is very important considering that the husband's pregnancy also feels anxiety, especially in a risky pregnancy. Research conducted [15] States that anxiety in a pregnancy can occur both to wives and husbands, anxiety that occurs in partners can result in attachment disorders that have an impact on the condition of fetal well-being. It is not enough just with the mother and the fetus, but support from the closest people, such as husbands, is needed to save the lives of mothers and babies. Partner support in the Dyad model is support for improving psychological conditions, partner adjustment and quality of life. [16]. The anxiety and psychological conditions felt by the couple need special intervention to increase calm and reduce the tension that occurs due to the disturbance in the pregnancy they are experiencing. Educational information during the antenatal period given to partners will be easier to understand and couples can plan for their pregnancy together. [17].

## 2. METHOD

### 2.1 Research Design

This research is a research using literature study method or literature review. Literature studies can be obtained from various sources including journals, books, documentation, the internet and libraries. The literature study method is a series of activities related to the method of collecting library data, reading and taking notes, and managing writing materials (Nursalam, 2016). The type of writing used is a literature review study that focuses on the results of writing related to the topic or a variable of writing.

### 2.2 Data Collection Method

The data used in this research comes from the results of research that have been conducted and published in national and international online journals. In conducting this research, the researchers conducted a search for research journals published on the internet using the Scopus, Ebsco, ProQuest and PubMed search engines, with keywords: Dyad Model, Maternal Role, Self Efficacy and High Risk Pregnancy.

### 2.3 Inclusion and Exclusion Criteria

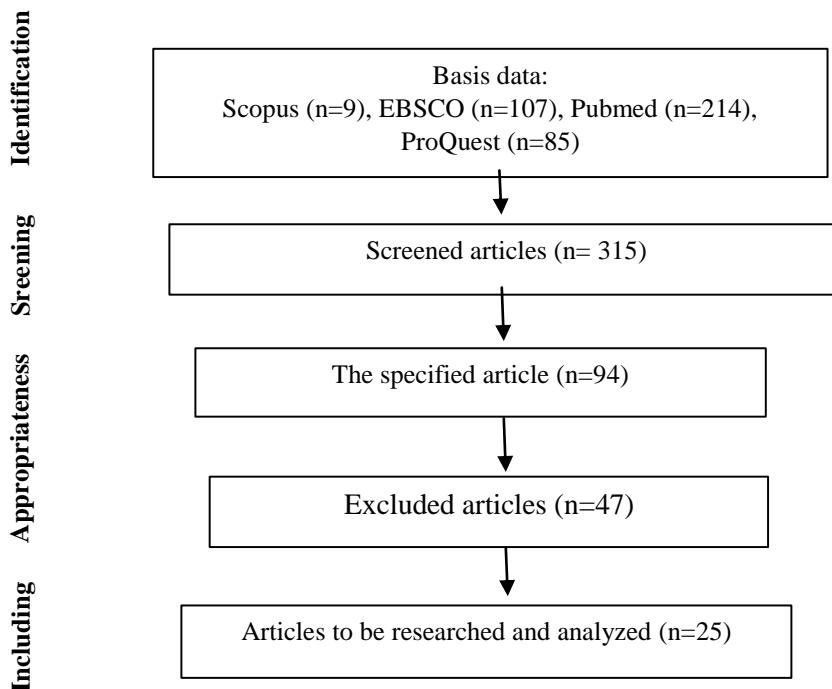
The inclusion and exclusion criteria of this Systematic Review are taken with several criteria which include problem, Intervention, Comparison, Outcome, Study Design, Time Period, Language, Type of Article and Content Theme.

In detail, the inclusion criteria that the researchers took are illustrated in the following table:

**Table 2.1 The inclusion criteria for this literature are:**

Criteria	Inklusi
<i>Problem</i>	International journals from different databases and with regard to research variables
<i>Intervention</i>	Pemberian Dyad Model
<i>Comparison</i>	There is no comparison factor
<i>Outcome</i>	The influence or impact of giving the Dyad Model
<i>Study design</i>	<i>Qualitative, Pra-eksperimental and Systematic/Literature review</i>
<i>Time period</i>	Articles published from 2019 to 2021
<i>Language</i>	English Language
<i>Article Type</i>	<i>Full text article</i>
<i>Content theme</i>	<i>Dyad Model High Risk Pregnancy</i>

After collecting data through the database, the researchers used the PRISMA (Preferre Reporting Items for Systematic Reviews and Meta Analysis) method to get the desired articles to be researched which are described in the chart below:



Literature review begins with the written material which is considered sequentially from the most relevant, relevant, and sufficiently relevant. Then read the abstract, each journal first to provide an assessment of whether the problems discussed are in accordance with what is going to be solved in a journal. Nothing about the important points and their relevance to the research problem. To keep from getting caught up in the plagiarism element, the author should also note the sources of information and include a bibliography. If indeed the information comes from other people's ideas or writing. Make notes, quotes, or information that are arranged systematically so that writing can easily be searched back if any time needed (Nursalam, 2020).

Each journal that has been selected based on the criteria, a conclusion is drawn that describes the Dyad Model explanation in maternity services. Before the author makes conclusions from several literature results, the author will identify in a brief summary form a table containing the author's name, year of writing, study design, samples, instruments (measuring instruments), and research results. After the writing results from much literature have been collected, the author will analyze the application of the Dyad Model in High-Risk Pregnancy.

#### 2.4 Metode Analisis Data

Research journals that match the inclusion criteria are then collected and a journal summary is made including the name of the researcher, the year of publication of the journal, study design, research objectives, samples, instruments (measuring instruments) and a summary of the results or findings. The summary of the research journal is entered in a table sorted according to the title and year of publication of the journal and according to the format mentioned above.

To further clarify the abstract analysis and full text of the journal, read and observe it. The journal summary is then analyzed for the content contained in the research objectives and the results/research findings. The analytical method used is using journal content analysis.

### 3. RESULTS AND DISCUSSION

#### 3.1 Results

The literature review was conducted to find out about the Dyad Care Model in high-risk pregnancies which was carried out through the collection of existing literature. The literature was collected using a critical appraisal table to answer the objectives of the measurement and compare with the simple measurement results.

**Table 3.1 Critical Appraisal Journals**

No	Title of Literature	Literature Analysis	Source
1	Anxiety, depression, dyadic adjustment, and attachment to the fetus in pregnancy: Actor-partner interdependence mediation analysis	Providing services with the Dyad model is able to increase accountability and service as well as improve the results of care for patients.	Brandão, T., Brites, R., Pires, M., Hipólito, J., & Nunes, O. (2019). Anxiety, depression, dyadic adjustment, and attachment to the fetus in pregnancy: Actor-partner interdependence mediation analysis. <i>Journal of Family Psychology</i> , 33(3), 294–303. [18]
2	Maternal personality, social support, and changes in depressive, anxiety, and stress symptoms during pregnancy and after delivery: A prospective-longitudinal study	The support given to the mother during the pregnancy period will be able to increase the mother's knowledge, understanding and insight so that there is an increased understanding of the health conditions of herself and the fetus in the womb.	<i>PLoS ONE</i> , 15(8 August), 1–18. <a href="https://doi.org/10.1371/journal.pone.0237609">https://doi.org/10.1371/journal.pone.0237609</a>
3	Dyadic coping in couples: A conceptual integration and a review of the empirical literature. <i>Frontiers in Psychology</i>	Pada Ibu hamil intervensi Dyad dapat mengoptimalkan keterlibatan antara ibu dan janin atau antara ibu dan suami untuk mendapatkan tindakan yang dilakukan secara bersama-sama	Falconier, M. K., & Kuhn, R. (2019)., 10(MAR), 1–23. <a href="https://doi.org/10.3389/fpsyg.2019.00571">https://doi.org/10.3389/fpsyg.2019.00571</a>
4	The Role of Social Support in Reducing Anxiety Among High Risk Pregnant Women in Third Trimester	Dyad bagian dari support sosial atau dukungan sosial yang dapat diambil dari pasangan, orang terdekat ataupun lingkungan	Vidayanti, V., & Pratiwi, D. A. A.(2019) <i>International Respiratory Health Conference (IRHC)</i> , 1, 610–615.
5	Social support—a protective factor for depressed perinatal women?	A good understanding will be able to create thought patterns and build positive perceptions of pregnancy and their abilities. Such conditions can minimize stressors experienced by mothers, reduce the risk of depression that can occur in the antenatal and post-natal periods and accelerate the adaptation process to achieve new roles.	Milgrom, J., Hirshler, Y., Reece, J., Charlene, C. H., & Gemmill Alan, A. W. (2019). <i>International Journal of Environmental Research and Public Health</i> , 16(8). <a href="https://doi.org/10.3390/ijerph16081426">https://doi.org/10.3390/ijerph16081426</a>
6	Social support and its role the prevention of depression and anxiety during pregnancy in Turkmen women	Social support that has a positive impact on the mother's understanding and level of knowledge can also increase self-confidence. The high level of mother's self-confidence has a positive correlation with the mother's ability to make decisions about her own health	Narges Rafiei1, Mostafa Amini-Rarani2, Fahimeh Eizadi1, Hassan Rafiey3, N. S. S. A. (2019) <i>Pacific AffairsInt J Biomed Public Health</i> , 2(4), 75–80. <a href="https://doi.org/10.2307/2752507">https://doi.org/10.2307/2752507</a>
7	Research recommendations from the national institutes of health workshop on predicting, preventing, and	Monitoring and treatment for high-risk conditions needs to be focused on both the mother and the fetus, the so-called Dyad method	Maric-Bilkan, C., Abrahams, V. M., Arteaga, S. S., Bourjeily, G., Conrad, K. P., Catov, J. M., ... Roberts, J. M. (2019)

	treating preeclampsia	<i>Hypertension</i> , 73(4), 757–766. <a href="https://doi.org/10.1161/HYPERTENSIONAHA.118.11644">https://doi.org/10.1161/HYPERTENSIONAHA.118.11644</a>
8	Maternal health care wearing equipment based on fetal information monitoring	The Dyad method is a method that involves the interaction between two people in certain situations such as the involvement of the mother and the fetus in an action to achieve the goal of the intervention. Antenatal care and monitoring performed on the mother and fetus can monitor as soon as possible the health condition experienced by both the mother and the fetus
9	Analysis of the NANDA-I taxonomy “maternal-fetal dyad” concept in high-risk pregnancy: integrative review	The Dyad model for high-risk pregnancies needs to be carried out between the mother and the fetus considering that in pregnancies there is a high risk of physiological disorders which are feared to interfere with the closeness of the relationship between the mother and the fetus.
10	Dyadic coping, marital adjustment and quality of life in couples during pregnancy: an actor–partner approach	Dyad is a support to improve psychological condition, partner adjustment and quality of life
11	The Effect Of Prenatal Attachment Health Education With Audiovisual On Readiness To Be Parents At Sleman Primary Health Care	Educational information during the antenatal period given to partners will be easier to understand and couples can plan together for their pregnancy
12	Serratia marcescens as a cause of unfavorable outcome in the twin pregnancy	A good prenatal will be able to minimize complications for both mother and baby
13	Experiences of the maternal role and support in mothers with cognitive limitations who have children in placement	failure to become a mother can lead to depression and have an impact on the mother's ability to maintain pregnancy and child care
14	Mother–Adolescent Conflict Interaction Sequences: The Role of Maternal Internalizing Problems	The mother's ability to adjust roles and manage problems can reduce various problems experienced during her pregnancy period
15	Effects of a supportive program on uncertainty, anxiety, and maternal-fetal attachment in women with	Adaptation to roles with experienced pregnancy conditions requires special programs, social and family assistance and support to reduce anxiety and increase the

	high-risk pregnancy.	bond between mother and fetus.	0.06.17
16	Maternal Role: A Concept Analysis	Maternal Role is the role of a mother where this new role is not an easy thing for women, and it needs mentoring, social and family support or mentoring so that the process experienced can run well.	Shrestha, S., Adachi, K., A Petrini, M., & Shrestha, S. (2019). <i>Journal of Midwifery and Reproductive Health</i> , 0(0), 1–10. <a href="https://doi.org/10.22038/jmrh.2019.31797.1344">https://doi.org/10.22038/jmrh.2019.31797.1344</a>
17	Factors affecting utilization of antenatal care in Ethiopia : A systematic review and meta- analysis.	Care during the antenatal period is influenced by the level of education of the mother and husband, planned pregnancy, exposure to social media, economic status and distance to antenatal care	Id, T. T., Chojenta, C., Smith, R., & Loxton, D. (2019). Factors affecting utilization of antenatal care in Ethiopia : A systematic review and meta- analysis, 1–24.
18	Stress, Depressive Symptoms, and Maternal Self-Efficacy in First-Time Mothers: Modelling and Predicting Change across the First Six Months of Motherhood	Self-Efficacy is a belief, perception and belief in one's abilities	Law, K. H., Dimmock, J., Guelfi, K. J., Nguyen, T., Gucciardi, D., & Jackson, B. (2019). <i>Applied Psychology: Health and Well-Being</i> , 11(1), 126–147. <a href="https://doi.org/10.1111/aphw.12147">https://doi.org/10.1111/aphw.12147</a>
19	Professional self-efficacy and job satisfaction: The mediator role of work design	Good self-esteem will reduce individual stress and be able to improve the quality of maternal health during pregnancy. Self-efficacy is related to the success of the mother in the perinatal period	Bargsted, M., Ramírez-Vielma, R., & Yeyes, J. (2019). <i>Revista de Psicología Del Trabajo y de Las Organizaciones</i> , 35(3), 157–163. <a href="https://doi.org/10.5093/jwop2019a18">https://doi.org/10.5093/jwop2019a18</a>
20	Increasing of Pregnancy Education on the Self Efficacy of Pregnant Women in Groups Accompanied by Their Husbands and Groups Unaccompanied	Educational given during pregnancy significantly increases self-esteem, whether the mother is accompanied by her husband or not	Chalid, M. T., & Hasanuddin, U. (2019). International Journal of Sciences : Increasing of Pregnancy Education on the Self Efficacy of Pregnant Women in Group, (February).
21	Intervention intended to improve public health professionals' self-efficacy in their efforts to detect and manage perinatal depressive symptoms among Thai women: A mixed-methods study	Self-Efficacy can be influenced by four important sources, namely performance achievement, experience, verbal persuasion and sources of information	Phoosawan, N., Lundberg, P. C., Phuthomdee, S., & Eriksson, L. (2020). <i>BMC Health Services Research</i> , 20(1), 1–12. <a href="https://doi.org/10.1186/s12913-020-5007-z">https://doi.org/10.1186/s12913-020-5007-z</a>
22	Anxiety and Fear Level toward Childbirth among Primigravida versus Multigravida	The low self efficacy will cause anxiety in the mother. This is because pregnant women experience anxiety in facing their new roles, especially primigravida mothers who have no experience	Mahmoud, T. M., Obstetrics, A., Nursing, G., & Nursing, F. (2019). * Madiha Mohamed Tisson , ** Azza Mohamed Elsayed Atwa , 8(2), 36–44. <a href="https://doi.org/10.9790/1959-0802023644">https://doi.org/10.9790/1959-0802023644</a>
23	Professional self-efficacy and job satisfaction: The mediator role of work design.	Good self-esteem will reduce individual stress and be able to improve the quality of maternal health during pregnancy. Self-efficacy is related to the success of the mother in the perinatal period	Bargsted, M., Ramírez-Vielma, R., & Yeyes, J. (2019). <i>Revista de Psicología Del Trabajo y de Las Organizaciones</i> , 35(3), 157–163. <a href="https://doi.org/10.5093/jwop2019a18">https://doi.org/10.5093/jwop2019a18</a>

24	Impact of maternal HIV infection on pregnancy outcomes in southwestern China – A hospital registry based study	HIV-infected pregnancies can cause perinatal disorders associated with the birth of babies in poor conditions, namely preterm birth, low birth weight, and intrauterine fetal growth disturbances. Fetuses were born to pregnant women who are HIV positive have the potential to experience low APGAR scores as a result of asphyxia that occurs because maternal infection inhibits surfactant synthesis and secretion.	Yang, M., Wang, Y., Chen, Y., Zhou, Y., & Jiang, Q. (2019). <i>Epidemiology and Infection</i> , 147. <a href="https://doi.org/10.1017/S0950268818003345">https://doi.org/10.1017/S0950268818003345</a>
25	Impact of overweight and obesity on pregnancy outcomes in women with gestational diabetes – Results from a retrospective multicenter study	Counseling before or during pregnancy can reduce the risk of pregnancy disorders such as macrosomia and large of gertational age (LGA).	Machado, C., Monteiro, S., & Oliveira, M. J. (2020). <i>Archives of Endocrinology and Metabolism</i> , 64(1), 45–51. <a href="https://doi.org/10.20945/2359-3997000000178">https://doi.org/10.20945/2359-3997000000178</a>

The results of the analysis of 25 literature states that either the Ha or alternative hypothesis is accepted, which means that there is an effect of the Dyad Model on nursing care in high-risk pregnancies.

### 3.2. Discussion

The results of the review of 25 journals are categorized into 4 groups with details, the first group is a journal that focuses on the Dyad Model and 7 titles of social support, the second group of journals that discuss high-risk pregnancy is 6 titles, the third group of journals that discuss maternal role as much 6 titles and the fourth group of journals discussing Self Efficacy as many as 6 titles.

The dyad Model is a method of giving intervention that involves the interaction between two people in certain situations such as the involvement of the mother and fetus or husband and wife in an action to achieve the goal of the intervention. [16]. Providing services with the Dyad model is able to increase accountability and service as well as improve the results of care for patients. The Dyad Model can be applied to mothers with a high risk of pregnancy by optimizing the interuse between the mother and the partner or husband in providing interventions. The provision of interventions will be more optimal and provide mutual support in increasing understanding of pregnancy, understanding the role of parents, adapting roles and increasing confidence in their ability to maintain the health of their pregnancy. [15].

Pregnancy with a high risk condition is a pregnancy with complications that result in health problems for both the mother and the fetus. High risks in pregnancy include pregnancy with HIV positive, diabetes mellitus, hypertension in pregnancy, obesity, multiple pregnancies, pregnancies that are too young or too old [1]. High-risk pregnancy conditions can cause complications to both the mother and the fetus during the perinatal period. Women who experience high-risk pregnancy conditions must have the resilience to struggle in facing their new roles or maternal roles.

Maternal Role is the role of a mother where this new role is not an easy thing for women, and the need for assistance, social and family support or escort so that the process is experienced can run well [19].

The dyad model is an intervention model that can be provided by involving two people. This intervention is the development of social support or social support. In pregnant women, Dyad intervention can optimize involvement between mother and fetus or between mother and husband to get action done together. [20] This intervention is carried out with the aim of increasing comfort, reducing psychological anxiety, increasing self-potential and preventing the emergence of various kinds of disorders that can occur during the period of maternal pregnancy. Dyad is part of social support or social support that can be taken from a partner, loved ones or the environment [21]

The support given to the mother during the pregnancy period will be able to increase the mother's knowledge, understanding and insight so that there is an increased understanding of the health conditions

of herself and the fetus in the womb. [18]. A good understanding will be able to create thought patterns and build positive perceptions of pregnancy and their abilities. Such conditions can minimize stressors experienced by mothers, reduce the risk of depression that can occur in the antenatal and post-natal periods and accelerate the adaptation process to achieve new roles. [22].

Social support that has a positive impact on the mother's understanding and level of knowledge is also able to increase self-confidence or what is called self-efficacy. Self-Efficacy can be increased through increasing knowledge of pregnant women. And understanding of their health conditions during pregnancy will be able to reduce individual stressors during pregnancy and prepare themselves to become mothers. Research conducted by [23] Mentioned that the education given during pregnancy significantly increases self-Efficacy, whether the mother is accompanied by her husband or not. [23](23)(Chalid, 2019)<sup>25</sup>[25](Chalid & Hasanuddin, 2019)(Chalid & Hasanuddin, 2019)(Chalid & Hasanuddin, 2019). Self-Efficacy can be influenced by four important sources, namely performance achievement, experience, verbal persuasion and sources of information [24]. Achieving these components properly will increase the confidence and motivation of pregnant women in carrying out maternal roles. The low self efficacy will cause anxiety in the mother. This is because pregnant women experience anxiety in facing their new roles, especially primigravida mothers who have no experience [25].

The high level of mother's self-confidence has a positive correlation with the mother's ability to make decisions about her own health [26]. The mother is able to make decisions about her health condition by considering the safety aspects of both herself and the fetus in the womb. What actions will be taken, how to plan for her pregnancy and the solution to the problems she is experiencing will be decided.

#### 4. Conclusion

The dyad model is part of the intervention from social support or social support. The development of this model led to an intervention in the form of an action that involved two people. Two people can be a mother with a fetus or a mother and a father when the activity is applied to a pregnancy.

Providing social support or a good Dyad model will be able to reduce the level of anxiety when the mother is facing pregnancy, childbirth and the period of breastfeeding. This ability can reduce stressors which have positive implications for the mother's ability to adapt to her new role or maternal role.

Social support in the form of a Dyad care model is also able to increase understanding of pregnant women so that mothers become more confident in the pregnancy period, face childbirth and achieve new roles. The condition in which the mother is more confident will increase the mother's ability to make decisions about her health status.

#### 5. Suggestion

The need for efforts to increase the understanding of the spouse or family of the importance of social support in providing services, especially for pregnant women. It is necessary to develop the provision of interventions by involving the support of partners or families in providing nursing care to pregnant women both at the clinical and community levels. It is necessary to establish services for pregnant women in the form of prenatal classes with the development of a Dyad Care program that optimizes support from husbands or partners in a structured manner.

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# Ramatasya Meditation To Reduce Psychological Distress Of Chronic Kidney Failure (CKF) Patients In The Hemodialysis Room

Moch. Maftuchul Huda<sup>a1)</sup> Melani Kartika Sari<sup>b2)</sup> Novita Rahayuningtyas<sup>c3)</sup>

<sup>a,b,c</sup> STIKES Karya Husada Kediri East Java Indonesia

\*Corresponding Author E-mail: [mochmhuda@gmail.com](mailto:mochmhuda@gmail.com)<sup>1)</sup>

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## ABSTRACT

**Background:** Distress is formed from a negative stress response. Distress of CKF (Chronic Kidney Failure) patients undergoing hemodialysis is triggered by having to undergo hemodialysis for life. Ramatasya meditation (an unconditional acceptance meditation method) is proposed as an alternative solution to psychological distress. This study aims to prove the effect of Ramatasya meditation on psychological distress in CKF patients in the hemodialysis room of Dr. Iskak Tulungagung Hospital.

**Methods:** Research design of this study was Quasi experimental research design, with a sample of 30 patients (15 treatment groups and 15 control groups according to the inclusion criteria), used the Kesler Psychological Distress Scale as a measuring instrument.

**Results:** Most of the psychological distress data before intervention in the treatment and control groups (86.7%) were in the moderate category. After the intervention, most of respondent of treatment group (86.7%) experienced mild psychological distress and in the control group most (60%) experienced moderate psychological distress. Statistical results with the Wilcoxon Signed Rank Test ( $\alpha = 0.05$ ), ( $p$ -value = 0.000), meaning that there is an effect of Ramatasya meditation on psychological distress in patients with chronic kidney failure.

**Conclusions:** The decrease in psychological distress occurs due to an increasing of endorphins and a decreasing of the cortisol hormone. CKF patients who experienced psychological distress could do Ramatasya meditation because it was easy to do his/herself, doesn't cost much money and safe to use in patients.

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## I. INTRODUCTION

CKD (Chronic Kidney Failure) is a global public health problem with an increasing prevalence and incidence of kidney failure, poor prognosis and high costs. CKD is a progressive decline in kidney function over months or years. The psychological impact on CKD patients undergoing hemodialysis is considered normal if it does not interfere with health, but if it interferes with health it is considered abnormal. Psychological impacts that interfere with health are identical to distress. Distress is formed from a negative stress response. When a person experiences distress, it results in poorer performance, health and disturbances in relationships with other people. Prolonged stress will cause a response called psychological distress. Psychological distress is formed from anxiety, sadness, irritability, self-awareness, emotional vulnerability related to morbidity, decreased quality and duration of life, and use of health services<sup>(1)</sup>. The alternative solution offered is in the form of a meditation technique to accept unconditionally, hereinafter referred to as "Ramatasya Meditation". Ramatasya meditation adopts Kabat Zinn's mindfulness meditation, which is to accept, understand, without giving an analytical assessment of it.

CKD is defined as kidney damage and/or a decrease in Glomerular Filtration Rate (GFR) of

less than 60ML/min/1.73m<sup>(2)</sup> for at least 3 months (Kidney Disease Improving Global Outcomes, KDGIO 2012 Clinical Practice Guideline for the Evaluation and Management)<sup>2</sup>. Basic Health Research Data (RISKESDAS) in 2013, shows that; the prevalence of the Indonesian population suffering from kidney failure is 0.2% or 2 per 1000 population. The highest prevalence of kidney failure in Central Sulawesi is 0.5%. The prevalence of CKD by gender, in men is 0.3% higher than 0.2% for women, Ministry of RI Data Center 2017. Haemodialysis (HD) is the best solution for CKD sufferers, but has an impact on the emergence of psychological distress problems. The psychological distress felt by the patient was caused because every 2x a week they had to undergo hemodialysis and felt bored from waiting in line until the procedure was finished, patients also thought that their life only depended on machines because the disease could not be cured.

The results of research conducted on 24 elderly, 22 elderly in PSTW Budi Luhur Yogyakarta treatment group and 22 control groups at PSTW Abiyoso Yogyakarta, all of them were declared to suffer from primary hypertension. The results of the study after four weeks of meditation, both physical stress and psychosocial stress experienced a decrease in the average aspect of stress. Although the control group also experienced a decrease in one aspect, namely pulse frequency and psychosocial stress. The results of the T test analysis proved that there was a significant difference, both physical stress and psychosocial stress before and after meditation between the group who did meditation and the group that did not ( $p = 0.00$ , alpha = 0.05)<sup>(3)</sup>. A preliminary study in the Hemodialysis Room of Dr. Iskak Tulungagung Hospital on October 24, 2019 showed that patients undergoing hemodialysis therapy from January to September 2019 totaled 5346 visits and an average of 162 patients per week. Of the 162 patients undergoing hemodialysis, 3% experienced psychological distress. After being measured from 4 patients experiencing psychological distress, 3 (75%) experienced moderate psychological distress and 1 (25%) tended to be good.

Solutions that have been made to the problem of distress such as non-pharmacological therapy techniques, namely; physical relaxation and mental relaxation (meditation and mental imagination), but there are no specific studies on psychological distress in hemodialysis patients. The innovation to overcome this distress is Ramatasya meditation. Ramatasya meditation is an unconditional acceptance meditation. Ramatasya meditation adopts Kabat Zinn's mindfulness meditation, which is to accept, understand, without giving an analytical assessment of it. Stanley et al (2006) describes mindfulness as a combination of attention to awareness about current events, both internal and external events. The most important aspect of the concept of Ramatasya meditation is the awareness of events occurring without any consideration and expectation of the outcome or goal<sup>(4)</sup>.

The practice of ramatasya meditation is done in a comfortable, calm way, and focuses attention on the mental awareness object or process (either the process of breathing, sound, mantra, or statements, visualization or appreciation) and then consciously examining the mind openly, changing freely, from one perception to another. No thoughts, images or sensations are expected to disturb<sup>(5)</sup>. This will lead him to fantasies or very deep images, train the mind in a calm state, and rest so that it can open awareness and meaning that is wide and deep. The background above is the reason for researchers to prove in a study entitled, "The Effect of Ramatasya Meditation (Mindfulness) Unconditional Accepting Therapy on Psychological Distress in Patients with Chronic Kidney Failure in the Hemodialysis Room of Dr. ISKAK Tulungagung Hospital Indonesia".

## II. METHOD

The research method uses a Quasi Experimental design with the type of "The Randomized Pre-Test Post Test Control Group Design". The population consisted of 162 hemodialysis patients. Simple random sampling technique to 162 CKD patients with criteria; 1) who are undergoing hemodialysis for less than 2 years with the aim that they are still in the process of adapting to hemodialysis, 2) who are experiencing psychological distress and are willing to become respondents, 3) fully conscious. There were 30 respondents, divided into 15 respondents in the treatment group and 15 respondents in the control group. The instrument used in this study is the Kessler Psychological Distress Scale (KPDS). Measurements were made in the hemodialysis room in patients who will

undergo hemodialysis therapy approximately 60 minutes before therapy. The measurement of psychological distress is carried out first before the Ramatasya meditation for 15 minutes, then doing Ramatasya meditation therapy for 30 minutes, followed by the measurement of psychological distress after Ramatasya meditation for 15 minutes. The process of collecting research data begins after being declared ethically worthy, followed by applying for a permit to the STIKES Karya Husada Kediri institution, applying for permission to the Head of the Hospital, dr. Iskak Tulungagung, visited the prospective respondent for a contract with the respondent 1 week before therapy and explained about Ramatasya meditation and the purpose of the study, if the respondent agreed, all respondents were collected for education and given a demonstration before the intervention. Ramatasya meditation therapy was carried out for 30 minutes with a frequency of 2x/week.

Statistics analysis, Data were tested to compare the mean of the two variables before and after interventions in two groups. Statistical analysis was done using computer with Man-Whitney and Wilcoxon Test.

Ethical consideration: Ethical clearance of the study was obtained from the Ethics Commission on STIKES KARYA HUSADA KEDIRI, Number 116/EC/LPPM/STIKES/KH/2019. All participant was signed the informed consent in Bahasa.

### III. RESULTS AND DISCUSSION

The results of the study on 30 respondents in the hemodialysis room at RSUD Dr. Iskak Tulungagung which had intervention for 3 weeks for the treatment group and the control group without treatment. All psychological distress data were measured twice, the first was done at the time of the research contract and the second was done after 3 weeks of treatment for the intervention group and also after 3 weeks in the control group. followed by data processing including editing, coding, scoring, tabulating and analysis as follows.

Table 1 Characteristics of respondents in the control and treatment groups

No	Characteristics	Treatment Group	frequency	Percentage (%)	Control Group	frequency	Percentage (%)
1	Gender	Male	7	46,7	Male	8	53,3
		Female	8	53,3	Female	7	46,7
3	Education	Primary School	4	26,7	Primary School	1	6,7
		Junior High School	0		Junior High School	3	40
		Senior High School	9	60	Senior High School	9	53,3
		College	2	13,3	College	2	13,3
4	Job	Farmer	3	20	Farmer	2	13,3
		Entrepreneur	6	40	Entrepreneur	5	33,3
		Goverment Employees	2	13,3	Goverment Employees	1	6,7
		Does'n Work	4	26,7	Does'n Work	6	40
		Private			Private	1	6,7
5	Income	Rp. 0-500.000	4	26,7	Rp. 0-500.000-	6	40
		Rp. 500.000-1.000.000	9	60	Rp.500.000-1.000.000-	7	46,7
		Rp.	2	13,3	Rp.	2	13,3

No	Characteristics	Treatment Group	frequency	Percentage (%)	Control Group	frequency	Percentage (%)
		1.000.000-			1.000.000-		
		3.000.000			3.000.000		
6	Length of time on hemodialysis	<1 year	1	6,7	<1 year	2	13,3
		≥1 year	9	60	≥1 year	9	60
		2 year	5	33,3	2 year	4	26,7
7	Family Support	Good	15	100	Good	15	100
		Bad			Bad		

Table 1 shows that the characteristics of respondents based on gender criteria in the treatment group were more than (53%) namely 8 respondents with female gender, in the control group more than (53%) namely male respondents. Characteristics of respondents based on educational criteria in the treatment group were more than (60%) namely 9 respondents with the last education of high school, while in the control group more than (60%) namely 9 respondents with the last education of high school. Characteristics of respondents based on job criteria in the treatment group, a small part (49%) are 6 respondents with self-employed jobs, while in a small portion (40%) 6 respondents with no work. Characteristics of respondents based on income criteria in the treatment group were more than (60%) namely 9 respondents with income of Rp. 500,000-1,000,000, while the income in the control group was a small portion (48%) namely 7 respondents with income of Rp. 500,000-1,000,000. Characteristics of respondents based on the length of hemodialysis in the treatment group more than (60%) that is 9 responses with duration undergoing hemodialysis 1 year, while the length of undergoing hemodialysis in the control group is more than (60%) namely 9 respondents with long undergoing hemodialysis 1 year. Characteristics of respondents with family support in the treatment group and the majority control group 100%, that is, 30 respondents have good family support.

Table 2 Identification of psychological distress in CKD patients in the Hemodialysis Room of RSUD Dr. Iskak Tulungagung before intervention in the control group and the treatment group.

Psychological Distress	Treatment Group		Control Group	
	Pre		Pre	
	frequency	Percentage (%)	frequency	Percentage (%)
Tend to be good				
Light			6	40
Currently	13	86,7	9	60
Heavy	2	13,3		
Total	15	100	15	100
mann whitneey test		p= 0.104		

Before the intervention of Ramatasya meditation in the treatment group most (86.7%) were 13 respondents in the moderate psychological distress category and a small part (13.3%) were respondents in the severe psychological distress category. In the control group, more than (60%) are 9 respondents in the category of moderate psychological distress and a small portion (40%) are 6 respondents in the category of mild psychological distress. The results of the Mann Whitney test obtained a sig p value of 0.104 so it can be concluded that if  $p >$  then it indicates that in the control group there is no difference in psychological distress before being given the Ramatasya meditation intervention.

Table 3 Identification of psychological distress in patients with chronic kidney failure in the hemodialysis room at RSUD Dr Iskak Tulungagung in the treatment group and the control group after the intervention

Psychological Distress	Treatment Group		Control Group	
	Pre		Pre	
	frequency	Percentage (%)	Frekuensi	frequency
Tend to be good				
Light	13	86,7	6	40
Currently	2	13,3	9	60
Heavy				
Total	15	100	15	100
mann whitneey test		p = 0,000		

After the intervention of Ramatasya meditation in the treatment group, most (86.7%) were 13 respondents in the category of mild psychological distress and a small part (13.3%) were respondents in the category of moderate psychological distress, while after without Ramatasya meditation therapy, the control group more than (60%) namely 9 respondents in the category of moderate psychological distress and a small portion (40%) namely 6 respondents in the category of mild psychological distress. The results of the Mann Whitney test obtained sig p 0.000 so it can be concluded that if p < then it indicates that in the treatment group there is a difference in psychological distress between before and after without being given Ramatsya meditation intervention.

Table 4 Analysis of the Effect of Ramatasya Meditation on Psychological Distress of Chronic Kidney Failure Patients in the Hemodialysis Room of Dr. Iskak Tulungagung Hospital.

Psychological Distress	Treatment Group				Control Group			
	Pre test		Post test		Pre test		Post test	
	F	%	f	%	f	%	f	%
Tend to be good								
Light			13	86,7	6	40	6	40
Currently	13	86,7	2	13,3	9	60	9	60
Heavy	2	13,3						
Total	15	100	15	100	15	100	15	100
wilcoxon test		p=0,000					p= 1	

Table 4 shows the calculation of the Wilcoxon test data in the treatment group after the intervention of Ramatasya meditation obtained from the results of sig p value 0.000 with a sig level of 0.05 so that p value < indicates that H1 is accepted, then there is an effect of Ramatasya meditation on psychological distress in patients with kidney failure. in the Hemodialysis Room of Dr. Iskak Tulungagung Hospital.

Whereas before and after without being given Ramatasya meditation therapy in the control group, based on the calculation of the Wilcoxon test results in the control group after the Ramatasya meditation intervention, it was obtained from the results of sig p value 1 with a sig level 0.05 so that p value > indicates that in the control group there is no difference in psychological distress before and after being given the Ramatasya meditation intervention.

#### 1. Psychological Distress of Chronic Kidney Failure Patients in the Hemodialysis Room at RSUD dr. Iskak Tulungagung Before Intervention in the Treatment Group and Control Group.

Psychological distress is a negative mental health condition that affects individuals both directly and indirectly and is related to other physical and mental health conditions<sup>(10)</sup>. Psychological problems can be found in patients undergoing hemodialysis because patients have to undergo hemodialysis for a long period of time<sup>(11)</sup>. According to the results of research conducted by researchers, it is known that many experience psychological distress. This condition is caused by a disease process that hemodialysis patients consider a threatening experience. The hemodialysis

process which is carried out for a long time and other threats can cause the treatment group and control group to experience psychological changes in the patient and give excessive pressure so that it affects psychological distress.

2. Psychological Distress of Chronic Kidney Failure Patients in the Hemodialysis Room at RSUD dr. Iskak Tulungagung after the intervention in the treatment group and control group. Increase the ability to engage in current events without judging them. The practice of Ramatasya meditation is not to show or explain something that is wrong but helps in finding something that is right<sup>(8,12)</sup>. When meditating Ramatasya you will feel the sensation of relaxation, decrease muscle tissue tension, optimal organ work intensity, during relaxation can harmonize the work of the organs in the body. The systems in the body work in harmony and balance. Most of the physiological changes occur due to the activity of the neuroendocrine system which is controlled by the hypothalamus to produce ACTH, thereby stimulating the adrenal medulla to release the hormone epinephrine<sup>(14)</sup>. The researcher argues that Ramatasya meditation therapy can reduce psychological distress by influencing the hormone system to secrete endorphins. This hormone is useful for calming hormones. Endorphin hormones will have a relaxing effect on the treatment group so that it will experience a decrease in the category of psychological distress, while in the control group there is no difference because no intervention is given. Men and women are required to be able to cope with the stress they experience, everyone has a different tolerance for various stressful situations. Many people are easily sad because of minor events. On the other hand, many other people are cold and calm mainly because they have confidence in their ability to deal with stress<sup>15</sup>. In the treatment group, women more often use feelings in dealing with something that happens so that women are more sensitive to their emotions which in the end women are also sensitive to the psychological distress they experience. In the control group, men who experience pain for a long time will lose confidence because it will change their role in daily life so they are vulnerable to psychological distress. Education affects a person's health attitudes and behavior, the higher a person's education level, the higher his awareness of behaving and behaving appropriately  
7.

Most of the treatment and control groups have high school education, so that respondents have less knowledge about mental health, especially adaptive coping, so that it will affect psychological distress in the treatment and control groups. The factors that have the most potential to cause distress are social barriers owned by individuals such as income and unemployment<sup>25</sup>. This can be because patients undergoing hemodialysis require costs beyond the costs guaranteed by BPJS, such as transportation and food. Patients undergoing hemodialysis cannot return to previous activities such as work, so it will affect psychological distress in the treatment and control groups. Lahey (in Winefield, Gill, Taylor, & Pilkington, 2012) explains that psychological distress is formed from anxiety, sadness, irritability, self-awareness, emotional vulnerability related to morbidity, decreased quality and duration of life, and increased use of health services. Feelings of excessive dependence on dialysis machines, and medical therapy are one of the elements that are unwanted by hemodialysis patients that can cause psychological distress and changes in patient self-esteem. The frequency of hemodialysis related to the disease process has a significant effect on the control group and the treatment of psychological distress<sup>(8)</sup>. The researcher argues that Ramatasya meditation therapy can reduce psychological distress by influencing the hormone system to secrete endorphins. This hormone is useful for calming hormones. Endorphin hormones will have a relaxing effect on the treatment group so that it will experience a decrease in the category of psychological distress, while in the control group there is no difference because no intervention is given. Men tend to use problem focused coping because men usually use ratios or logic besides that men are sometimes less emotional so they prefer to directly solve the problems they face or directly face the source of stress. While women are more likely to use emotional focused coping so that they rarely use logic or ratios that make women tend to regulate emotions in dealing with sources of stress or do religious coping where women feel closer to God compared to men<sup>(15)</sup>. According to researchers, female respondents who undergo Ramatasya meditation are more sensitive to each other so that they can explore each meditation process. Education affects a person's health attitudes and behavior, the higher a person's education level, the higher his awareness of behaving and behaving appropriately. Most of the treatment groups were high school, so the treatment group had

a high level of awareness of the changes in life experienced and had a cooperative attitude in receiving information and meditation instructions given so that the treatment group experienced a decrease in psychological distress<sup>(2,9)</sup>. That one source of coping, namely economic assets, can help improve individual coping in dealing with stressful situations<sup>(16)</sup>. Treatment groups with different occupations and incomes tend to use adaptive coping. This could be because patients undergoing hemodialysis in the Hemodialysis Room at RSUD Dr. Iskak use BPJS and Askes to pay for their dialysis. This is one source of patient coping in an adaptive direction because it can overcome stressors in terms of cost. Another factor that can affect the decrease in psychological distress in the treatment group is that the average respondent is familiar with the meditation technique of Ramatasya. The psychological adaptive response of the stressor is referred to as a coping mechanism<sup>(17)</sup>. Coping mechanisms based on the classification according to divided into two, namely adaptive coping mechanisms and maladaptive coping mechanisms. Adaptive coping mechanisms are coping mechanisms that support the functions of integration, growth, learning, and achieving goals<sup>(18)</sup>. Respondents with good family support tend to use adaptive coping. The support obtained will be able to increase self-confidence, motivate sufferers to be better, and view life more optimistically. With adaptive coping, respondents are faster to achieve their goals by meditating on Ramatasya so that the treatment group will experience a decrease in psychological distress. This condition will have an impact on his psychological condition. In conditions like this, an individual must use medicine as a means of healing his physical condition, while the individual's psychological condition will have his own way<sup>(20)</sup>. Respondents in the treatment group are more interested and happy to undergo Ramatasya meditation, because it requires a coping strategy to treat their psyche which will affect psychological distress.

### 3. The Effect of Ramatasya Meditation on Psychological Distress of Hemodialysis Patients in the Hemodialysis Room of Dr. Iskak Tulungagung Hospital.

Kabat-Zinn states that the practice of mindfulness meditation is not about "being anywhere to fix something" but rather an experience of an event over time. The practice of ramatasya meditation takes place in a condition that is free from distractions of thoughts and emotions<sup>(10)</sup>. Ramatasya meditation helps visualize goals, control inner conversations and build spiritual connections. The Ramatsya meditation position is useful so that energy flows freely and can last for meditation for a long period of time. Breathing in Ramatasya meditation uses diaphragmatic breathing to increase calmness and concentration can make the body more relaxed. Breathing with a regular rhythm will calm brain waves and relax all muscles and body tissues. Identifying the body of psychological distress with Ramatsasya meditation makes it easier for the body to realize body sensations such as being sensitive to external and internal stimulation so that suggestions for Ramastasya meditation are more easily accepted. Hemodialysis patients tend to experience a lot of physical and psychological disorders, this cannot be denied and must be accepted without giving any assessment of the event.

The dynamics of psychological distress through Ramatasya meditation can affect the physical health of those who are susceptible to disease to minimize the symptoms of the disease. This is characterized by the part of the human brain that is associated with emotional processes, especially in the hypothalamus, in a state of meditation, Ramatasya will cause stimulation of hypothalamic activity so that it inhibits the release of the hormone CRF, which causes the anterior pituitary gland to be inhibited from releasing ACTH thereby inhibiting the adrenal glands to secrete the hormone cortisol, adrenaline and noradrenaline. This causes the thyroxine secreted by the thyroid gland in the body is also inhibited. The difference shown in the results of the study above is due to Ramatasya meditation being able to calm the soul and mind through a decrease in brain waves in the treatment group, resulting in a decrease in psychological distress by accepting the current situation more without giving any assessment of the situation. The weakness of this study is indicated by the results of the study, most of the respondents had mild psychological distress, this was influenced by the lack of concentration and the respondents tended to only meditate during the hemodialysis schedule. The solution from the researchers is that respondents are expected to concentrate more during the process of Ramatasya meditation therapy and do meditation at home so that it is easy to think positively that Ramatasya meditation therapy can provide peace of mind

and mind that can reduce psychological distress by being more accepting of the current situation without giving any assessment of the situation.

#### IV. CONCLUSION

1. The treatment and control groups before Ramatasya meditation were mostly in the category of moderate psychological distress.
2. After the Ramatasya meditation intervention, the treatment group was mostly in the category of mild psychological distress, while the control group was in the category of moderate psychological distress.
3. Ramatasya meditation can reduce psychological distress in patients with chronic kidney failure in the hemodialysis room at RSU DR Iskak Tulungagung

#### V. ACKNOWLEDGMENT

1. The results of this study can be used as a hospital policy in alternative therapy for patients who experience psychological distress, especially hemodialysis patients, and provide flexibility for nurses or health workers to practice innovative treatment methods.
2. Educational institutions can conduct learning or training programs on complementary therapies (modalities), especially Ramatasya meditation to maintain and improve psychological and physical health.
3. Respondents undergoing hemodialysis can apply Ramatasya meditation therapy at home to prevent psychological distress because Ramatasya can condition feelings of calm and relaxation

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# Breastfeeding Techniques In Babies Aged 0-6 Months In The New Normal Era

Dwi Ertiana<sup>a,1,\*</sup>, Dewi Taurisiawati Rahayu<sup>b,2</sup>, Novia Beauty Puspitasari<sup>c,3</sup>

<sup>a,b,c</sup> Bachelor of Midwifery Study Program, School of Health Sciences Karya Husada Kediri, Soekarno Hatta Street no 7

Pare Kediri 64225, East Java, Indonesia

\* Corresponding author: ertiana.dwi@gmail.com

## ABSTRACT

*Keywords:* Breast milk,\_1  
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New normal era\_3

**Background:** In the new normal era, many mothers who breastfeed their babies are anxious and afraid when breastfeeding their babies because they are afraid to transmit the virus to babies through breast milk. Currently the government has taken action to prevent the spread of covid 19, namely the implementation of New Normal. New normal is a change in human behavior during the pandemic, covid-19 where humans limit touch with other individuals. The purpose of this study is to identify of breastfeeding techniques in infants aged 0-6 months in the new normal era.

**Methods:** The design of the research in this study is descriptive. The variable in this study was the breastfeeding technique. The population in this study was all mothers who breastfed babies aged 0-6 months in Midwife independent practice Binti Mahmudah as many as 20 respondents. Samples are taken using accidental sampling techniques. The instrument used in this study was a questionare sheet. The study time was conducted on July 5 to 10, 2021, where the study was conducted in Sukorejo Village Ngasem District Kediri Regency. Data retrieval is done by observation by researchers, then inserted a distribution frequency table analyzed in the form of a percentage.

**Results:** The results showed that mothers who breastfed their babies with the correct breastfeeding technique according to questionare as many as 12 respondents (60%), mothers who breastfed with enough techniques as many as 8 respondents (40%). While the breastfeeding technique is less than 0 respondents (0%)

**Conclusions:** Breastfeeding techniques in the new normal era are very influential on breastfeeding. Because with the correct breastfeeding technique in the new normal era the mother feels safe and comfortable in providing breast milk, as well as preventing the transmission of covid.

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## I. INTRODUCTION

The first thousand days of a child's life is a critical period that determines his future, and during that period Indonesian children face serious growth disorders. The problem is, after 1000 days, the bad effects of malnutrition are very difficult to treat. One of the efforts to improve community nutrition at the beginning of life is by giving exclusive breastfeeding for the first six<sup>[1]</sup> (6) months of life, continued until the child is two (2) years old<sup>[1]</sup>.<sup>[2]</sup> Breastfeeding is very important for optimal growth and development both physically and mentally and baby's intelligence. The proper and correct way of feeding babies is to exclusively breastfeed babies from birth to 6 months of age and continue breastfeeding their children until 24 months of age. Starting at the age of 6 months, babies get nutritious complementary foods according to their growth and development<sup>[3]</sup>.

Breast milk (ASI) has all the nutrients a baby needs. Breast milk also has the advantage of protecting infants against diseases such as diarrhea and other common infections. By sucking breast milk, the baby becomes closer to the mother, helping her feel safe and protected. Breastfeeding is a natural process, almost all mothers can breastfeed their babies without help from others, but in fact not all mothers can breastfeed with the right technique [4][5].

In Indonesia, the percentage of exclusive breastfeeding is according to the age of the child and the characteristics of the respondents, a higher percentage of exclusive breastfeeding is given to infants only up to 0-1 months (45%), ages 2-3 months (38.3%), and ages 4- 5 months (31%), while in East Java province in 2014 it was 183,573 (74.0%), in 2015 it was 375,737 (74.1%), in 2016 it was 31.3%, in 2017 it was 76.01% , 2018 was 76.98%, data obtained from the Health Office of the city of Kediri, babies who received exclusive breastfeeding in 2017 were 333 babies (51.3%) then in 2018 there were 340 babies (46.6%) [6]

Based on data from the Basic Health Research (Riskesdas) in 2010 it was explained that 67.5% of mothers who failed to provide exclusive breastfeeding to their babies were due to a lack of understanding of mothers about proper breastfeeding techniques, resulting in sore and cracked nipples [7]

Breastfeeding technique is one of the factors that affect milk production where if the breastfeeding technique is not correct, it can cause causesore nipples and make the mother does not want to breastfeed and the baby rarely suckles. If the baby rarely breastfeeds because the baby does not want to suckle, it will have a bad effect, because the baby's sucking is very influential on the stimulation of milk production [8]

To reduce the risk of inappropriate breastfeeding techniques, counseling or health education can be carried out on the benefits of breastfeeding and its management. Support from husbands, families, communities and health workers will determine the success of the implementation. The support of health workers has a significant relationship with the behavior of mothers in breastfeeding [9]

New normal is a change in behavior to continue to carry out normal activities but with the addition of implementing health protocols to prevent the transmission of COVID-19. New normal is a step to accelerate the handling of COVID-19 in the health, social and economic fields [10]

During the New Normal Era, 10 breastfeeding mothers at Midwife independent practice Binti Mahmudah were anxious and afraid to breastfeed their babies. Healthy mothers, who do not have symptoms such as fever, cough, can still breastfeed their babies but must go through health protocols such as wearing a mask when breastfeeding, washing hands before touching the baby, applying coughing and sneezing etiquette, and practicing proper feeding techniques.

In connection with this problem, the researcher is interested in conducting a study entitled "Overview of Breastfeeding Techniques for Infants aged 0-6 Months in the New Normal Era at Midwife independent practice Binti Mahmudah, Sukorejo Village, Ngasem District, Kediri Regency" by teaching mothers proper breastfeeding techniques and implementing health protocols.

## II. METHOD

The research design in this study is descriptive. The variable in this study is breastfeeding technique. The population in this study were all mothers who gave breast milk to infants aged 0-6 months at Midwife independent practice Binti Mahmudah as many as 20 respondents. Samples were taken using accidental sampling technique. The instrument used in this research is a questionnaire sheet. The time of the research was carried out on July 5 to 10, 2021, where the research was carried out in Sukorejo Village, Ngasem District, Kediri Regency. The data was collected by observation by the researcher, then the frequency distribution table was entered which was analyzed in the form of a percentage.

### III. RESULTS AND DISCUSSION

In this study, the results of research on the Overview of Breastfeeding Techniques at the age of 0-6 in the new normal era at Midwife independent practice Binti Mahmudah, Sukorejo Village, Ngasem District, Kediri Regency were carried out on 5-10 July 2021. The results of this study include general data, special data and supporting data. General data in the study were age, education level, occupation, parity, information about breastfeeding techniques, sources of information, while specific data contained breastfeeding techniques. Supporting data for baby's weight and height. Data is presented in tabular form.

Following results research in the form of general data are age, education level, occupation, parity, information on breastfeeding techniques, sources of information.

Table 1 Distribution of breastfeeding mothers based on age in Midwife independent practice Binti Mahmudah, Sukorejo Village, Ngasem District, Kediri Regency on 5-10 2021.

No	Age (years)	Amount	Percentage (%)
1	< 20	7	35
2	20-35	9	45
3	> 35 Years	4	20
Total		20	100

Based on table 1 above, it shows that of the 20 respondents, almost half of the respondents aged 20-35 years were 9 respondents (45%) from the distribution of respondents' characteristics by age, namely aged 20-35 years.

Table 2 Distribution of breastfeeding mothers based on education at Midwife independent practice Binti Mahmudah, Sukorejo Village, Ngasem District, Kediri Regency, July 5-10, 2021

No	Education	Amount	Percentage (%)
1	No school	0	0
2	Primary school	2	10
3	junior high school	6	30
4	senior High School	10	50
5	College	2	10
Total		20	100

Based on table 2 above, it shows that of the 20 respondents half of the respondents had high school education as many as 10 respondents (50%) from the distribution of respondents' characteristics based on education, namely senior High School

Table 3 Distribution of breastfeeding mothers based on occupation at Midwife independent practice Binti Mahmudah, Sukorejo Village, Ngasem District, Kediri Regency, July 5-10, 2021

No	Work	Amount	Percentage (%)
1	Housewife	8	40
2	Farmer	1	5
3	Factory worker	5	25
4	entrepreneur	5	25
5	Teacher / civil servant	1	5
Total		20	100

Based on table 3 above, it shows that of the 20 respondents, almost half of the respondents work as housewives as many as 8 respondents (40%) from the distribution of the characteristics of respondents based on occupation, namely housewives.

Table 4 Distribution of breastfeeding mothers based on parity at Midwife independent practice Binti Mahmudah, Sukorejo Village, Ngasem District, Kediri Regency, July 5-10, 2021

No	Parity	Amount	Percentage (%)
1	Primigravida	11	55
2	Multigravida	4	20
3	Grande-multigravida	5	25
Total		20	100

Based on table 4 shows that of the 20 respondents, most of the respondents were primigravida mothers as many as 11 respondents (55%) from the distribution of respondents' character based on parity, namely primigravida.

Table 5 Distribution of breastfeeding mothers based on information about breastfeeding techniques at Midwife independent practice Binti Mahmudah, Sukorejo Village, Ngasem District, Kediri Regency, July 5-10, 2021.

No	Information	Amount	Percentage (%)
1	Once	20	100
2	Never	0	0
Total		20	100

Based on table 5 shows that of the 20 respondents, all of the respondents had received information about breastfeeding techniques as many as 20 respondents (100%) of the distribution of the characteristics of respondents based on the information, namely they had

Table 6 Distribution of breastfeeding mothers based on sources of information at Midwife independent practice Binti Mahmudah, Sukorejo Village, Ngasem District, Kediri Regency, July 5-10, 2021

No	Resources	Amount	Percentage (%)
1	Print media	5	25
2	Electronic media	1	5
3	Health workers	11	55
4	Neighbors/ relatives/ friends	3	15
Total		20	100

Based on table 6 shows that of the 20 respondents, most of the respondents received

information from health workers as many as 11 respondents (55%) from the distribution of respondents' characteristics based on information sources, namely health workers.

The following are the results of the research in the form of: specific data, namely breastfeeding techniques.

Table 7 Distribution of breastfeeding techniques at Midwife independent practice Binti Mahmudah, Sukorejo Village, Ngasem District, Kediri Regency, July 5-10, 2021

No	Behavior	Frequency	Percentage (%)
1	Well	8	40
2	Enough	12	60
3	Not enough	-	-
	Total	20	100

Based on table 7, it can be seen that of the 20 respondents, most of the respondents using breastfeeding techniques, 12 respondents (60%) were sufficient.

The following are the results of the research in the form of: supporting data, namely the baby's weight and baby's height.

Table 8 Distribution of Body Weight, Height of Babies at Midwife independent practice Binti Mahmudah, Sukorejo Village, Ngasem District, Kediri Regency, July 5-10, 2021

No	Baby Weight (Kg)	baby length (cm)
1	5	52
2	6.5	58
3	6	60
4	5.1	55
5	4.8	48
6	5.4	53
7	3.8	46
8	5.8	56
9	4.9	52
10	5.5	54
11	4	51
12	4.3	50
13	4.6	52
14	5.1	56
15	4.7	54
16	5	61
17	5.5	59
18	5.8	60
19	5.2	58
20	6	56
Total	20	20

Based on Table 8 can be seen that of the 20 respondents, most of the respondents had babies with normal nutritional status.

The results showed that mothers who breastfeed their babies with the correct breastfeeding technique according to the questionnaire sheet are 40% good, 60% enough, 0% less. Based on research on breastfeeding technique respondents at Midwife independent practice Binti Mahmudah most of them have sufficient breastfeeding techniques, and also some respondents have good breastfeeding techniques, in each indicator in breastfeeding techniques there are different categories, namely in the first indicator, namely wearing a

mask when breastfeeding as many babies as possible. 9 respondents have less category. The second indicator is washing hands before breastfeeding their babies, 14 respondents have sufficient indicators, the third indicator is that the mother chooses the most comfortable position for breastfeeding. 19 respondents have a good category,

This fact shows that half of the number of mothers who can carry out breastfeeding techniques properly. The inability of a mother to breastfeed properly affects the coverage of exclusive breastfeeding. There are many factors that affect the coverage of exclusive breastfeeding, including the age of the breastfeeding mother, education, occupation, parity, knowledge of proper breastfeeding techniques.

Correct breastfeeding technique is needed so that both the baby and mother feel comfortable and the baby gets the greatest benefit from breastfeeding. Breastfeeding technique is one of the factors that affect milk production where if the breastfeeding technique is not correct, it can cause sore nipples and make the mother not want to breastfeed and the baby rarely breastfeeds. If the baby rarely breastfeeds because the baby does not want to suckle, it will have a bad effect, because the baby's sucking is very influential on the stimulation of milk production [11][12].

To reduce the risk of inappropriate breastfeeding techniques, counseling or health education can be carried out on the benefits of breastfeeding and its management. Support from husbands, families, communities and health workers will determine the success of the implementation. The support of health workers has a significant relationship with the behavior of mothers in breastfeeding [13].

The results of this study are in line with research conducted by Anggun Rusyantia (2017) on "the relationship between breastfeeding techniques and breastfeeding success in infants aged 0-6 months who visit the Kedaton Public Health Center" saying that the breastfeeding technique consists of breastfeeding positions and attachment of the baby to the right breast so that it will be one of the success factors in the production of breast milk. If the breastfeeding technique is not good, it can cause sore nipples so that the mother is reluctant to breastfeed and the baby will rarely breastfeed [14].

Mothers who practice breastfeeding techniques have steps that are carried out, some are steps that are not carried out. The steps that are not taken by the mother are doing breast massage and releasing a little milk to wet the nipples, the way to burp the baby is to be carried upright with the head resting on the mother's shoulder then gently pat the back, the mother wears a mask while breastfeeding the baby, does not wear a mask. In the technique of breastfeeding with steps that the mother did not do, it is possible that the mother had become accustomed to not not doing it because of the inappropriate timing of breastfeeding, and the baby often cried.

General data shows that from 20 respondents, almost half of the respondents aged 20-30 years were 9 respondents (45%). This study is in line with Yuliati (2018), which states that age can affect a person's knowledge. Where with increasing age a person can affect the increase in knowledge gained. At a certain age or near old age, the ability to remember or accept knowledge will decrease. The influence of age in receiving information is that the more mature a person's age will affect the way of thinking. The more mature a person's age, the wiser in thinking and the more experience one finds to gain knowledge. With increasing knowledge, it will affect a person's behavior for the better [15].

Age affects the perception of a person's mindset in receiving information. Respondents with age <20 years old are immature so that in receiving information and making decisions they cannot think scientifically. Respondents with the age of 25-30 reproductive age and mature health can be assumed respondents are able to think logically in making decisions and more easily receive information. Respondents with an older age > 35 years of grasping power to receive information tend to be more difficult to receive information well, and the mindset to respond to new information tends to be less easy and more trusting of previous experiences.

General data shows that out of 20 respondents, half of the respondents have high school education as many as 10 people (50%). This is in line with Rahmawati's research

(2017) which states that the higher a person's level of education, the more knowledge he has. Meanwhile, behavior based on knowledge, awareness and a positive attitude will be more lasting than behavior that is not based on knowledge [16].

The higher the level of education a person has, the more knowledge he has. Mothers who are highly educated have good breastfeeding behavior with correct breastfeeding techniques. Breastfeeding mothers have a need to maintain the health of themselves and their babies, who are prepared to be able to provide breast milk perfectly to their babies. A person's education affects his knowledge and mother's mindset so that the mother has a fairly high absorption of information, on the contrary, low or less education can hinder the development of a person's attitude towards the new values introduced so that knowledge is also lacking.

General data shows that from 20 respondents, almost half of the respondents work as housewives as many as 8 respondents (40%). This research is in line with Hepilita (2016) which states that the work of mothers as housewives will have more free time than working mothers, so that mothers can always be active in the presence of counseling events on good and correct breastfeeding techniques held by local health personnel [16].

Mothers who do not work have more free time to breastfeed their babies so that mothers will know more about how to breastfeed properly. It is different with working mothers who do not have free time to breastfeed because they are busy so they do not have enough time to breastfeed and learn how to breastfeed properly and correctly.

General data shows that of the 20 respondents, it was found that most of the respondents were primigravida mothers as many as 11 respondents (55%). Parity status refers to the number of children born to the mother. Research conducted by Sinta et al. shows that pregnant women who have given birth for the first time will have problems in caring for their babies and in exclusive breastfeeding. Mothers who have given birth only once have a less favorable experience than mothers who have given birth more than once. This unfavorable experience affects the implementation of exclusive breastfeeding because primiparous mothers still have doubts about giving exclusive breastfeeding to their babies. Primiparous mothers who have poor behavior and techniques in breastfeeding are due to their lack of previous breastfeeding experience. Research conducted by Rinata & Andayani (2018) states that the success of breastfeeding can be influenced by the experience of mothers who have had previous breastfeeding experience. Previous breastfeeding experience can provide an overview for breastfeeding mothers to increase breastfeeding success. Mothers with primiparas still do not have experience in giving breast milk to their babies, psychologically primiparous mothers are also not ready and do not know the correct breastfeeding technique. This factor is one of the inhibiting factors in exclusive breastfeeding. Multiparous mothers will find it easier to breastfeed because they have had previous breastfeeding experience [17][18][19].

Mothers who have previously breastfed have had experience in breastfeeding and caring for their babies so that mothers will feel more confident in giving breast milk to their babies. The success of mothers in breastfeeding their first child will provide greater motivation to breastfeed their next baby.

General data of respondents showed that of the 20 respondents, all of the respondents had received information on breastfeeding techniques and most of the respondents received information from health workers as many as 11 respondents. Source of information is the origin of explanations or information in the form of data or information that is useful to assist in making decisions. The information obtained can increase knowledge so that it is wider. The primary source (direct) of knowledge about health is health workers so that accurate and correct sources of information are obtained [20].

One of the factors that influence knowledge is information, if information is obtained or sought correctly, it will obtain good knowledge and increase respondents' insight, especially about breastfeeding techniques so that it can be done according to a reliable source.

Supporting data shows that of the 20 respondents all of the respondents had normal nutritional status. Based on the research, it was found that babies who used exclusive

breastfeeding had an effect on growth, namely the baby's weight. At the age of 0 to 6 months, exclusive breastfeeding is needed, because the digestive system is not perfect and the content of Exclusive Breastfeeding is one of which contains immunology that can inhibit harmful bacteria, viruses and parasites so that it can prevent infections in the gastrointestinal tract such as diarrhea, this is what makes the baby's growth better [21][22]

This is in line with research by Diza fathamira hamzah which states that infants who are exclusively breastfed have normal nutritional status. The results of this study can state that the weight of infants who are exclusively breastfed is normal, i.e. no one is obese or malnourished [23].

#### IV. CONCLUSION

The conclusions in this study are Breastfeeding techniques in the new normal era greatly affect breastfeeding. Because by applying breastfeeding techniques in the new normal era, such as using a mask when breastfeeding her baby, washing her hands before and after breastfeeding her baby and taking proper breastfeeding steps, the mother will feel safe and comfortable and prevent the spread of covid. Half of the respondents have sufficient breastfeeding technique 12 (60%). Suggestions for educational institutions are expected that the research results are expected to become scientific development literature. For further researchers, it is expected to conduct further research by developing further research variables by developing research variables and a larger number of populations so that better results can be obtained. For respondents, it is expected that mothers who breastfeed should be more active in seeking information about correct breastfeeding techniques, so that they can increase their knowledge and skills so that they can be more skilled in breastfeeding. For health instruments, it is hoped that they can be input for developing theories about breastfeeding techniques

#### V. ACKNOWLEDGMENT

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# The Improvement of Compliance with Catheter Traction Treatment Through Leaflet Media Education as an Effort to Prevent Post-BPH Surgery Syndrome

Rubianing<sup>a</sup>, Khotimah<sup>b\*</sup>, Wiwiek Widiatne<sup>c</sup>, Achmad Zakaria<sup>d</sup>

<sup>a,b,c,d</sup>Bachelor of Nursing Study Program, Faculty of Health Sciences  
University of Pesantren Tinggi Darul Ulum Jombang

\*Corresponding Author: [khotimahhasan@yahoo.com](mailto:khotimahhasan@yahoo.com)

## ABSTRACT

**Keywords:**  
*health education  
catheter traction  
BPH*

Surgery that is often done to overcome the presence of an enlarged prostate is called Transurethral Resection Prostate (TUR P) surgery. Post-surgery bleeding often occurs within the first 24 hours, so it is necessary to perform catheter traction action. The traction action of the catheter causes pain and discomfort. Lack of understanding and discomfort conditions make some patients remove catheter traction by themselves. Health education has been done but less effectively. Furthermore, Health education is needed by using leaflet media to improve patients' understanding and compliance to post-surgery care of TUR P. This research aims to find out the influence of educational media leaflets on compliance with catheter traction treatment of patients post-BPH surgery. The research method uses a quasi-experiment with a post-test-only control group design approach. The population of the study is all patients post-BPH surgery at RSUD Jombang as many as 30 respondents. The sample met the inclusion criteria of 24 respondents with a simple random sampling technique. Data analysis used was Mann Whitney U Test sig  $\alpha < 0.005$ . The results of the study were obtained by p Value Sig.  $0,004 < 0,005$  means that there is an influence of educational media leaflets on compliance with catheter traction care of patients post-BPH surgery. Inappropriate media on the condition of respondents led to a lack of understanding of respondents resulting in non-compliance with catheter traction treatment post-TUR P surgery. Non-compliance with catheter traction treatment causes bleeding. Health education with the right media is effective to reduce the occurrence of TUR Psynodyne 24 hours after the surgery

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## I. INTRODUCTION

BPH (Benign Prostata Hyperplasia) is an enlarged prostate gland that often occurs at age 50 to elderly people<sup>[1]</sup>. BPH treatment can be done in various ways including transurethral resection prostate (TUR P) surgery. TUR P is one of the most commonly performed surgical measures to treat an enlarged prostate. This surgery was chosen because it has a minimal effect when compared to other types of surgery. Post-surgery bleeding is a complication that can occur in this action<sup>[2]</sup>. Bleeding that occurs during post-surgery can be overcome by doing catheter traction and irrigation in the bladder<sup>[3]</sup>.

Traction fixation is done by pulling a catheter balloon towards the bladder neck, this action can block the entry of prostate bleeding into the bladder. Traction can be done by gluing a catheter to the patient's thigh or by putting a liter of NaCl load on the catheter through a pulley. Thighs that are done catheter gluing should not flex / legs must remain straightened as long as traction is still attached so that traction still presses the jars<sup>[4]</sup>. Traction should not be more than 24 hours because it can cause an emphasis on the penoscrotal urethra so that which can result in bladder stenosis due to ischemia<sup>[5]</sup>.

Hamid, 2016 stated that the installation of catheter traction pulled tight for 24 hours will affect pain accompanied by anxiety in patients. Pain causes non-compliance with the installation of traction fixation catheters that have not been 24 hours removed by the patients and the traction-mounted legs

should be straight, should not be bent for 24 hours, but because of the discomfort feeling undergone by the patients, it makes the patients bend themselves because of the patients' lack of the information obtained and due to the patient's internal factors.

The previous BPH cases based on Kemenkes 2008, estimated as many as 70 million degenerative cases. It occurs in developed countries as much as 19%, while in developing countries as much as 5.35%. In 2018 in Indonesia there were 9.2 million cases of BPH that happened in men over the age of 60<sup>[6]</sup>. Based on preliminary studies on medical records at RSUD Jombang the number of BPH patients in 2019 was 158 patients.

Another research was done by Sodiq (2012) mentioned that there is an effect of catheter installation on patients during post-TUR P surgery against the onset of bleeding with a value of  $p = 0.001$  before the installation of catheter traction occurred bleeding by 48% and after the installation of catheter traction observed 1-12 hours occurred bleeding by 20% and observed 12-24 hours bleeding by 8%<sup>[7]</sup>.

Based on previous researchers on 10 patients at RSUD Jombang found that non-compliance patients with catheter traction fixation, before 24 hours the patient had removed catheter fixation as many as 4 (40%) and as many as 6 (60%) patients did not remove catheter fixation. This non-compliance happened since the patients did not understand if the catheter traction should not be removed during the 24-hour post-surgery. The patients remove the catheter traction by themselves because they feel pain when traction is pulled tightly and feel tired as their feet should not be bent for 24 hours. The patients' mobilization is also limited, they are only allowed to tilt right and left during the first 24 hours.

Catheter fixation procedures must be taken during the first 24 hours during post-surgery correctly unless it results in post-surgery bleeding complications. Repeated bleeding causes the urinary catheter hose to be jammed so the urine cannot flow. Post-surgery bleeding causes the catheter hose to be stuck so that the treatment will be longer and can even result in surgery again<sup>[7]</sup>. Education to patients about the first 24-hour during post-BPH surgery care is very important since it affects the success rate of post-TUR P surgery<sup>[8]</sup>. Education is carried out by nurses to assist patients in increasing the level of health knowledge so that there is a change in behavior from non-compliance to compliance in adhering to catheter traction care<sup>[9]</sup>. So, it is expected that the role of nurses in delivering health education to the patients can be maximized when giving information<sup>[10]</sup>.

The knowledge of catheter traction care has been provided by nurses through health education with lecture methods but the results are less effective because some patients do not comply with the rules, so it is necessary to make educational efforts that are easier to understand, namely through leaflet media. The advantages of using leaflet methods can be carried everywhere, facilitate understanding and, increase learning passion<sup>[11]</sup>. The purpose of this research is to know the influence of educational media leaflets on compliance with catheter traction treatment of patients during post-BPH surgery.

## II. METHOD

The quasi-experiment post-test only control group design is used in the research. The population was all post-BPH surgery patients treated at the 'rose\*' ward in RSUD Jombang amounted to an average of 15 patients each month. The number of samples taken as many as 24 respondents were divided into 12 respondents for the treatment group and 12 respondents for the control group who met the research criteria, using simple random sampling techniques. The research instruments use leaflets and observation sheets. The implementation of the research was through educating the treatment group and control group after patients with post-BPH surgery were sent from the operation room into the ward. Education is done by using leaflet media for treatment groups and education using lectures for the control group such as those that have been done in the ward. After being given the education both in the treatment group and in the control group, observations were made about care compliance during the first 24 hours using observation sheets. The data collected were analyzed using the Mann-Whitney U Test.

### III. RESULTS AND DISCUSSION

Table 1. Characteristics of respondents of Post-BPH surgery in the ward 'Rose', RSUD Jombang, August 2021

No	Characteristic of General Data	Group			
		Treatment		Control	
		$\Sigma$	%	$\Sigma$	%
1	Age				
	26-35 years old	0	0,0	0	0,0
	36-45 years old	0	0,0	0	0,0
	46-65 years old	5	41,7	6	50,0
	> 65 years old	7	58,3	6	50,0
2	Education level				
	Not going to school	1	8,3	0	0,0
	Elementary school	2	16,7	4	33,3
	High school	6	50,0	5	41,7
	University	3	25,0	3	25,0
3	Occupation				
	Not working	7	58,3	6	50,0
	Farmer	1	8,3	1	8,3
	Civil servant	2	16,7	2	16,7
	Retired	2	16,7	3	25,0

Source: primary data, 2021

Table 1 shows that most of the respondents of the treatment for people aged 65 years above in the elderly people category amounted to 7 (58.3%) respondents, while for the control group half aged 46-65 years as many as 6 (50%) respondents and half aged over 65 years as many as 6 (50%) respondents. Table 1. based on education level, in the treatment group showed that half of respondents were high school students as many as 6 (50.0%) respondents while for the control group almost half were high school students which is as much as 5 (41.7%) respondents.

Based on the data seen in table 1, showed the majority of respondents of the treatment group who do not go to school as many as 7 (58.3%) respondents, while for the control group half of them did not work, which was as many as 6 (50.0%) respondents.

Based on the data seen in table 1, showed the majority of respondents of the treatment group who do not go to school as many as 7 (58.3%) respondents, while for the control group half of them did not work, which was as many as 6 (50.0%) respondents.

Table 2. Compliance rate of Respondents of post-BPH surgery patients in the ward RSUD Jombang, august 2021

Compliance	Group		
	Treatment		Control
	%	$\Sigma$	%
Low	16,7	7	58,3
medium	50,0	4	33,3
High	33,3	1	8,3
Total	100,0	12	100,0

Source: primary data, 2021

Table 2 shows that half of the respondents of the Treatment group had a moderate compliance rate of 6 (50.0%) respondents. While in the control group most respondents had a low compliance rate of 7 (58.3%) respondents.

Tabel 3 Mann Whitney's statistical test results

Group	Mean	SD	p
Treatment	6,75	1,138	
Control	5,00	1,348	0,004

Source: Primary Data, 2021

Table 3 showed the average compliance score of respondents in the treatment group of 6.75 with the standard deviation of 1,138, while the control group averaged a compliance score of 5.00 with the standard deviation of 1,348. Based on statistical tests with Maan Whitney test p Value Sig.  $0,004 < 0,05$  means that there is an influence of educational media leaflets on compliance with catheter traction treatment of post-BPH surgery patients.

Based on the results as seen in table 2, this research showed that half of the respondents of the Treatment group had a moderate level of compliance and the rest had high and low levels of compliance. The level of compliance means that the patients are compliant in catheter care during the first 24 hours post-surgery in terms of not sitting, not removing the catheter traction fixation by themselves, the patients drinking the 2 liters of water per day and the patients only moving the right and left tilt-only during the first 24 hours of post-TUR P surgery. Compliance is the behavior of the individual as recommended by therapy and health. The level of compliance can start from heeding every aspect of the recommendation to complying with the plan<sup>[12]</sup>.

According to Hamid (2016), the installation of catheter traction that is pulled tight for 24 hours made the patients feel painful causing anxiety. It drove the patients to be non-compliance with the installation of catheter traction fixation. It also made the patients tend to remove the catheter fixation before reaching 24 hours<sup>[4]</sup>.

Respondents in the control group mostly had low levels of compliance. At the time of observation, some respondents bent the legs on the side of the attached traction catheter, a reason for pain in the traction area, respondents also strained and did not maintain the traction position of the catheter due to a lack of understanding of the information provided by the nurses. A person's level of compliance with education can be affected by age, level of education, and employment<sup>[13]</sup>. The age of respondents in the control group averaged over the age of 65. It is categorized as the elderly people where the elderly people can experience changes in various physiological systems of the body, one of which is the nervous system. These changes cause the elderly to experience a decrease in brain work function/decrease in cognitive function<sup>[14]</sup>. The existence of impaired cognitive function can cause a decrease in the ability of respondents to receive education given in lectures. The lecture method is a method in which respondents must remember a lot of the contents delivered by the speaker without being able to learn to repeat the material delivered.

The education level of the control group of some respondents had a low level of education. According to Kuncoroningrat (2010), the higher the level of education of a person, the easier it is to receive information so that more knowledge is possessed. Conversely, less education will hinder the development of one's attitude towards the new values given. Based on the results of the study showed that half of the respondents of the treatment group were middle-educated. The level of education is influential in responding to the health education provided. Respondents who have a higher level of education provide better responses and understanding when given education<sup>[15]</sup>.

The Treatment Group had a better level of compliance than the control group. Based on the results of the Mann-Whitney test. It is obtained that the value of P-Value is Sig. 0.004 ( $P < 0.05$ ) meaning that there is an influence of educational media leaflets on compliance with catheter traction care of post-BPH surgery patients in the ward RSUD Jombang. Health education to adhere to the compliance of the first 24-hour post-BPH surgery patients is very important because it affects the success rate of post-TURP surgery. Nurses are responsible for providing effective client care<sup>[8]</sup>. This role is done by helping patients in improving the patients' health knowledge in changing their behavior from non-compliance to compliance<sup>[9]</sup>.

The improvement of knowledge is done by providing health education. Health education requires good communication and additional knowledge competencies so that a health educator can

select and use the right strategies for different educational purposes. Such as the selection and use of media is one of the important components in the delivery of information to the public<sup>[16]</sup>.

Characteristics of respondents in the treatment group are some respondents aged over 60 years in which during this age, the patients have experienced a lot of decrease in body functions including cognitive function. According to the results of Rahmawati's research, 2014 said the age over 60 years as much as 35.5% experienced low cognitive function disorders. And some respondents had low levels of education. It needs the right educational media.

A leaflet is one of the educational media that highlights vision or visuals to be more memorable and understood by all levels of society<sup>[16]</sup>. This media is very suitable for various levels of society with different levels of education. Leaflets are also easier to remember, more communicative, more effective to achieve goals<sup>[16]</sup>. Educational media using leaflets has the advantage of being more concise and easy to understand, can be used for self-study, and can be read repeatedly. So that the leaflet media is suitable for all ages despite the elderly whose thinking ability has decreased.

Because this method can be read again and again so that the understanding gained will be better. When the patients/ respondents were educated using leaflet media, they can listen to the education delivered by nurses while reading the leaflets given. After education, respondents also re-read the leaflets that have been given.

#### IV. CONCLUSION

The results showed there is an influence of educational media leaflets on compliance with catheter traction treatment of post-BPH surgery patients.

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# IPCN (Infection Prevention Control Nurse) Monitoring Function With The PPI Implementation

Widyasih Sunaringtyas<sup>a,1</sup>, Diana Rachmania<sup>b,2</sup>, Didit Damayanti<sup>c,3</sup>

<sup>a,b,c</sup>Department Of Nursing, STIKES Karya Husada Kediri, Kediri, Indonesia

\*Corresponding Author E-mail: widiana1925@gmail.com

## ABSTRACT

**Keywords:**  
infection  
prevention and  
control nurse\_1  
monitoring  
function\_2  
PPI  
implementation\_3

**Background:** The risk of infection that occurs in hospitals can be acquired and transmitted between patients, staff, health professionals, contract workers, volunteers, students, and visitors. The risk of infection can be prevented if the supervisory function is carried out by the infection prevention and control nurse (IPCN), one of which is monitoring the implementation of infection control and prevention. The purpose of this study is to analyze the relationship between the IPCN monitoring function and PPI implementation

**Methods:** The research design used correlational with cross sectional approach. The population and sample of this study were 25 nurses with a total sampling technique. The independent variable was IPCN monitoring function and the dependent variable was PPI implementation. The instrument used to measure the independent and dependent variables were observation. Data was analyzed used Spearman's rho test

**Results:** Based on the results of the descriptive analysis, almost all of the IPCN monitoring functions (84%) were in the good category. Almost all of the PPI implementation (92%) including categories was carried out optimally. Spearman's rho test results obtained P value: 0.032. Shows P value < : 0.05, This means that there was a relationship between the IPCN monitoring function and the implementation of PPI

**Conclusions:** The monitoring function carried out by IPCN needs to be maintained and it was necessary to improve the monitoring system on the evaluation and reporting aspects.

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## I. INTRODUCTION

Infectious diseases are still one of the health problems in the world, including Indonesia. Judging from the origin or acquisition of infection can come from the community (Community acquired infection) or come from the hospital environment (Hospital acquired infection) which was previously known as HAIs. The risk of infection occurring in hospitals is acquired and transmitted between patients, staff, health professionals, contract workers, volunteers, students, and visitors [1]. One of the health professionals who play a role in this risk is a nurse. because the frequency and duration of interaction with patients and visitors the longest [2]. This will increase the risk for nurses to become infected and infect when providing nursing care to patients. The role of PPI (Infection Prevention and Control) in hospitals is to monitor, report and evaluate. One of the infection problems that occur in hospitals is caused by medical actions carried out by health workers intended for the purpose of treating or healing patients, if carried out not according to procedures, they have the potential to transmit infectious diseases, both to patients (others) or even

to health workers. themselves <sup>[1]</sup>. In this case the IPCN monitoring function is very important to ensure that the implementation of activities remains on track according to program guidelines and planning in the context of controlling a program, as well as providing information to program managers about obstacles and deviations that occur as input in conducting evaluations <sup>[3]</sup>.

According to WHO (2016) HAI's are infections acquired by patients during treatment procedures and medical actions in health services after 48 hours and after 30 days after leaving the health facility. In Indonesia alone, there are only HAIs data from 10 teaching hospitals, the incidence of HAIs is quite high ranging from 6-16% with an average of 9.8%. The most common infection is the surgical site infection (IDO). The results of other studies show that the incidence of SSI in hospitals in Indonesia varies from 2-18% of all surgical procedures (Depkes RI, 2018). The incidence of HAIs in 2019 at Surya Melati General Hospital for Operational Area Infection, Catheterization in patients did not increase according to the standard but for the incidence of phlebitis in the first quarter the incidence of phlebitis was still high 16.5% still higher than the standard that should be  $\leq 1.5\%$ , 2 employees were stabbed with used needles, while in August to December 2019 the phlebitis rate decreased in September to 15.7% and continued to decline until December with a phlebitis rate of 4.6%. Meanwhile, efforts to prevent infectious diseases by nurses have been carried out by monitoring the HAIS bundle (PPI evaluation report, 2019). In 2020 starting from January-September 2020 for the prevention of infection by nurses is according to standards but the incidence of infection in patients has increased from 4.7% incidence of phlebitis in January to 12.9% in March, a decrease in the rate of phlebitis occurred until July was 7.8% but increased again in August and September by 13.3%. This was due to infusions for more than 3 days so that the incidence rate of phlebitis increased again, different from the incidence of infection in the operating area, catheter and pressure sores which always up to standard (IPCN evaluation report, 2020).

Hospital Acquired Infections (HAI's) are a serious problem for public health. HAI's are infections that are acquired or arise when the patient is hospitalized. Most infections that occur in hospitals are caused by external factors, namely diseases that are spread through food, air, or non-sterile objects. This is a serious problem for patients that can lead to an increase in the length of stay, and can even result in the patient's death. This has an impact on the costs that must be incurred greater, both by the patient and by the hospital<sup>[4]</sup>

Efforts to reduce the high prevalence of infection in patients are to increase the role of nurses in infection prevention efforts, the main component of HAIs prevention and control standards in operational actions. The monitoring function is part of the control function. This stage aims to identify whether the implementation of the PPI is in accordance with the standards. so that improvements can be made to reduce the incidence of nosocomial infections. This study aims to analyze the monitoring function of IPCN with the implementation of PPI.

## II. METHOD

This research is a correlational study with an observational analytical research design and a cross-sectional research approach, namely the type of research that observes population data and samples only once at the same time (Nursalam, 2017). The population of this study were all nurses in the inpatient room at RSUM Surya Melati Kediri as many as 25 people with a total sampling technique used so that the number of respondents was 25 nurses. The independent variable of this study is the IPCN monitoring function and the dependent variable is the implementation of the PPI. The instrument used is an observation sheet. The data were analyzed using the spearman's rho test with a significance level ( $\alpha$ ) of 0.05. H1 is accepted if the p-value 0.05.

### III. RESULTS AND DISCUSSION

The frequency distribution of respondents' general data can be seen in table 1

**Table 1. Frequency distribution of respondent characteristics**

Characteristics of Respondents	Kriteria	f	Percentage (%)
<b>General data</b>			
Gender	Female	22	88
	Male	3	12
Age	17-25 years old	3	12
	26-35 years old	21	84
	36-45 years old	1	4
	46-55 years old	0	0
last education	D3 Keperawatan	15	60
	S1 Keperawatan	10	40
Length of work	< 3 years	9	26
	≥ 3 years	16	64
<b>TOTAL</b>		25	100

Based on table 1 above, it can be seen that almost all respondents (88%) are female, almost all respondents (84%) are aged 26-35 years, most respondents (60%) have the latest education, namely D3 nursing, and almost all respondents (80%) have worked for more than 1 year.

The results of the identification of the IPCN (Infection Prevention Control Nurse) monitoring function in the inpatient room at RSUM Surya Melati Kediri are shown in table 2

Tabel 2 IPCN (Infection Prevention Control Nurse) monitoring function di ruang rawat inap RSUM Surya Melati Kediri

No	IPCN Monitoring function	F	%
1	Good Monitoring Function	21	84
2	Moderate Monitoring Function	4	16
3	Less Monitoring Function	0	0
Total		25	100

Based on table 2 above, it can be seen that according to the respondents a number of 21 nurses (84%) carried out the monitoring function in the good category and as many as 4 nurses (16%) were in the sufficient category. The IPCN monitoring function is measured based on the assessment of 25 nurses. The monitoring function is one element of the supervisory function in carrying out the role of IPCN [5]. The monitoring function is carried out to reduce or prevent the number of nosocomial infections in inpatient rooms. In addition, the role of IPCN in handling and controlling infection is an important effort in improving the quality of hospital medical services [3]. IPCN monitoring function is carried out on a scheduled basis. In line with this theory, the monitoring action taken by IPCN is to reduce the incidence of infection so that it is useful for improving the quality of nursing care. Based on the characteristics of the IPCN nurse data, 100% of them have attended training and have worked for more than 5 years. The purpose of education and training for employees is to develop skills so that work can be completed more quickly and effectively, to develop knowledge so that work can be completed rationally, to develop attitudes so that cooperation is established between fellow employees. [6]. In line with this research, training also affects the IPCN function in carrying out its monitoring function.

The results of the identification of the implementation of infection prevention and control on nurses in the inpatient room at RSUM Surya Melati Kediri are shown in table 3

Tabel 3 Implementation of infection prevention and control (PPI) in nurses in the inpatient room at RSUM Surya Melati Kediri

No	PPI	F	%
1	Optimal	23	92
2	Optimal enough	0	0
3	Less Optimal	2	8
	Total	25	100

Based on table 3 above, it can be seen that the respondents were 23 nurses (92%) whose infection prevention and control was carried out optimally and 2 nurses (8%) were less than optimal in their infection prevention and control. The PPI implementation includes aspects of washing hands using soap, washing hands using handrub, using PPE, controlling equipment decontamination waste, and managing sharps. The results of the most optimal research carried out by nurses for infection prevention and control is washing hands using handsrub. Infection prevention and control of nurses at the Muhammadiyah Surya Melati General Hospital in Kediri is carried out optimally in accordance with SOPs because nurses already understand the applicable standard operating procedures. This is in accordance with the study of reducing the incidence of infection in post-surgical cases and cases with infusion and catheter insertion, most 82% of nurses carried out standard infection handling and control procedures implemented in hospitals in accordance with SOPs [7].

In addition , it is also influenced by the training followed by nurses . All nurses have attended PPI training. According to research 92% of nurses in optimal infection prevention and control only a small proportion (8%) are less than optimal. Training is a means for individuals to adopt information from outside, information can be in the form of procedures, implementation and new knowledge that is usually developed in service. nurses will know new knowledge that is usually applied in the service. So that in providing nursing care and nursing actions in accordance with existing procedures. Based on educational factors, 40% of the last education was Bachelor of Nursing and 60% of D3 Nursing. In this study, the implementation of PPI was not influenced by nurse education. Based on the factor of length of work, 64% of nurses working 3 years have work experience in the implementation of PPI. The longer the work, the skills and knowledge will increase [5]. The results of this study are not in line with Kurniadi's research, because nurses who have worked for less than 3 years or for more than 3 years carry out PPI in the optimal category.

The results of the analysis of the relationship between the PPI monitoring function and the implementation of infection prevention and control in nurses in the inpatient room at RSUM Surya Melati Kediri are shown in table 4.

Tabel 4 IPCN monitoring function with the implementation of infection prevention and control in nurses in the inpatient room at RSUM Surya Melati Kediri

		Implementation Criteria for infection control prevention (PPI)			Total
		Optimal	Optimal Enough	Less Optimal	
IPCN Monitoring Function Criteria	Good Monitoring Function	20	0	1	21
	Moderate Monitoring Function	3	0	1	
	Less Monitoring Function	0	0	0	0
	Total	23	0	2	25
	Spearman rho test	$(p \text{ value}) = 0.032$		$r = 0.701$	

Based on table 4, the results of the spearman rho statistical test obtained a p-value of 0.032 while the correlation coefficient of 0.701 has a strong correlation (with a p value < with an error rate of 0.055, then H1 is accepted which means there is a relationship between the PPI monitoring function and the implementation of infection prevention and control). At the Nurse in the Inpatient Room RSUM Surya Melati Kediri.

Hospitals as service providers have a responsibility to prevent the high incidence of nosocomial infections in hospitalized patients [9]. IPCN has an important role in carrying out monitoring and evaluation functions to prevent the increase in nosocomial infections which is a serious problem for hospitals. Prevention and control of infection is an important effort in improving the quality of hospital medical services [3]. In addition to the technical role, the management factor is a necessary element in the success of the infection prevention and control program in hospitals and the existence of managerial guidelines for infection handling and control programs in hospitals and other health care facilities [3].

Efforts to reduce the high prevalence of infection in patients are to increase the role of nurses in handling infections, the main components of the standard prevention and control of Healthcare Associated Infections (HAIs) in operational actions include washing hands, using personal protective equipment/PPE such as: gloves, masks, face shields, protective goggles and aprons, safety practices, patient care, use of antiseptics, and handling of equipment in patient care and environmental hygiene. The best personal protective equipment is made of materials that have been treated or synthetic materials that are impermeable to liquids. Gloves protect hands from materials that can transmit disease and can protect patients from microorganisms found on the hands of health workers. Gloves are the most important barrier to prevent the spread of infection. One pair of gloves should be worn for each patient to avoid cross-contamination. Applied standards that are applied in the inpatient room at RSUM Surya Melati Kediri are carried out optimally because the IPCN monitoring function is carried out regularly and on a scheduled basis.

#### IV. CONCLUSION

The conclusions of this study are:

- 1) IPCN monitoring function almost all respondents are in good category
- 2) Implementation of infection prevention and control for almost all respondents is carried out optimally
- 3) There is a relationship between the IPCN monitoring function and the implementation of infection prevention and control in nurses in the inpatient room at RSUM Surya Melati Kediri.

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# The Correlation Between Menopausal Women's Motivation and Regular Visits to The Elderly Health Care Center

Aprilia Nurtika Sari<sup>a,1,\*</sup>, Nining Istighosah<sup>b,2</sup>

<sup>a</sup>Akbid Dharma Husada Kediri, Jl. Penanggungan 41 A, Kediri, 64114, Indonesia

<sup>b</sup>Akbid Dharma Husada Kediri, Jl. Penanggungan 41 A, Kediri, 64114, Indonesia

<sup>1</sup> *aprilia.ns0486@gmail.com\**; <sup>2</sup> *dealovanining@gmail.com*

\* Corresponding author

## ABSTRACT

*Keywords:*  
Motivation  
Menopausal women  
Regular visits  
Elderly health care center

The elderly health care center is a facility for health services for the community, especially the elderly. Menopausal women are one of the targets of the elderly health care center. The elderly health care center has an important role in maintaining the quality of life for the elderly in the community. However, the frequency of visits to the elderly health care center from year to year is decreasing. Motivation is one of the factors that can affect the frequency of visits to the elderly health care center. This study aims to determine the correlation between menopausal women's motivation and regular visits to elderly health care center. The research design used correlational analytic research with a cross-sectional approach. The population and samples were postmenopausal women who came to the elderly health care center in Bangkok Village, Gurah District, Kediri Regency. With accidental sampling technique, obtained 30 respondents. The variable consists of the independent variable, namely the motivation of postmenopausal women and the dependent variable, namely the regularity of visits to the elderly health care center. Collecting data using questionnaires and attendance lists for elderly health care center. Data processing by editing, coding, scoring, and tabulating. Data analysis using Spearman Rank correlation. The results showed that from 30 respondents, 23 respondents (76.66%) had high motivation with regular visits. Statistical test results obtained  $rs = 0.45 > rs_{table} = 0.364$ . So H1 is accepted, meaning that there is a correlation between the motivation of menopausal women and the regularity of visits to the elderly health care center. Thus, the high motivation of menopausal women must be maintained because it can affect the regularity of visits to elderly health care center. To increase motivation, it can be done by conducting home visits for the elderly, especially menopausal women who have not come regularly to the elderly health care center.

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## I. INTRODUCTION

The success of the development of countries in the world in all fields including health will improve the quality of life and public health which has an impact on increasing life expectancy and increasing the number of elderly people from year to year. The aging process will have an impact on various aspects of life, both social, economic, and health. Viewed from the health aspect, with increasing age, the elderly are more susceptible to various physical complaints, either due to natural factors or due to disease.(1)

The government has formulated various health and social service policies for the elderly aimed at improving the quality of life of the elderly, achieving a happy and efficient old age in family and community life in accordance with their existence. As a tangible manifestation of health and social

services for the elderly, the government has established services for the elderly through several levels. Health and social services at the community level are the elderly health care center. Based on data from the Central Statistics Agency, the state projects that the elderly population aged 60 years and over will increase from 27.1 million in 2020 to 33.7 million in 2025, and in 2035 to reach 48.2 million. Based on input from the data center of the Indonesian Ministry of Health, there are five provinces in the country that will be filled with elderly residents. From highest to lowest, the five provinces are: DI Yogyakarta (13.4%), Central Java (11.8%), East Java (11.5%), Bali (10.3%) and North Sulawesi (9.7%). It was further stated that the elderly in East Java ranked the third largest. (2)

In 2019, the life expectancy of women reached 73.15 years and men reached 69.30 years. As a result, the presence of the elderly female population will tend to be more than the elderly male. The number of elderly women in East Java reached 2.77 million people, more than the elderly men who reached 2.41 million people.(3)

Indonesian women who enter the premenopause period are currently 7.4% of the population. This number is estimated to be 11% in 2005, then increased again by 14% in 2015. In Indonesia, data from the Central Statistics Agency shows 15.2% of women entering menopause from 118 million Indonesian women. (4)

Many women tend to live more than 20 years after menopause, spending about a quarter or more of their lives in a state of estrogen deficiency. Due to a lack of estrogen, women can experience physical and mental decline (5). Physical inactivity not only puts women's health at risk but also increases menopausal problems. (6)

One of the targets of the elderly health care center is the elderly group, namely the age group of 45-59 years. Menopausal women are included in the pre-elderly group. The formation of the elderly group, the integrated elderly post is one of the efforts to empower the elderly. Basic health services can be obtained by the elderly through the activities of the elderly health care center in the hope of improving the quality of life of the elderly.(7)

Currently, many of the elderly health care center have been established, but the average elderly visits to the elderly health care center are still low. Motivation is very closely related to an elderly person because motivation will serve to determine the direction of what actions must be done properly, especially in improving the health of an elderly person, one of which is active attendance at the elderly health care center.

Based on the results of Nurzia (2017), it shows that there is a corelation between the motivation of the elderly and the visit of the elderly health care center. Motivation does not only arise from within the elderly, but motivation can also be influenced by information that comes from outside. Elderly motivation is one of the factors that can affect the frequency of elderly visits to the elderly health care center. Motivation cannot be separated from needs because someone is driven to do something when they feel there is a need. So, it can be interpreted that the elderly who have motivation will be encouraged to follow the elderly health care center. On the other hand, for the elderly who do not have the motivation to come to the elderly health care center, it is feared that the health of the elderly will not be monitored.(8)

Indonesia must prepare for the handling of the elderly from now on so that the elderly do not become a burden in the future. Therefore, efforts are needed to increase motivation and support for the elderly regarding the importance of health checks at the elderly health care center. Based on the description above, the authors are interested in conducting research on the correlation between menopausal women's motivation and regular visits to the elderly health care center. This study aims to analyze the correlation between menopausal women's motivation and regular visits to the elderly health care center.

## II. METHOD

The research design used correlational analytic research with a cross-sectional approach. The population and samples were postmenopausal women who came to the elderly health care center in Bangkok Village, Gurah District, Kediri Regency. With accidental sampling technique, obtained 30 respondents. The variable consists of the independent variable, namely the motivation of postmenopausal women and the dependent variable, namely the regularity of visits to the elderly health care center. The operational definition of menopausal women's motivation is an impulse that

arises from within or from outside so that the menopausal woman wants to visit the elderly health care center. While the operational definition of regular visits to the elderly health care center is the visit of menopausal women to the elderly health care center, the best visit is regularly every month or 12 times per year. If the frequency of visits has been 8 times or more in a period of 1 year including regular criteria, but if less than 8 times in 1 year including irregular criteria. Collecting data using questionnaires and attendance lists for the elderly health care center visits. Data processing by editing, coding, scoring, and tabulating. Data analysis using Spearman Rank correlation.

### III. RESULTS AND DISCUSSION

Table 1. Characteristics of Respondents in The Elderly Health Care Center, Bangkok Village, Gurah District, Kediri Regency

No.	Characteristics	f	%
1.	Education levels		
	Elementary school	6	10
	Junior high school	13	43,33
	Senior high school	10	33,33
	University/ Academy	1	3,33
	N	30	100
2.	Profession		
	Housewife	9	30
	Farmer	9	30
	Entrepreneur	12	40
	N	30	100

Table 1 shows that most of the respondents have a junior high school education background, as many as 13 respondents (43.33%). Most of the respondents work as entrepreneurs, as many as 12 respondents (40%).

Table 2. Cross-tabulation Analysis of Menopausal Women's Motivation with Regular Visits to The Elderly Health Care Center, Bangkok Village, Gurah District, Kediri Regency

Motivation	Regularity		Reguler		Irreguler		N
	n	%	n	%	n	%	
High	23	76.66	2	6.66	25	83.33	
Moderate	-	-	5	16.66	5	16.66	
Low	-	-	-	-	-	-	0
N	23	76.66	7	23.32	30	100	
Sperman Rank	rs count:0.45		rs table:0.364				

Table 2 shows that from 30 respondents, 23 respondents (76.66%) had high motivation and regularly visited the elderly health care center, 2 respondents (6.66%) had high motivation, but did not regularly visit the elderly health care center.

From the results of data analysis with Spearman rank correlation obtained rs count 0.45. When compared with the table rs with a significance level of 5% and n = 30, which is 0.364, it is found that the calculated rs is greater than the table rs. This means that H<sub>0</sub> is rejected and H<sub>1</sub> is accepted, that there is a relationship between the motivation of menopausal women and the regularity of visits to the elderly health care center.

The results of this study are in line with the research of Sulistianingsih (2017), that the motivation of the elderly has a strong correlation with the frequency of the elderly health care center visits. The higher the motivation, the frequency of visits to the elderly health care center will increase.

Motivation comes from the word "motive" which means encouragement, so motivation is an urge to do activities consciously. Without motivation, all activities carried out cannot be successful. The

motivation of the elderly to encourage the elderly to be more independent in preventing and overcoming health problems, such as visiting the elderly health care center. (10)

Motivation can come from within or from outside the individual. Intrinsic motivation is motivation that arises from within the individual itself. Intrinsic motivation arises because of a need (Sulistianingsih, 2017). In postmenopausal women, the need to socialize with other people of the same age can increase motivation to visit to the elderly health care center. In addition to checking their health, postmenopausal women have the opportunity to interact with their peers more often. They usually use this time to share their experiences about the complaints experienced during menopause. This situation makes menopausal women more relaxed in going through menopause and they are generally able to cope with the complaints they experience independently, so that it will indirectly make their lives more quality.

Extrinsic motivation is the motivation that arises as a result of external stimuli. The stimulus can come from the closest people, environment, or association (Sulistianingsih, 2017). In line with the research of Nugroho et al. (2021), the majority of the elderly who actively use the elderly health care center have good family support. The existence of family support for the elderly can cause inner peace and feelings of pleasure in the elderly. In addition, family support has an impact on the convenience of the elderly to participate in activities at the elderly health care center. The family also has a major role in providing encouragement to the elderly before other parties also provide encouragement. The pattern of influence of family support with activity shows that the higher the family support, the higher the active participation in the elderly health care center. On the other hand, the lower the family support, the lower the active participation in the elderly health care center.

Families have an important role in encouraging the motivation, interest or willingness of postmenopausal women to participate in the elderly health care center. Families can be a strong motivation for postmenopausal women if they are always available to accompany or take them to the posyandu, and remind the schedule the elderly health care center. The family is the main support system for the elderly in maintaining their health. In general, the causes of the absence of postmenopausal women in the activities of the elderly health care center are physical incapacity and the distance from the house to the place where the elderly health care center is held. This is where the support of younger family members is needed to guide them. With good family support, the motivation and willingness of the elderly to participate in the elderly health care center will also increase.

Apart from family, motivation can also be obtained from social support such as friends, government and health workers. In this case, the elderly health care center cadres are an integral component of health workers to support development goals (12). One of the efforts to create a healthy Indonesian society is to empower the community, including by involving community members or cadres who are willing to voluntarily be involved in health issues. Cadres play a role in community development in the health sector through activities carried out at posyandu (13). Cadre as a party that is a link to government programs. The role of cadres in general for the implementation of the elderly health care center consists of being a community activator, monitoring and counseling (14).

The elderly health care center cadres in Bangkok Village come from community leaders who are seen as having more abilities than other community members. In general, the duties of the elderly health care center cadres are to prepare for the implementation of the elderly health care center, to mobilize the community to attend and participate in the elderly health care center activities, and to assist health workers in registration, counseling, and various other public health efforts, including the implementation of elderly gymnastics. The role of cadres is very influential in the utilization of the elderly health care center services for the elderly so that it can be said that the arrival of the elderly to the elderly health care center depends on how big the participation of cadres is given to the elderly.

Most of the respondents had junior high school education, as many as 13 people (43.33%). Only 1 (3.33%) of the respondents had a tertiary education. The level of education is one of the predisposing factors that affect the utilization of health services by individuals. Educational status affects the utilization of health services because educational status will affect awareness and knowledge about health.

Education is the process of changing the attitudes and behavior of a person or group of people in an effort to mature a person through teaching and training efforts. Although only 1 (one) respondent has a tertiary education, the motivation of most respondents to visit the elderly health care center for the elderly remains high. In this case, information through health education such as counseling about the benefits of the elderly health care center for the elderly can increase the number of visits to the elderly health care center even though the education level of most respondents is low.

The elderly health care center is a community-based health service forum to serve the elderly population by emphasizing health services on promotive and preventive efforts. In addition to health services, the elderly health care center also provide social, religious, educational, skills, sports, arts and culture services, and other services needed by the elderly with the aim of improving the quality of life through improving health and welfare.(16)

The elderly health care center activities are expected to provide convenience for the elderly in obtaining basic health services, so that the quality of life of people in the elderly is well maintained. The elderly should take advantage of the elderly health care center properly, so that the health of the elderly can be optimally maintained and monitored. (17)

The elderly health care center activities for the elderly in Bangkok Village already have complete facilities and infrastructure. The Posyandu for the elderly is routinely held every month, located at the Bangkok Village Hall. Regional midwives and trained cadres manage all the elderly health care center activities, including routine health checks every month, health counseling, and exercise for the elderly every Sunday morning. By participating in the elderly health care center activities on a regular basis, it is hoped that postmenopausal women can live their old age happily and efficiently in family and community life in accordance with their existence.

#### **IV. CONCLUSION**

The results of this study indicate a significant correlation between menopause women's motivation and regularity of visits to the elderly health care center. Families are expected to always give attention and support, either physically or psychologically to postmenopausal women to be diligent in visiting the elderly health care center. The elderly health care center cadres are expected to be able to further improve their abilities in terms of knowledge, attitudes and skills as motivators for the surrounding community. Health workers are expected to hold ongoing health counseling activities, especially regarding the benefits, objectives and types of services provided at the elderly health care center so that the elderly, especially postmenopausal women, are motivated to regularly attend the elderly health care center.

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# Relationship Between Mom Anxiety Towards Covid-19 With Breast Milk Production

Siti Asiyah<sup>a,1\*</sup>, Frischa Budi Chrisdamayanti<sup>b,2</sup>

<sup>a,b</sup> Bachelor of Midwifery Study Program, School of Health Sciences Karya Husada Kediri, Soekarno Hatta Street Number 7, Pare Sub-district, Kediri Regency, East Java, Indonesia  
\* Corresponding author :E-mail:aninkamila@gmail.com

## ABSTRACT

*Keywords:*

Anxiety\_1

Covid-19\_2

Breast Milk Production\_3

**Background:** Preliminary data on 10 postpartum mothers who were controlled on 26-27 April 2021, 5 mothers said breastfeeding was only not smooth and anxious and 5 breastfeeding mothers were smooth and not anxious, this is because during the covid-19 pandemic they still have to go out of the house and check their condition after delivery, mothers are afraid to carry germs that can affect themselves and their babies. The purpose of the study: to determine the relationship between post partum mother's anxiety about covid-19 with breastfeeding at clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital Jombang.

**Methods:** This type of research is an analytic survey using a cross sectional design. The independent variable is the postpartum mother's anxiety about covid-19, and the dependent variable is breastfeeding. The research site was at Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital Jombang on 28 June 2021 – 12 July 2021. The population was postpartum mothers who had control at Clinic 7 (Gynecology Specialist) who met the inclusion criteria, a sample of 35 people. Bivariate data analysis using Chi Square Test.

**Results:** The results showed that of the 35 postpartum mothers most of them experienced moderate anxiety for covid-19 amounting to 15 people (42,86%) and mild anxiety in covid-19 amounting to 10 people (28,6%). Expenditure of breast milk mostly non current breast milk amounted to 24 people (68,6%), while the current breastfeeding amounted to 11 people (31,4%). There is a relationship between postpartum mother's anxiety about covid-19 and breastfeeding ( $p$  value:  $0,000 < 0,05$ ).

**Conclusions :** Mothers who do not have confidence in being able to produce breast milk, stress, worry, fear of contracting covid-19 to themselves and their babies, mother's unhappiness when breastfeeding during the covid-19 pandemic affect breast milk production, because it will inhibit the let down reflex.

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## I. INTRODUCTION

Breast milk Mother (ASI) is a liquid secreted by the mother's breast glands in the form of natural foods or the best nutritious and high-energy milk produced during pregnancy.<sup>(1)</sup> The World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) recommend the child should only be given breast milk (ASI) for at least 6 months and continued breastfeeding until the child is 2 years old. According to WHO data (2016), the coverage of exclusive breastfeeding worldwide is only around 36% during the period 2007-2014. The achievement of exclusive breastfeeding in Indonesia of 54.0% has reached the target. Smooth breastfeeding is strongly influenced by psychological factors because the mother's feelings can inhibit or increase the release of oxytocin . The mother's calm mental and emotional condition greatly affects the

smoothness of breastfeeding. If the mother is stressed, depressed, uneasy, anxious, sad, and tense will affect the smoothness of breastfeeding. Anxious mothers will express less milk than mothers who are not anxious.<sup>(2)</sup>

The results of 2 previous studies conducted showed that there was an influence of the anxiety of the Covid-19 pandemic on the production of breast milk for post partum mothers at the Independent Practice Midwife Hj. Rusbawati Muara Badak of 24 breastfed people did not come out, the highest proportion was worried about the Covid-19 pandemic amounting to 21 people (56.8%), but there were 3 people who did not breastfeed who were not worried about the Covid-19 pandemic (8.1%). As for the 13 breastfed people, the highest proportion of those who were not worried about the Covid-19 pandemic was 12 people (32.4%), but there were 1 people who were breastfeeding who were worried about the Covid-19 pandemic.(2,7%).<sup>(3)</sup> The second study showed that there was a relationship between anxiety and the smooth release of breast milk in post partum mothers while being treated at the Mother and Child Kasih Ibu Hospital in Manado. From the results of the research that has been carried out, it shows that there is a significant relationship between anxiety and the smooth discharge of breast milk at the Mother and Child Hospital Kasih Ibu Manado, where the value of - Value = 0.001 is smaller than a = 0.05.<sup>(2)</sup>

Corona Virus Disease (Covid-19) is a new type of virus that has never been identified before in humans. Clinical manifestations of Covid-19 usually appear within 2 days to 14 days after exposure. Common signs and symptoms of corona virus infection include symptoms of acute respiratory disorders such as fever, cough and shortness of breath. In severe cases it can cause pneumonia, acute respiratory syndrome, kidney failure, and even death.<sup>(3)</sup>

Corona Virus Disease 2019 (Covid-19) infection has spread since 2019, the World Health Organization (WHO) reported that this virus was first discovered in Wuhan, Indonesia. All parts of the world are now reporting the number of people who are positively infected with Covid-19, including in Indonesia.<sup>(4)</sup>

The situation has developed into a global public health emergency. It is evident from 216 countries that have been recorded as positive for Covid-19 as many as 17,660,523 and 680,894 cases have died on August 28, 2020. In Indonesia, there has been an increase in positive confirmed cases as many as 3,003 to 165,887, those who recovered increased by 2,325 to 120,900, and those who died increased by 105 to 7,169 cases.

The situation has developed into a global public health emergency. It is evident from 216 countries that have been recorded as positive for Covid-19 as many as 17,660,523 and 680,894 cases have died on August 28, 2020. In Indonesia, there has been an increase in positive confirmed cases as many as 3,003 to 165,887, those who recovered increased by 2,325 to 120,900, and those who died increased by 105 to 7,169 cases.<sup>(4)</sup>

The latest data from the Ministry of Health on Sunday (14/2/2021) stated that there were an addition of 516 new cases in East Java. With this addition, the total number of positive cases in East Java is currently 122,375. In addition, East Java reported an increase in the number of recovered patients as many as 666 cases on February 10, 2021. Thus, the number of recovered cases in East Java currently stands at 108,676 cases. East Java also recorded a death toll of 50 cases. This addition brings the total number of deaths from Covid-19 in East Java to 8,562 cases.<sup>(5)</sup> Based on the report on the results of the swab of pregnant women from the Jombang District Health Office, on 15-19 February 2021 there were 11 pregnant women with positive swabs in Jombang Regency who were close to the interpretation of childbirth.<sup>(6)</sup>

Based on data from the Cempaka Isolation Room, patients with postpartum mothers who were positive for Covid-19 in February 2021 amounted to 16 patients, and on average 90% of postpartum mothers did not come out of breast milk until day 3.<sup>(7)</sup> In this Covid-19 pandemic situation, there are many restrictions on almost all routine services including maternal and neonatal health services. For example, postpartum mothers are reluctant to go to the Puskesmas or other health service facilities for fear of being infected.<sup>(8)</sup> Based on data from Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital, Jombang, ANC patient visits in March 2020 amounted to 185 patients experienced a decrease in April 2020 by 135 patients, from the analysis this is because Mojowarno Christian Hospital is one of the patient referral hospitals Covid-19, which was appointed by a decree by the Governor of East Java and the Regent of Jombang, so that the community assumes that many

Mojowarno Christian Hospital suffers from Covid-19 so that people are afraid to seek treatment at the Mojowarno Christian Hospital. Hospitals are required to wear masks and wash their hands and every checkup is carried out with an Antigen Test.<sup>(7)</sup> Preliminary data through interviews on 26-27 April 2021 at Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital Jombang 10 pregnant women who will give birth in May 2021, it was found that there were 6 people who were anxious during the covid-19 pandemic because they still had to leave the house and getting a pregnancy check, making mothers afraid to carry germs that can affect themselves and their children.

One of the factors that affect the failure in the breastfeeding process can be caused by not releasing breast milk. The smoothness of breastfeeding is strongly influenced by psychological factors. Psychological disorders in postpartum mothers cause a decrease in milk production, because it will inhibit the let down reflex. Psychological changes in postpartum mothers generally occur in 3 days post partum. Two days postpartum, mothers tend to be negative about their baby's care and are very dependent because their energy is focused on themselves. The mother's calm mental and emotional condition greatly affects the smoothness of breastfeeding. If the mother is stressed, depressed, uneasy, anxious, sad, and tense will affect the smoothness of breastfeeding.<sup>(3)</sup>

The phenomenon that occurs at this time, the smooth release of breast milk is often caused by anxiety factors, even though if the mother's mood feels comfortable and happy it will affect the smooth flow of breast milk, on the contrary if the mother feels anxious it will hinder the smooth flow of breast milk.<sup>(3)</sup> From the data of Clinic 7 (Obstetrician) Mojowarno Christian Hospital, preliminary data survey of 10 postpartum mothers who control the postpartum period at Clinic 7 (Obstetrician Specialist) Mojowarno Christian Hospital, Jombang on 26-27 April 2021, 3 mothers said that there was only a small amount of breast milk. who came out and felt anxious and not confident in giving breast milk to their babies, 2 other mothers said the milk did not come out and the mother felt anxious, while 5 postpartum mothers said the milk had come out smoothly and were not anxious. For this reason, postpartum mothers must think positively, try to love their babies and relax when breastfeeding. When mothers think positively and remain calm, it will trigger milk production so that milk can come out smoothly, on the other hand mothers whose psychological conditions are disturbed such as feeling anxious will affect milk production so that milk production can decrease and cause breast milk to be less smooth.<sup>(2)</sup>

Based on the data above and observations to date, the author wants to prove about "The relationship between postpartum maternal anxiety and Covid-19 with breastfeeding at Clinic 7 Obstetrician Specialist Mojowarno Christian Hospital Jombang" as the title of this study.

## II. METHOD

The type of research used is an analytical survey using a cross sectional design. This research was conducted at Clinic 7 (gynecology specialist) Mojowarno Christian Hospital Jombang on 28 June 2021-12 July 2021 with a population of 35 people. Sampling in this study was conducted by non-probability sampling with purposive sampling technique. Inclusion criteria: Postpartum mothers who have given birth normally by early initiation of breastfeeding(IMD) and are treated with their babies at the Mojowarno Christian Hospital in Jombang, postpartum mothers and their babies are in good health, mothers with prominent nipples, postpartum mothers who are willing to be respondents. Exclusion criteria: Mothers who gave birth by cesarean section, mothers who have problems with their breasts (mastitis, breast engorgement, breast abscess), babies who have other medical contraindications such as congenital defects (cleft lip), premature babies (LBW), and Asphyxia baby

This study uses an instrument in the form of a respondent identity questionnaire, an anxiety questionnaire using a modified DASS 42 scale (Depression Anxiety Stress Scale 42) which consists of 14 items of anxiety questions, namely a score of 0-7 normal anxiety, 8-9 mild anxiety, 10-14 moderate anxiety, and 15-19 severe anxiety, and a score of more than 20 indicates very severe anxiety, as well as a checklist sheet for breastfeeding fluency. consists of 10 questions, with the entries divided into two categories, namely Yes or No, which is not smooth if the respondent answered < 5 yes to one of the questions, and smoothly 5 if the respondent answered yes to all questions.

The types of data used in this research are general data and special data. General data is data obtained directly from respondents regarding the identity of the mother and special data, data obtained from the results of the maternal anxiety questionnaire and the results of the breast milk discharge checklist sheet.

Processing of the data obtained from the results of this study was processed manually by grouping the results from the distributed questionnaire sheets and then analyzed using statistical tests. After that it is processed using a computerized system, the stages are Editing, Coding, Scoring, Data Entry or Processing and Data Tabulation.

Bivariate analysis was used to determine how much influence and risk the dependent and independent variables had by using the chi-square test. The results of the statistical analysis of the chi-square test at the level of significance ( $p$  value:  $0.000 < : 0.05$ ), so  $H_0$  is rejected and  $H_1$  is accepted, that is, there is a relationship between postpartum mother's anxiety about Covid-19 and breastfeeding at Clinic 7 (Gynecology Specialist) Christian Hospital Mojowarno Jombang.

### III. RESULTS AND DISCUSSION

**Tabel 1.** Characteristics of Respondents Based on Age, at Clinic 7 (Obstetrician Specialist) Mojowarno Christian Hospital Jombang, July 2021

Nu.	Age Characteristics	f	%
1.	< 20 years old	1	2,9
2.	20-35 years old	28	80
3.	> 35 years old	6	17,1
	Total	35	100

Based on the results of the study, it showed that of the 35 postpartum mothers at Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital, Jombang, most of them aged 20-35 years amounted to 28 people (80%).

The age factor determines the maternal condition and is related to the maternal condition pregnancy, childbirth and breastfeeding. Maternal age greatly affects the way mothers make decisions in maintaining their own health where as age increases, mother's knowledge and experience will increase.<sup>(2)</sup> pregnancy, childbirth and breastfeeding. Maternal age greatly affects the way mothers make decisions in maintaining their own health where as age increases, mother's knowledge and experience will increase.<sup>(3)</sup> The more old enough, the level of maturity and strength of a person will be more mature in thinking so that the more mature the way of thinking that makes the individual ready to breastfeed his child in any condition.<sup>(3)</sup>

**Tabel 2.** Characteristics of Respondents Based on Education, at Clinic 7 (Obstetrician Specialist) Mojowarno Christian Hospital Jombang, July 2021

Nu.	level of education	f	%
1.	Primary school	4	11,4
2.	Junior high school	11	31,4
3.	Senior High School	19	54,3
4.	Higher education	1	2,9
5.	Jumlah	35	100

Based on the table, the results showed that of the 35 postpartum mothers at Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital, Jombang, most of them had high school education, amounting to 19 people (54.3%). A good level of education can indirectly affect a person's level of anxiety. A high level of education will broaden the view and scope of association, so that a

higher level of education will.<sup>(9)</sup> make it easier for respondents to receive information about health so that it will reduce anxiety levels.

**Tabel 3.** Characteristics of Respondents Based on Early Initiation of Breastfeeding, at Clinic 7 (Obstetrician Specialist) Mojowarno Christian Hospital Jombang, July 2021.

Nu.	early initiation of breastfeeding (IMD )	f	%
1.	Yes	35	100
2.	No	0	0
3.	total	35	100

The results showed that of 35 postpartum mothers at Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital, Jombang, 35 people did IMD (100%) and 0 (0%) did not do IMD. Early Breastfeeding is when the baby begins to suckle on its own after birth. Actually, human babies also like other mammals have the ability to suckle on their own. Provided that the baby's skin is left in contact with the mother's skin, for at least an hour immediately after birth. This method of initiating early breastfeeding is called the breast crawl or crawling looking for one's own breasts. (10) Mothers who perform IMD will.<sup>(10)</sup>

Table 4. Characteristics of Respondents Based on Joint Hospitalization , at Clinic 7 (Obstetrician Specialist) Mojowarno Christian Hospital Jombang, July 2021

Nu.	Treat Join	f	%
1.	Yes	35	100
2.	No	0	0
3.	total	35	100

The results showed that from 35 postpartum mothers at Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital Jombang, it was obtained that 35 people were admitted to hospital (100%) and 0 people were not admitted (0%)

Joint care that is carried out from an early age between mother and baby will soon establish a bonding process due to the touch between mother and baby. The more frequent direct physical contact between mother and baby will affect milk production.<sup>(11)</sup> The mother should be in the same room with her baby as soon as possible and continuously. Continuous physical contact between mother and baby will increase the bond of affection. In addition, the mother will be encouraged to immediately breastfeed her baby whenever the baby wants it so that this will facilitate milk production.<sup>(11)</sup>

Table 5. Breastfeeding Expenditure for Postpartum Mothers at Clinic 7 (Obstetrician Specialist) Mojowarno Christian Hospital Jombang, July 2021

Nu.	Breast milk production	f	%
1.	Breast milk is not smooth	24	68,6
2.	Smooth milk	11	31,4
	total	35	100

The results of the study show that of 35 postpartum mothers at Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital, Jombang, most of the non-fluent breast milk were 24 people (68.6%), while the smooth breastfeeding was 11 people (31.4 %).

The process of lactation or breastfeeding is the process of forming breast milk that involves the hormone prolactin and the hormone oxytocin. The prolactin hormone during pregnancy will increase but the milk has not come out because it is still blocked by the high estrogen hormone. And at the time of delivery, the hormones estrogen and progesterone will decrease and the hormone prolactin will be more dominant so that milk secretion occurs.<sup>(3)</sup> During the lactation

process, there are two reflexes that play a role, namely the prolactin reflex and the let down reflex/flow reflex that will arise due to stimulation of the baby's sucking on the nipple. The process of formation of breast milk begins early in pregnancy, breast milk is produced due to the influence of hormonal factors, the process of formation of breast milk begins with the formation of lactogens and hormones that affect the formation of breast milk, the process of formation of lactogens and hormones for breast milk production.<sup>(3)</sup>

Table 6. Anxiety of Postpartum Mothers Against Covid-19 at Clinic 7 (Obstetrician Specialist) Mojowarno Christian Hospital Jombang, July 2021

Nu.	Anxiety level	N	%
1.	Normal	6	17,1
2.	Mild Anxiety	10	28,6
3.	Moderate Anxiety	15	42,9
4.	Severe Anxiety	4	11,4
5.	Very Heavy Anxiety	0	0
Jumlah		35	100

Based on Table 4.7. The results showed that of 35 postpartum mothers at Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital Jombang, it was found that most of them experienced moderate anxiety in COVID-19 as many as 15 people (42.9%) and mild anxiety in Covid-19 amounted to 10 people. (28.6%).

In this COVID-19 pandemic situation, there are many restrictions on almost all routine services including maternal and neonatal health services. For example, postpartum mothers are reluctant to go to the Puskesmas or other health service facilities for fear of being infected.<sup>(8)</sup>

Table 7. Cross-tabulation of Anxiety of Postpartum Mothers against Covid-19 with Breastfeeding Expenditure at Clinic 7 (Obstetrician Specialist) Mojowarno Christian Hospital Jombang, July 2021.

Nu.	Anxiety level	Breast Milk Production				Total	% Total		
		Smooth milk		Breast milk is not smooth					
		F	%	F	%				
1.	Normal	6	17,1	0	0	6	17,1		
2.	Mild Anxiety	5	14,3	5	14,3	10	28,		
3.	Moderate Anxiety	0	0	15	42,9	15	42,9		
4.	Severe Anxiety	0	0	4	11,4	4	11,4		
5.	Very Heavy Anxiety	0	0	0	0				
Total		11	31,4	24	68,6	35	100		

Based on Table 7. the results of the study show that of 35 postpartum mothers at Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital, Jombang, the highest proportion of non-current breastfeeding was found to be anxiety, while postpartum mothers against Covid-19 amounted to 15 people (42.9%). As for the 35 people who breastfeed smoothly, the highest proportion of normal postpartum mothers' anxiety about Covid-19 is 6 (17.1%), but there are 5 people who breastfeed smoothly experience mild anxiety of postpartum mothers against Covid-19 (14.3). 7%. Statistical test results obtained p value:  $0.000 < : 0.05$  so  $H_0$  is rejected, which means that there is a significant relationship between postpartum mother's anxiety about Covid-19 and

breastfeeding at Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital, Jombang. Anxiety is a mood disorder characterized by feelings of deep fear or worry. Symptoms that are complained of are dominated by psychological factors but can also be caused by physical factors. A person will experience an anxiety disorder when the person concerned is unable to cope with psychosocial stressors. Postpartum mothers have to prepare themselves to breastfeed their babies, but some mothers experience anxiety so that it affects the smoothness of breastfeeding. Breastfeeding mothers must think positively and relax so as not to experience anxiety and the mother's psychological condition becomes good, good psychological conditions can trigger the work of hormones that produce breast milk.<sup>(2)</sup>

There is a relationship between the psychological condition of the mother with the smooth production of breast milk, a good psychological state of the mother will motivate her to breastfeed her baby so that the hormones that play a role in breast milk production will increase because milk production starts from the breastfeeding process and will stimulate milk production.<sup>(2)</sup> Based on the results of research and supporting theories, researchers assume that the anxiety that occurs in postpartum mothers is because they think too much about negative things during the COVID-19 pandemic. Postpartum mothers should think positively, try to love their baby, and relax while breastfeeding. When mothers think positively and remain calm, it will trigger milk production so that milk can come out smoothly, on the contrary, mothers whose psychological conditions are disturbed such as feeling anxious will affect milk production so that milk production can decrease and cause breast milk to not run smoothly. Supported by the Covid-19 pandemic, people, especially postpartum mothers, experience anxiety which can have an impact on breastfeeding.

#### IV. CONCLUSION

The results of the discussion about the anxiety of the mother's relationship with Covid-19 with the breastfeeding contest at Clinic 7 (Gynecology Specialist) Mojowarno Christian Hospital Jombang, that most of the respondents experienced moderate anxiety, some of them experienced moderate anxiety.

#### V. ACKNOWLEDGMENT

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# An Overview of The Organoleptic Assessment of Herbal Teas with the addition of Stevia leaves

Moh. Ikhwan Kosasih<sup>a</sup>, Zauhani Kusnul<sup>a1\*</sup>

<sup>a</sup> Pamenang Health Intitute, Kediri Indonesia,

\* Corresponding author: zauhani.kusnul@gmail.com

## ABSTRACT

*Keywords:*  
herbal tea  
meniran  
Moringa  
pegagan  
organoleptic  
test

The current COVID-19 pandemic situation encourages many efforts to adapt to new situations. At the individual level, adaptation is in the form of changes in various healthy living behaviors in all aspects. In addition, one thing that is also very important to note is the individual's internal immune system. Various natural products have been researched to have positive benefits in increasing body resistance/immunity, including green tea leaves, moringa, meniran, and pegagan. The current pandemic situation has inspired us to combine various natural ingredients that have been proven to have immunomodulatory activity in the combination of herbal tea preparations. Herbal teas generally have a less favorable taste and aroma because most of the natural ingredients are naturally nutritious, each of which has a distinctive taste and aroma. The purpose of this study was to obtain an overview of respondents' assessment of the taste, aroma and color of the combination herbal tea preparations that we added stevia leaves as a natural sweetener. The research was conducted at the Stikes Pamenang research laboratory involving 50 panelists who gave sensory assessments including taste, aroma, color and overall acceptance of herbal tea formulations. The results of this study indicate that the addition of stevia leaves to herbal tea preparations makes herbal tea preparations more preferable in terms of taste.

*Keyword:* *herbal, tea, organoleptic test. stevia*

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## I. INTRODUCTION

The current COVID-19 pandemic is a global health threat (1). Various efforts to overcome the Covid-19 problem have been carried out by both the government and non-governmental organizations. Various regulations have been implemented and the public has been widely educated to be disciplined in implementing health protocols for the prevention of covid 19 (2). What is also very important in this situation is the effort to increase body resistance/immunity (3). Various natural products have been investigated to have positive benefits in increasing body resistance/immunity, including meniran leaves (4), Moringa leaves (5), pegagan leaves (6) and green tea leaves (7).

Tea is a type of beverage that is very familiar and consumed as a daily drink by people in several countries including Indonesia, and has the potential to become a growing trend (8). The term herbal tea is used for drinks made from fruit, spices or other plant parts such as skin, flowers, leaves and roots that are brewed. The current pandemic situation has inspired us to combine various natural ingredients that have been proven to have immunomodulatory activity in the combination of herbal tea preparations. This herbal tea preparation in the form of teabags was chosen with the consideration that drinking tea has become a culture/custom of everyday people, in terms of serving it is very easy and practical because it only requires water like brewing regular tea, easy to distribute because it does not require special storage and distribution techniques, easy in the manufacturing process because it does not require tools and high technology, also the price is relatively affordable making it possible to be reached by the

wider community.

Constraints that commonly occur in herbal teas are generally related to public/consumer acceptance of the taste and aroma of herbal teas, because most of the natural ingredients are naturally nutritious, each of which has a distinctive taste and aroma. It is this problem that we will currently examine by conducting organoleptic tests on teabag preparations a combination of green tea, moringa, meniran, gotu kola with us adding stevia leaves as a natural sweetener. Stevia is a type of herbaceous plant that has a naturally sweet taste, currently stevia is being developed as a sugar substitute sweetener. The advantages of stevia are strong sweetness and zero calories so it is safe even for diabetics (9).

The purpose of this study was to obtain the most preferred formulation by the panelists covering aspects of taste, aroma, color and overall acceptance. This research helps/provides alternative solutions on how to increase immunity in a practical and safe way for the wider community by consuming herbal tea blends..

## II. METHOD

This study is a descriptive study. The purpose of this study was to obtain the most accepted/most preferred formulation by the panelists. The research had been conducted at the Pamenang Stikes research laboratory involving 50 panelists who meet the criteria/requirements.

The sensory test used is hedonic quality (acceptance test) which aims to determine the response of the panelists to the properties of the product. This study involved 50 panelists who will provide an assessment of the herbal tea blended with a combination of green tea, moringa, meniran, pegagan and stevia. The formulation is made in 5 variations of composition (A, B, C, D and E), formulation A; herbal tea with 40% stevia, B; herbal tea with 30% stevia, C; herbal tea with 20% stevia, D; herbal tea with 10% stevia and E; non herbal commercial tea. Panelists will be asked to give a subjective assessment of each variant with a rating range of 1-5. A value of 1 is strongly disliked, 2; dislike, 3; neutral, 4; like and 5; really like. Panelists were selected from the general public/consumers of herbal tea, the criteria for panelists were 15-59 years old, healthy/not sick at the time of the study, and willing to be panelists.

Before conducting the sensory test, the panelists were given an explanation of the research objectives and what the panelists had to do. The herbal tea was brewed with boiling water for 5 minutes and served to the panelists in a glass cup with a coding known only to the researcher. Panelists were given 5 minutes to taste the taste, smell the aroma, observe the color and give an overall assessment and then fill in the results of the assessment on the checklist sheet provided. The research was carried out while still implementing the covid 19 prevention health protocol. The results of the next study were statistically analyzed to get the formulation that was significantly most favored by the panelists.

## III. RESULTS AND DISCUSSION

In this organoleptic test, we involved 50 respondents/panelists from the general public consisting of 23 men, 27 women, age range 12-59 years, and professions as students, employees, entrepreneurs, civil servants, and housewives. The number of male and female respondents in this study was quite balanced, with 23 male respondents and 27 female respondents (Figure 1). While the age distribution of the respondents in this study is quite balanced and represents various age levels from teenagers to adults (Figure 2).

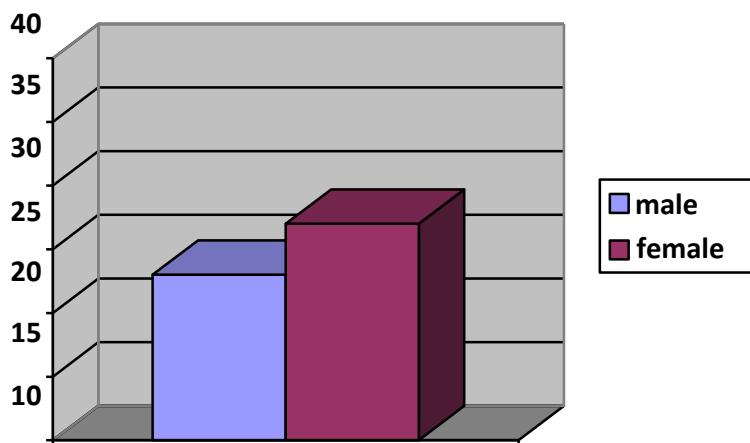


Figure 1. The gender distribution of respondents

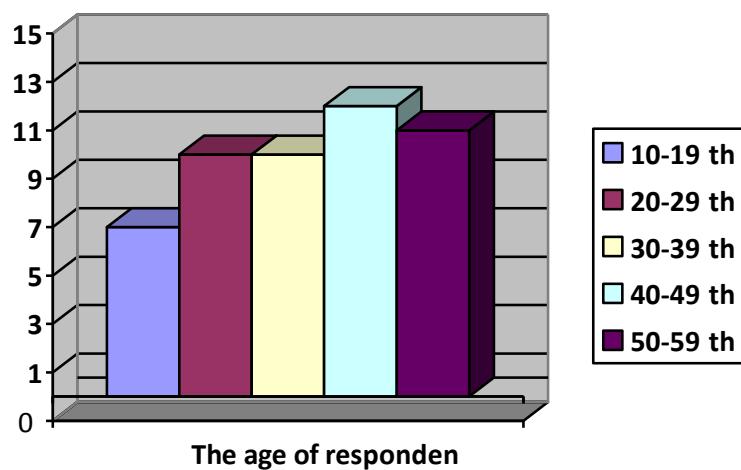


Figure 2. The age distribution of respondents

After all panelists give an assessment score, data is tabulated and calculated the average score of each formulation. The highest score shows the most preferred formulation by respondents. In this study it was found that A formulation (The herbal with Stevia 40%) seemed to have the highest score of the panelists (figure 3). On the assessment of the aroma, it was obtained that the composition D (stevia leaf 10%) was the preparation that received the highest score by the panelists and was followed by composition A (stevia leaf 40%) (Figure 4). From the overview of the results of the organoleptic test above it appears that in terms of color, composition A (Stevia leaves 40%) and composition E (Stevia leaf 0%) get a balanced score from the respondents (figure 5).

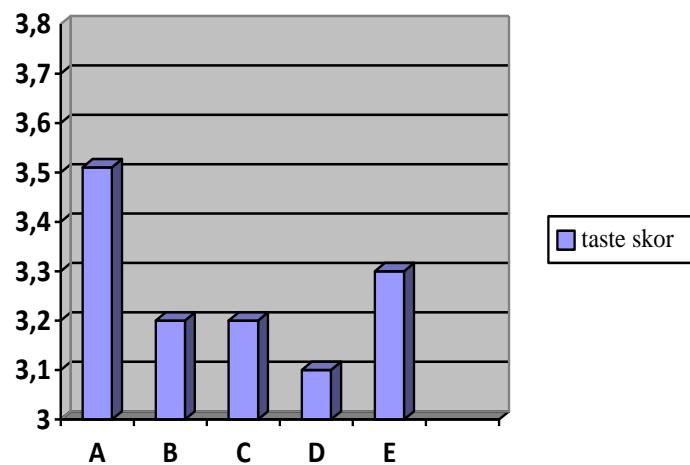


Figure 3. Distribution of taste scores of the combination of herbal tea and stevia leaves

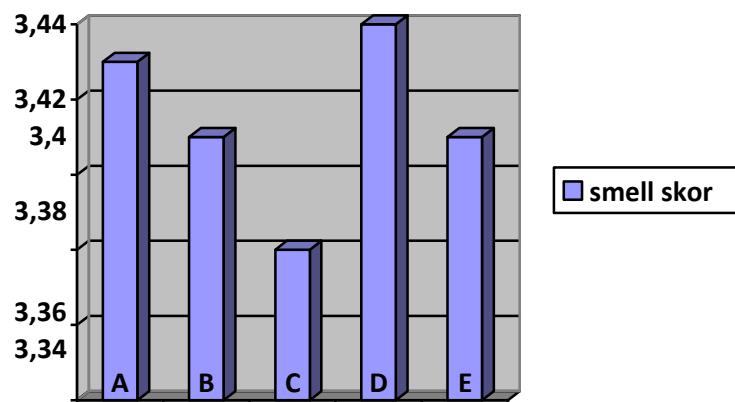


Figure 4. Distribution of smell scores of the combination of herbal tea and stevia leaves

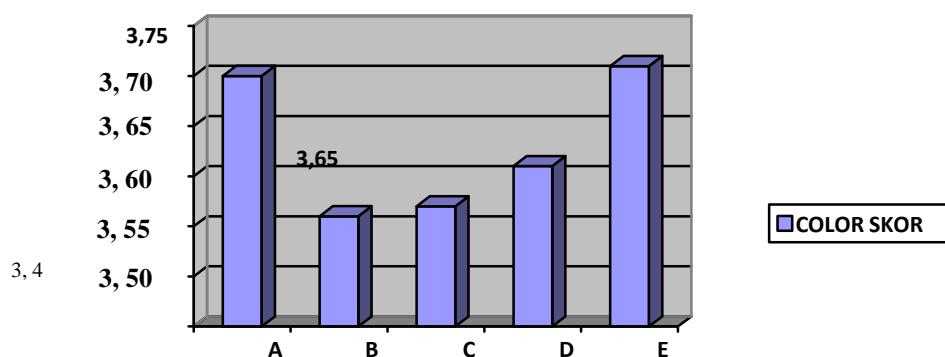


Figure 5. Distribution of color scores of the combination of herbal tea and stevia leaves

The results of this study answer problems related to herbal tea, where the addition of Stevia leaves adds scores to the taste, aroma and aroma of herbal tea preparations. The results of this study are in line with various previous studies, and aligned with the characteristics of Stevia leaves where Stevia leaves are a type of leaf that has a sweet taste naturally, Stevia 200-300 times sweeter than sucrose and believed to be the best sugar substitute (14) . In addition to the taste sweet Stevia also has other advantages because Stevia also has antioxidant content, antimicrobial, antidiabetic and antihipprestriction (15).

#### IV. CONCLUSION

The results of this study can be concluded that the addition of stevia leaves can increase the scores of acceptance of combination herbal tea.

**V. ACKNOWLEDGMENT**

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# The Effect of *Abelmoschus esculentus* Infused Water Therapy for Hypertension

Anis Murniati<sup>a\*</sup>

<sup>a</sup>Nursing Department, STIKes Hutama Abdi Husada, Tulungagung, Indonesia

\*Corresponding Author E-mail: anismurniati85@gmail.com

## ABSTRACT

**Keywords:**  
*Abelmoschus esculentus*,  
Hypertension,  
Systolic,  
Diastolic

**Background:** High blood pressure (hypertension) is an increase in blood pressure in the arteries which is characterized by a systolic more than 140 mmHg and a diastolic more than 90 mmHg. The prevalence of hypertension increase sharply, it is predicted that in 2025 around 29% of adults worldwide suffer from hypertension. The development of complementary therapies for hypertension has been widely developed, one of which is the use of the herbal okra. Okra (*Abelmoschus esculentus*) is a vegetable that has a very low calorie, contains 30 calories in 100 grams, does not contain saturated fat or cholesterol, a source of protein, vitamins and mineral, dietary fiber. It's also contain large amounts of glycine which is responsible for the viscosity of suspension fluids and consistency so that it functions is to control cholesterol levels and lower blood pressure.

**Methods:** The subject group was observed before the intervention, then observed again after the intervention. Data analysis using Wilcoxon sign rank test with p value = 0.05. The subject is human who has hypertension.

**Results:** The mean systolic blood pressure in the pretest was 150 mmHg, means diastolic pretest was 90 mmHg. The mean systolic after administration of infused water okra for 7 days was 141 mmHg and diastolic was 83 mmHg. The results of data analysis showed a systolic significance value of 0.000 and a diastolic significance of 0.01.

**Conclusions:** From the results of the study, it can be concluded that the infusion of water okra (*Abelmoschus esculentus*) has potential antihypertensive activity

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## I. INTRODUCTION

Hypertension is an increase in systolic blood pressure of more than 140 mmHg and diastolic blood pressure of more than 90 mmHg which is carried out in 2 measurements with a span of five minutes in a state of sufficient rest or calm. Hypertension is called *the silent killer* because in the initial condition without symptoms so that hypertension is not known and after symptoms appear, it is known that complications may even occur. Target organ damage due to complications of hypertension will depend on the magnitude of the increase in blood pressure and the duration of the undiagnosed and untreated blood pressure condition. Organs that experience complications due to hypertension are the brain, eyes, heart, kidneys, and can also affect peripheral arteries.

Blood pressure is determined by two main factors, namely cardiac output and peripheral resistance. Cardiac output is the product of heart rate and stroke volume. Stroke volume is determined by the strength of myocardial contraction and venous return. This pressure so that blood reaches all organs and tissues, returns to the heart, blood functions to transport oxygen and nutrients<sup>6</sup>. Hypertension is caused by an increase in total peripheral resistance due to narrowing of

small arteries. Changes in blood pressure are regulated by baroreceptor reflexes, while the renin-angiotensin aldosterone pathway controls salt, fluid, and blood pressure<sup>7</sup>.

Based on Basic Health Research<sup>5</sup>, the prevalence of hypertension in Indonesia is 34.1%. This has increased compared to the prevalence of hypertension in Riskesdas 2013 which was 25.8%. It is estimated that only 1/3 of cases of hypertension in Indonesia are diagnosed, the rest are undiagnosed.

Hypertension can be prevented by controlling risky behaviors such as smoking, unhealthy diet (less consumption of vegetables and fruit, excessive salt consumption), obesity, lack of physical activity, alcohol consumption, and stress. The success of controlling blood pressure to reach the target has been shown to reduce the incidence of stroke by 30-40% and the incidence of coronary heart disease by 20%. Consumption of salt must be considered, it is recommended 5 to 6 grams per day. However, in daily practice one never calculates how much salt is consumed.

In addition to consuming salt, a healthy lifestyle must be done to prevent and even reduce hypertension. A healthy lifestyle can be done in addition to eating healthy foods as well as exercising regularly 30 minutes per day. If you already suffer from hypertension, long-term treatment is needed, even for life, you must take medication regularly as recommended by the doctor even though there are no symptoms. The management of hypertension by pharmacological therapy still raises doubts among individuals, especially regarding the high cost, non-compliance of patients in the treatment process or perceptions of the side effects of a drug so that in addition to pharmacological treatment, many people also take non-pharmacological treatment. One of the non-pharmacological therapies is using herbal medicines, namely natural ingredients. Various herbal therapies that have been scientifically proven to lower blood pressure are by using okra (*Abelmoschus esculentus*)<sup>4</sup>.

Okra is one of the vegetables that is very low in calories, this plant which is also referred to as gumbo contains only 30 calories per 100 g and contains no saturated fat or cholesterol. Okra is a vegetable source that is rich in fiber, minerals, and vitamins, so it is often recommended by nutritionists for cholesterol control and weight loss programs, improves heart function, acts as an antihypertensive, helps stabilize blood sugar by regulating the rate at which sugar is absorbed from the intestines, and relieves stress, constipation<sup>1</sup>. This study aims to analyze the effectiveness of noni fruit tea in lowering blood pressure with okra as herbal ingredients.

## II. METHOD

The research design is used *Pre Experiment research design* with *One group pre-post test design*. This research was conducted on human subjects by giving okra infused water. The sample in this study were some people with hypertension in Jengglunharjo Village, Tanggunggunung Tulungagung District. The samples in this study were 30 respondents. The group of subjects was observed by measuring their blood pressure before the intervention, then given therapy with infused water okra at a dose of 200 cc three times a day for seven days and on the eighth day the respondents would be observed by measuring blood pressure as a measurement of the post test value. *Data analysis using Wilcoxon sign rank test with p value = 0.05*.

## III. RESULTS AND DISCUSSION

The results of the study obtained data on the distribution of respondents according to gender, age and weight distribution. The following is the respondent's characteristic data:

Table 1. Distribution of respondents by sex, age and weight distribution

No.	Characteristic	Frequency	Percentage (%)	
1	Ages :			
	40-50 years	2	6.7%	
	>50-60 years	22	73.3%	
	>60 years	6	20%	
	Respondents			30 (100%)
2	Gender			

No.	Characteristic	Frequency	Percentage (%)	
	Male	17	56.7%	
	female	13	43.3%	
	Respondents			30 (100%)
3	Weight			
	50-60 kg	23	76.7%	
	>60 kg	7	23.3%	
	Respondents			30 (100%)

The average age of the respondents was 57 years with the lowest age being 45 years and the oldest age being 64 years.

Table 2. Blood Pressure Measurement Results Before and After Treatment

	Before		After	
	systole	diastole	systole	diastole
mean	150.16	89.50	140.50	83.33
median	150.00	90.00	140.00	80.00
Std. Deviation	9.33	6.21	9.03	6.47
Minimum	140.00	80.00	120.00	70.00
Maximum	170.00	100.00	160.00	90.00

Table 4. Statistical Test Results of the Effect of Treatment

	systole	diastole
P value	0.000	0.001

The statistical tests of this research is Wilcoxon showed that the p value was 0.000 for the effect of treatment on systolic blood pressure and p value of 0.001 for the effect of treatment on diastolic blood pressure.

Based on the results of the study, it was found that the average systolic blood pressure before being given infused water okra therapy was 150.16 mmHg while the average systolic blood pressure after being given therapy was 140.5. The average diastolic blood pressure before being given infused water therapy was 89.5 while the average diastolic blood pressure after being given therapy was 83.33. The results of statistical testing with Wilcoxon, the systolic blood pressure obtained a significance result of 0.000 while the diastolic blood pressure obtained a significance result of 0.001.

Infused water okra contains active compounds that can prevent oxidative stress, namely a disturbance in the balance between the production of oxidants and antioxidants related to free radicals. Plants contain secondary metabolites that have potential as antioxidants, including phenolic compounds, alkaloids, steroids, terpenoids and flavonoids. Phenol compounds can reduce free radicals by dropping their electrons through the hydrogen atom of the hydroxyl group<sup>3</sup>. Antioxidants help increase HDL levels in the blood and suppress LDL secretion. Secondary metabolites found in okra (*Abelmoschus esculentus* L) include flavonoids, alkaloids, glycosides, tannins and steroids/terpenoids. Alkaloid compounds, saponins, quercetin and flavonoids that play a role in lowering cholesterol levels in the blood.

Quercetin can reduce *de novo* synthesis of fatty acids, thereby affecting cholesterol biosynthesis and lipoprotein formation. The fiber in okra can affect hypolipidemia, stabilize blood sugar levels by determining the absorption of blood sugar levels by the intestine and reduce the assimilation of sugar through the intestine. Okra seeds contain bioactive peptides that function as ACE inhibitors that can inhibit ACE<sup>2</sup>.

Based on the results of the statistical tests used to analyze *pre-test* and *post-test* blood pressure with a significant level of = 0.05, the results were P = 0.000 for systolic blood pressure and 0.001 for diastolic blood pressure. This shows that H<sub>0</sub> is rejected and H<sub>1</sub> is accepted because the

value of  $p \leq 0.05$ . This means that there is an effect of giving infused water okra (*Abelmoschus esculentus*) to decrease systolic blood pressure and diastolic blood pressure in respondents. This happens because the content of dioactive substances and protein in okra seeds has benefits as an ACE-inhibitors block the action of ACE, to prevent the conversion of angiotensin I to angiotensin II. Angiotensin II is a vasoconstrictor and stimulates aldosterone secretion. Blocking its action reduces peripheral vascular resistance (afterload), which lowers blood pressure<sup>2</sup>. ACE inhibitors also inhibit the degradation of bradykinin and stimulate the synthesis of substances that can cause vasodilation, including prostaglandin E2 and prostacyclin. Increased bradykinin enhances the blood pressure-lowering effect of ACE inhibitors, but has side effects including dry cough. ACE inhibitors are very effective in preventing regression of left ventricular hypertrophy by reducing direct stimulation by angiotensin II to cardiac muscle cells. In the case of hypertensive patients, the mechanism of action of ACE inhibitors lowers blood pressure through several mechanisms, including reducing peripheral vascular resistance, decreasing sympathetic activity, reducing Na and water retention<sup>2</sup>. Using alternative complementary therapies on a regular basis, one of which is consuming okra *infused water* can also reduce systolic and diastolic blood pressure so that blood pressure is always stable which would be better if balanced with diet and regular exercise. If this is complied with by people with hypertension, blood pressure will be at normal or stable limits.

#### IV. CONCLUSION

The results showed that there was an effect of infused water okra on systolic and diastolic blood pressure because Okra is a vegetable plant that contains seed protein that is able to release ACE inhibitory peptides.

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# Knowledge About Breastfeeding Techniques to The Event of Nipple Blister

Linda Andri Mustofa <sup>a,1\*</sup>, Wuri Widi Astuti <sup>b,2</sup>, Mareming Ati <sup>c,3</sup>

<sup>a,b,c</sup>

Bachelor of Midwifery Study Program, School of Health Sciences Karya Husada Kediri, Kediri, East Java, Indonesia

<sup>1</sup>Email\*: [lindaandrimustofa21@gmail.com](mailto:lindaandrimustofa21@gmail.com), <sup>2</sup>Email : [wuriwidi@gmail.com](mailto:wuriwidi@gmail.com), <sup>3</sup>Email : [newmarem1@gmail.com](mailto:newmarem1@gmail.com)

\*Corresponding Author E-mail: [lindaandrimustofa21@gmail.com](mailto:lindaandrimustofa21@gmail.com)

## ABSTRACT

*Keywords:*  
Knowledge\_1  
Breastfeeding Techniques\_2  
Nipple Blisters\_3

**Background:** Mother's milk (ASI) is the single best food for newborns up to 6 months. Breastfeeding for 6 months can prevent about 1.4 million deaths in children under five worldwide. Only 37% of infants in low-income countries are exclusively breastfed. Nipple blisters are one of the reasons mothers stop breastfeeding their babies.

**Methods:** Analytical Research Design with a Cross-sectional approach. The independent variable is knowledge and the dependent variable is nipple blisters. The population is primiparous postpartum mothers in the working area of Tirtoyudo Health Center Malang Regency, a total of 35 people. The research sample of 32 respondents was selected using a simple random sampling technique. The study was conducted from August 14 to September 28, 2020. Data were collected using a questionnaire instrument and an observation sheet. Data analysis using Spearman Rank statistical test.

**Results:** The results showed that the incidence of nipple blisters was 56.3% in respondents with less knowledge, 12.5% in respondents with sufficient knowledge, and 9.4% in respondents with good knowledge. Analysis of the data with the spearman rank test obtained the results of  $p$ -values = 0.000 <  $\alpha$  which means that lack of knowledge contributes to the incidence of nipple blisters.

**Conclusions:** Nipple blisters occur when the mother breastfeeds with the wrong technique, namely the nipple and the part around the breast do not fit properly into the baby's mouth. Good knowledge of breastfeeding techniques will encourage mothers to breastfeed properly so that the incidence of nipple blisters can be avoided.

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## I. INTRODUCTION

Breast milk is an ideal source of nutrition with a balanced composition and adapted to the growing needs of the baby. Breast milk is the most perfect baby food, both in quality and quantity. With proper breastfeeding management, breast milk as a single food will be sufficient to meet the growing needs of a normal baby until the age of 6 months<sup>(1)</sup>. In order to achieve the success of exclusive breastfeeding (bringing only breast milk to the baby without other additional food for 6 months) actually does not require special tools and expensive costs. What is needed is patience, time and knowledge about how to breastfeed properly so that there are no problems during the exclusive breastfeeding process.

The World Health Organization (WHO) and UNICEF in 2017 stated that the average exclusive breastfeeding in the world was 40%, this shows that the target to be achieved is 70% by 2030<sup>(2)</sup>. Referring to the 2012 World Breastfeeding Trends Initiative report, Indonesia is ranked 49 out of 51 countries that support exclusive breastfeeding. And In Indonesia, The coverage of exclusive breastfeeding in 2016 was 54% for infants 0-5 months, while breastfeeding for up to 6 months was 29.5%<sup>(3)</sup>.

WHO states that 35.6% of mothers fail to exclusively breastfeed their babies and 20% of them are mothers in developing countries<sup>(4)</sup>. Research conducted by Wahyuningsih on the factors that influence breastfeeding failure, one of which is caused by the problem of sore nipples<sup>(5)</sup>. It was reported that about 57% of breastfeeding mothers had suffered from nipple abrasions<sup>(6)</sup>.

Cracked nipples are one of the most common problems experienced by breastfeeding mothers. Nipple blisters can also occur at the end of feeding, the baby does not properly release the suck. Other factors that cause sore nipples include improper breastfeeding technique, exposure to soap, alcohol or chemicals, moniliasis in the baby's mouth, and babies with short tongues. Improper breastfeeding technique can cause sore nipples and make the mother reluctant to breastfeed and the baby will rarely breastfeed. If the mother skips breastfeeding to avoid pain, it can cause breast emptying to occur, as a result of reduced milk production<sup>(7,8)</sup>.

The results of a preliminary study conducted at the Tirtoyudo Public Health Center, Malang Regency on August 10, 2020, there were 60 postpartum mothers who breastfeed their babies, 35 of whom were primiparous postpartum mothers. Four out of 6 postpartum mothers who breastfeed their babies say they don't understand the correct technique or how to breastfeed their babies.

Based on this background, the researchers are interested in taking research on the Relationship of Knowledge of Correct Breastfeeding Techniques with the Incidence of Blistered Nipples at the Public Health Center.

## II. METHOD

The research design used is descriptive analytic with a cross-sectional approach. The independent variable in this study is knowledge and the dependent variable is nipple blisters. The population used in the study were all primiparous postpartum mothers in the working area of Tirtoyudo Health Center Malang Regency, a total of 35 people. While the research sample is 32 respondents who were selected by simple random sampling technique. The study was conducted from August 14 to September 28, 2020. Data were collected using a questionnaire instrument and an observation sheet in the Tirtoyudo Public Health Center Work Area, Malang Regency, which had previously been declared ethically eligible by the Ethics Committee of the STIKES Karya Husada Kediri Research and Community Service Institute. Then the data was processed and analyzed by univariate and bivariate with Spearman Rank statistical test with 95% confidence degree and significance level (alpha) 0.05.

## III. RESULTS AND DISCUSSION

### 3.1 RESULTS

Table 1. Frequency Distribution of Knowledge of Correct Breastfeeding Techniques to in the Work Area of Tirtoyudo Health Center Malang Regency August - September 2020

Variable	f (n=32)	%
<b>Knowledge</b>		
Bad	17	53.1
Enough	4	12.5
Good	11	34.4

Based on table 1. The distribution of the frequency of knowledge of breastfeeding techniques in the work area of the Tirtoyudo Public Health Center, Malang Regency in August-September 2020, it can be seen that most of the respondents, namely 17 respondents (53.1%) lacked knowledge about

correct breastfeeding techniques.

Table 2. Distribution of the frequency of nipple blisters in the working area of Tirtoyudo Public Health Center, Malang Regency, August - September 2020

Variable	f(n=32)	%
<b>Nipple Blisters</b>		
Yes	18	56.3
No	14	43.7

Based on table 2. The distribution of the frequency of nipple blisters in the working area of the Tirtoyudo Public Health Center, Malang Regency in August-September 2020, it can be seen that most of the respondents, namely 18 respondents (56.3%) experienced the occurrence of sore nipples.

Table 3. The relationship between knowledge of correct breastfeeding techniques and the incidence of cracked nipples in the working area of Tirtoyudo Public Health Center, Malang Regency

Variable	Knowlegde						P	
	Bad		Enough		Good			
	N	%	N	%	N	%		
<b>Nipple Blisters</b>								
Yes	11	34.4	4	12.5	3	9.4	18 56.3 .000 (coef : .867)	
No	6	18.8	0	0	8	25	14 43.7	

Based on table 3. The relationship between knowledge of correct breastfeeding techniques and the incidence of sore nipples in the Tirtoyudo Public Health Center, Malang Regency, it can be shown that there is a significant relationship between the variables of mother's knowledge about breastfeeding techniques and the incidence of sore nipples ( $p = 0.000$ ).

### 3.2 DISCUSSION

The results of data analysis between the knowledge variable and the incidence of sore nipples using the Spearman Rank test obtained a significance value of 0.000 which is smaller than  $= 0.05$  ( $p < 0.05$ ). So it can be concluded that  $H_0$  is rejected and  $H_1$  is accepted, which means that there is a significant relationship between knowledge of correct breastfeeding techniques and the incidence of sore nipples in the working area of Tirtoyudo Public Health Center, Malang Regency.

Knowledge is the result of knowing and occurs after someone senses a certain object using the five senses. Most of the knowledge is obtained through the eyes and ears<sup>(9)</sup>. Knowledge possessed by a person affects the formation of behavior. Knowledge of the correct breastfeeding technique is needed by mothers. Especially in primiparous mothers who have no previous experience. Primiparity is a factor that can be associated with the occurrence of blisters on the nipples, this is because the information and knowledge of mothers regarding the breastfeeding process is still limited. In line with the study about nipple trauma and maternity, it showed that primiparous postpartum mothers had a greater chance of experiencing nipple injury compared to mothers who had more than one child. This is because primiparous mothers do not have previous experience in breastfeeding practices so that the knowledge of mothers regarding the position of breastfeeding their babies is lacking<sup>(10)</sup>.

A literature study about factors associated to nipple trauma in lactation states that inadequate breastfeeding techniques, including handling and positioning between mother and child are also associated with breast problems in some countries. In theory, the correct breastfeeding technique is that as far as possible all of the areola goes into the baby's mouth, make sure the mouth is wide open, the baby's cheeks are rounded, and the chin touches the mother's breast. During breastfeeding, the child's body is attached to and facing the mother, the head and body are parallel, the mouth is at the same level as the nipple and the baby's bottom can be supported by the mother's hand so that the baby's position is comfortable<sup>(11)</sup>. In line with the research by Prananingrum, 18 out of 21 respondents with inappropriate

breastfeeding techniques experienced blisters on the nipples<sup>(12)</sup>.

Providing education to mothers regarding correct breastfeeding techniques is very important so that the process of exclusively breastfeeding babies is successful. Mother's ignorance about how to breastfeed can cause sore nipples that can thwart breastfeeding. Education will be more meaningful if the provision of information has been given during pregnancy. So that after the baby is born, the mother is ready to provide the best nutrition for her baby.

#### IV. CONCLUSION

There was a relationship between knowledge about correct breastfeeding technique and the incidence of sore nipples ( $p<0.05$ ). Lack of knowledge of mothers about correct breastfeeding techniques, increases the incidence of sore nipples in primiparous postpartum mothers

#### V. ACKNOWLEDGMENT

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# Health Education Program In Menopause To Improve The Quality of Life (QoL) of Menopausal Women In Covid-19 Pandemic In Kediri East Java

Mirthasari Palupi<sup>a,1</sup>, Reni Yuli Astutik<sup>b,2\*</sup>

<sup>a</sup> Karya Husada Nutrition Academy, Jln. Soekarno Hatta 7 Pare, Kediri, East Java, Indonesia

<sup>b</sup> Karya Husada Health Science, Karya Husada Health Science, Soekarno Hatta 7 Pare, Kediri, East Java, Indonesia

<sup>1</sup> Email First Author : college.mirthasaripalupi@gmail.com; <sup>2</sup> Corresponding author: wilbicara@gmail.com \*

## ABSTRACT

*Keywords:*

health education program\_1  
menopausal women\_2,  
quality of life\_3,  
Covid-19 pandemic\_4

**Background:** Menopausal symptoms can affect daily activities that may eventually cause a negative impact on the quality of life (QoL) of menopausal women. Health education program can be one of the alternatives to addressing menopausal complaints and increases QoL of menopausal women. This study aims to analyze the effectiveness of health education program for menopausal women in improving the QoL menopausal women in Kediri Regency.

**Methods:** This research has used true experimental with pretests posttest control group design. This research was conducted in Kediri Regency East Java Province. An amount of 88 menopausal women (N= 44 became group interventions and N= 44 became control groups) was done with a random system. The intervention group had educational health program consist 6 times health education in small group discussions, as well as 3 times of training to utilize unused items or objects, 3 times of training on making herb and 6 times of training for menopausal gymnastics. The control group received blood pressure checks and weighing. QoL was measured using WHOQOL-BREF. Analysis used paired t-test, independent samples t-test with  $\alpha = 0.05$ .

**Results:** The mean scores of QoL for the intervention group were 51.8 (pretest) and 66.3 (posttest). The QoL was significantly impaired among the intervention group [mean (SD); 14.4 (4.5)] compared to control group [mean (SD); 0.4 (1.4)] ( $p < 0.005$ ). The paired t-test showed that there was a significant difference of QoL score before and after health education program in the intervention group ( $t = 13.436$ ,  $p = 0.001$ ), but there was no significant difference of QoL in the control group ( $t = 1.067$ ,  $p = 0.0347$ ).

**Conclusions:** A health education program for menopausal women for 3 months can improve the QoL during the Covid-19 pandemic.

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## I. INTRODUCTION

Menopause occurs at the age of 50 years, when related to a human life cycle, the menopause phase indicates the existence of a natural process with the change in the period of reproduction to non-reproduction. Menopause as the cessation of menstruation as a result of the cessation of ovulation because the ovarian follicles disappear so that the production of estradiol decreases.<sup>[1,2]</sup> Menopause can be identified

from the cessation of menstruation for 12 months or a period equivalent to 3 previous cycles as a result of cessation of ovarian function that causes permanent amenorrhea.<sup>[3]</sup> The consequences of hormone fluctuations cause symptoms and conditions in women that differ between women and others. Symptoms that can be caused include hot flushes and night sweats, vaginal dryness and complaints in the bladder, changes in sexual desire, sleep problems, mood swings, other changes in the body. Some menopausal women experience severe menopausal symptoms that can affect daily activities that may eventually cause a negative impact on the quality of life (QoL) of menopausal women.<sup>[4,5]</sup> QoL can be interpreted as a person's perception of position in a life associated with a culture or value system in relationships for goals, expectations, standards and concerns.<sup>[6]</sup>

The main symptoms in the menopause period experienced are vasomotor complaints, which include hot flushes and night sweats that occur in 75% of women and as much as 25% cause significant problems.<sup>[7,8]</sup> This complaint is associated with the alteration of hormone levels and changes in norepinephrine as well as serotonin which causes narrowing in the thermoregulatory zone resulting in a rise in temperature. Based on the research data obtained a higher prevalence (40%-60%) of physical, psychological, vasomotor, sexual disorders in menopausal women associated with the QoL.<sup>[3,4]</sup> The low QoL of menopausal women can affect the menopausal woman eyes. As a result of research on menopausal women in Turkey, the results of 90% of menopausal women complain about menopause and consider menopause as a negative phenomenon.<sup>[9]</sup> Most women describe menopause as the end period of the young or late menstrual period. At the time of menopause, women need social support from the family so that it can go through menopause with fun. The husband is the closest person and has an important role in providing support to menopausal women. According to the study, husband support can reduce depression and anxiety so as to reduce menopause syndrome.<sup>[9,10]</sup>

In addition to the husband who is a life companion, menopausal women also need to get information on health problems experienced so that will have an understanding of health care about oneself and health protection. Interventions in health education can be one of the alternatives to addressing menopausal complaints. In addition, in pandemic Covid-19, menopausal women need to get concerned with the understanding of health protocols. The menopausal women still take the activity as a wife who came out to the house to meet the needs of the family.<sup>[3,10]</sup> The provision of health education will help women with menopause to develop knowledge, attitudes and behaviors in overcoming changes and problems during the menopause so as to adapt to various changes and symptoms happened at that time and can apply health protocols. In health education, there are information transfer activities and knowledge of health workers who have been trained to menopausal women and husbands related to menopause syndrome so that complaints can be minimized and handled properly.

Research on menopause in Indonesia, especially in Kediri, is included in low priority. One of the implications of increasing the quality of life of menopausal women is still low because of the lack of research data that can be used as a service recommendation, because menopause is considered as a normal condition that will be experienced in the life cycle of women, although it is necessary to adapt to various problems and changes during the menopause so as to be able to improve QoL.<sup>[11]</sup> This study aims to analyze the effectiveness of health education program for menopausal women in improving the QoL menopausal women in Kediri Regency. With the knowledge of the researcher, research related to health education for menopausal women during a pandemic has

never been carried out in Kediri Regency, so it is not yet known how effective in improving the QoL in menopausal women.

## II. METHOD

### Design

This research uses true experimental pretests and posttest control group design.

This research was conducted in Kediri Regency East Java Province in Mei-August 2020 by using the subject of menopausal women aged between 45-55 years. Prospective respondents taken from Public Health Centre in Kediri area that meet the criteria of inclusion is menopausal women who experience menopause syndrome, have a husband, do not work, do not smoke, do not consume alcohol, no surgical history, no history of hormone replacement therapy, not being in the use of hormonal therapies and not having chronic diseases, have whatsApp number. Respondents who work in health care units and have chronic diseases such as hypertension, DM, heart disease, kidney failure is excluded from the sample.

Respondent takes with random sampling cluster sampling and obtained a data of 88 menopausal women. A total of 44 menopausal women became group interventions and a total of 44 menopausal women became control groups. The retrieval of control groups and intervention groups is done with a random system.

Research is conducted on menopausal women who have signed informed consent. This research has obtained a certificate of ethics from Ethics Commission Karya Husada Kediri Health Science.

### Data collection

The method of health education used by researchers is a method of discourse, modified with small group discussions, where each group consists of 11 people. The intervention group is given 6-time health education and small group discussions, as well as 3 time of training to utilize unused items or objects, 3-times of training on making herbs to overcome menopausal complaints and 6x of training for menopausal gymnastics. The education contains material about the change in menopause, signs and symptoms, the nutritional period of menopause, the management of menopausal complaints which are given in the form of modules.<sup>[12]</sup> The control group is given a booklet on the changes in menopause, signs and symptoms, menopause nutrition, menopausal complaints management and menopausal gymnastics.

Instruments in this research used Questionnaires used for QoL of menopausal women were adopted from The World Health Organization Quality of Life (WHOQOL-BREF). WHOQOL-BREF consists of 26 question items; 1 question item for measuring quality of life in general, 1 item for general health, and 24 items for four domains, namely 1) physical consists of 7 questions that include physiological states individual in the form of physical complaints, needs rest, disease conditions, mobility and daily activities, work capacity; 2) psychology consists of 6 question items that includes emotional, intellectual and individual cognitive in the form of positive feelings and negative, self-esteem level, confidence individual, ability to remember and concentrate, life satisfaction; 3) social relations consists of 3 question items which includes individual circumstances in play a social role in the form of interaction interpersonal between individuals and people others, the involvement of individuals in doing social activities, sexual activities and the existence of social support; 4) the environment that consists of 8 question items. Rating of the four domains using scale Likert.<sup>[13]</sup>

### Data analysis

This research uses Paired t-test, independent sample-test with  $\alpha=0.05$  for data analysis.

### III. RESULTS AND DISCUSSION

Table 1. Characteristic Respondents

Characteristic	Intervention group (N=44)	Control group (N=44)		P value
		Mean ±SD	n (%)	
Age	51,1±4,5		51,7±4,7	0,770
▪ Menarche age (yea	13,6±1,6		13,3±1,4	0,314
▪ Menopause age (year)	49,4±3,6		49,9±3,6	0,425
Menopause period				0,629
▪ < 5 year	20 (45,4%)		17 (38,6%)	
▪ ≥ 5 year	24 (55,6%)		27 (61,4%)	
Menopausal symptoms				0,707
▪ Not at all	3 (6,8%)		5 (11,4%)	
▪ A little bit	25 (56,8%)		19 (43,2%)	
▪ Moderate	12 (27,3%)		20 (45,4%)	
▪ Extreme	4 (9,1%)		0 (0%)	
Education				0,757
▪ Low	19 (43,2%)		15 (34,1)	
▪ Middle	23 (52,3%)		25 (56,8%)	
▪ High	2(4,5%)		4 (9,1%)	
Working				0,130
▪ No	17 (38,6%)		22 (50%)	
▪ Yes	27 (61,4%)		22 (50%)	
Health assurance				0,405
▪ No	25 (56,8%)		17 (38,6%)	
▪ Yes	19 (43,2%)		27 (61,4%)	
Parity				0,289
▪ ≤1	3 (6,8%)		1 (2,3%)	
▪ 2-3	5 (11,4%)		4 (9,1%)	
▪ > 3	36 (81,8%)		39 (88,6%)	
Physical Activity				0,134
▪ Never	9 (20,5%)		7 (15,9%)	
▪ 1-2/week	13(29,5%)		12 (27,3%)	
▪ ≥ 3/week	22 (50%)		25(56,8%)	
Social Activity				0,246
▪ Never	5 (11,4%)		9(20,5%)	
▪ 1-4 x/ month	14 (31,8%)		10 (22,7%)	
▪ > 4 x/ month	25(56,8%)		25(56,8%)	

Table 1 shows that in the intervention group, most of them experienced menopause > 5 years (54.6%), experienced menopausal symptoms in the mild category (56.8%), moderately educated (52.3%), worked (61.4%), not have health insurance (56.8%), parity (81.8%), do physical activity > 3 times/week (50%), do social activities > 4x/month (56.8%). The control group mostly experienced menopause > 5 years (61.4%), experienced menopausal symptoms in the moderate category (45.4%), moderate education (56.8%), working (50%), having health

insurance (61.4 %), parity (88.6%), doing physical activity > 3 times/week (56.8%), doing social activities > 4x/month (56.8%).

Based on the research, the average age of menopausal women is 49 years and the average age of menarche is 13 years. The mean age of women was 49 years and menarche was 13 years.

Table 2. Quality of Life Assessment Results of Menopausal Women in the Intervention Group and Control Group in Kediri Regency (N=88)

Variabel	n	Minimum	Maximum	Mean	SD
Intervention Group					
• Pretest	44	36	64	51.8	7.6
• Posttest	44	61	81	66.3	3,1
Gained Score	14.4				
Control Group					
• Pretest	44	39	65	52.7	6.3
• Posttest	44	41	64	53.2	4,9
Gained Score	0.5				

Table 2 shows that the mean quality of life assessment for postmenopausal women in the intervention group was 14.4 and the mean in the control group was 0.5. The pre-test scores of the intervention group and the control group were not much different (intervention mean 51.8 and control mean 52.7), but in the post-test, the mean of the intervention group was 66.3 and the mean of the control group was 53.2.

Table 3 Results of Paired Samples T-test Quality of Life analysis in the Intervention Group and Control Group

Quality of live score Pretest-Posttest	Mean	95% CI		t	df	Sig
		Lower	Upper			
Intervention group	-13.675	-15.675	-12.786	-13.436	44	0.000
Control group	-0.680	-0.980	-0.341	-1.067	44	0.347

Table 3 describes the quality of life scores of the intervention group and the treatment group. The results showed that there was a significant difference in the QoL score of the intervention group ( $p = 0.000 < p=0.005$ ).

Table 4 Different Test Results on Change in QoL Score of Pretest and Posttest in Two Unpaired Group (Independent Samples t-test)

QoL Domain	t	Sig (2-tailed)	Mean Difference	95% CI	
				Lower	Upper
Physical domain	9.567	0.000	16.345	16.345	12.124
Psychological domain	8.778	0.000	13.345	13.345	9.657
Social domain	7.678	0.000	14.346	14.346	8.657
Environment domain	4.098	0.000	11.566	11.566	4.001

The results of the paired t-test showed that there were differences in the QoL scores before and after being given health education with  $p = 0.0001$  with the difference in score amounted to 14.4 in the intervention group, but not in the control group with  $p$  value = 0.0347 and  $t = 13.436$  with a difference in QoL scores of 0.5.

Based on the results of the Independent Samples t-test analysis, it was found that  $p$ -value  $<0.05$ . The conclusion  $H_0$  rejected and  $H_a$  accepted. This means that there are differences in changes in the quality of life scores in the pretest and posttest in the physical domain, psychological, social, and environmental between the intervention group and the control group.

These findings are consistent with other studies reporting the effectiveness of health education on improving QoL during menopause. The positive impact of this research is that we involve husbands in health education so that husbands can find out more about menopause and how to help their wives when they experience discomfort during menopause. Emotional support from partners can reduce depression and anxiety and improve social relationships in menopause. Educated men are constantly looking for ways to improve their knowledge and performance about menopause, and their wives experience a higher QoL during menopause. During menopause, the husband can help their wives by doing exercises with them, providing emotional support, teaching relaxation techniques and spending more time with them. Therefore, improving the QoL for menopausal women more than anything depends on educating the woman and her husband.<sup>(14)</sup>

According to this research, intervention of health education with given information related to menopause nutrition so that respondents can monitor their lifestyle so far. A healthy lifestyle and having a strong social support network can help women reduce the consequences of menopausal symptoms. Intervention about health education in this research effective for increase QoL in menopausal women. Improved QoL scores of the intervention group was also affected by the lag time for measuring QoL between before and after education health. The time lag required to receive, deposit information until by applying very decisively successful QoL improvement. In this study, posttest QoL measured after 3 months of administration health education. Time lags required to carry out the behavioral adoption process.

Correct information about menopause will help menopausal women in adapt to changes that occur and the signs and symptoms that may appear at menopause, able to meet the lifestyle, healthy with proper nutrition, and able to seek health care assistance if there are health problems during the Covid-19 pandemic. Health education in this research also done in small group discussions, training to utilize unused items or objects, training on making herbs to overcome menopausal complaints and menopausal gymnastics exercises in expert tutor.

The result of this research according to research conducted by Rathnayake et.,el (2020) the QoL was significantly impaired among postmenopausal women [mean (SD); 57.47 (18.83)] compared to premenopausal women [mean (SD); 66.82 (17.93)] ( $p<0.001$ ). Psychological symptoms score and somatovegetative symptoms score were associated with the QOL of premenopausal women (adjusted R<sup>2</sup>; 0.35). Somatovegetative symptoms score, psychological symptoms score, moderate and vigorous physical activity scores, and monthly income were associated with the QOL in postmenopausal women (adjusted R<sup>2</sup>; 0.38).<sup>[16]</sup> Another study conducted on women during the climacteric period found the value of the average quality of life for the pretest in the intervention group was 51.9 and the posttest was 66.5. Paired t-test showed that there was a difference in the quality of life scores before and after being given health education in the intervention group ( $t = 14.436$ ,  $p = 0.001$ ). But not significant in the control group ( $t = 1.059$ ,  $p = 0.0295$ ) with changes in quality scores. Based on the results of the study, it can be concluded that the educational program health information about menopause can improve women's quality of life during the climacteric period.<sup>[15]</sup>

This study is a short health education program provided to menopausal women and their husbands using a small sample size and self-reporting of menopausal symptoms considered a limitation. However, some of the strengths of the study include we used a nearly suitable sample for comparison, minimized contact with both groups, used a well designed educational program and followed both groups at the same time of 3 months. The health education provided in the study was recorded in the form of a module so that it was easier for respondents to understand the purpose of education.

#### IV. CONCLUSION

Health education for postmenopausal women for 3 months can improve the QoL for menopausal women during the Covid-19 pandemic. Health education for postmenopausal women during the pandemic as a form of support for health workers for menopausal women to have an understanding of menopause and can increase the degree of menopausal women's health during the Covid-19 pandemic. The degree of health will have an impact on a good QoL.

It is recommended for further researchers to compare the health education model that has been carried out by researchers with other health education models that are suitable for postmenopausal women.

## V. ACKNOWLEDGMENT

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# Intermittent Exercise in Reducing Glucose Levels in Type 2 Diabetes Mellitus Patients

Dhina Widayati<sup>a,1,\*</sup>, Nian Afrian Nuari<sup>b,2</sup>

<sup>a,b</sup> Department Of Nursing, STIKES Karya Husada Kediri, Kediri 64225, Indonesia  
<sup>1</sup>Corresponding author: [dhinawidakh@gmail.com](mailto:dhinawidakh@gmail.com)

## ABSTRACT

*Keywords:*

intermittent exercise \_1

glucose levels \_2

diabetes mellitus \_3

**Background:** Diabetes mellitus (DM) is a metabolic condition marked by a rise in blood glucose levels. Dietary control, exercise, stress management, and anti-diabetic medications are all used to maintain low glucose levels. Intermittent exercise is one type of exercise. This study aims to determine the effect of intermittent exercise on glucose levels in patients with type 2 diabetes.

**Methods:** A pre-experimental approach was adopted in this investigation, with 17 respondents selected through purposive sampling. The independent variable was intermittent exercise, whereas the dependent variable was glucose levels. A glucometer was used to monitor glucose levels before and after the intervention, and the Wilcoxon sign rank test was used to evaluate the results.

**Results:** The results showed that the glucose levels of all respondents (100%) before the intervention were in the hyperglycemic category and after giving the intervention, almost all (88%) were in the normal category. The p value of the statistical test is 0.001 with  $\alpha$  0.05, indicating the effect of intermittent exercise on decreasing glucose levels. Reduced glucose levels can be achieved through two mechanisms: physiologically (intermittent exercise movements require large muscles to actively move and do not require insulin to enter glucose into cells in this condition, because the sensitivity of insulin receptors increases in active muscles, and glucose uptake also increases) and psychologically (exercise activities carried out in a group setting can make a person relaxed, comfortable and more motivated)

**Conclusions:** Intermittent exercise reducing glucose level and can be used as an alternative exercise for patients with Type 2 DM.

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## I. INTRODUCTION

DM (Diabetes Mellitus) is a metabolic disease that is chronic and is characterized by an increase in blood sugar levels. Management of blood sugar levels in patients with type 2 diabetes can be done by implementing the five pillars of managing type 2 diabetes, namely health education, diet, exercise, consumption of antidiabetic drugs and stress management. The success of the five pillars of management can be seen by the stability of blood sugar levels which can be monitored when DM sufferers carry out routine health checks, especially blood sugar checks<sup>(1)</sup>. The number of people with diabetes mellitus in the world reaches 194 million and in 2025 is predicted to increase to 333 million people, half of which occur in developing countries, namely Indonesia. The number

of people with type 2 diabetes mellitus in Indonesia is 5.7% of the population and 1.1% of them died due to type 2 diabetes mellitus<sup>(2)</sup>. WHO estimates that in the next 20 years the number of people with DM will increase to 300 million people<sup>3</sup>. Indonesia ranks fourth in the number of people with diabetes mellitus in the world. In 2016, there were around 5.6 million Indonesians who suffered from diabetes mellitus. The prevalence of diabetes mellitus in Indonesia is occupied by the province of East Java because diabetes mellitus is the top 10 most diseases. According to Riskesdas, the number of people with diabetes mellitus has increased in the last three years, amounting to 330,512 sufferers.

Based on data from the Preliminary Study conducted in the working area of the UPTD Puskesmas Plosoklaten, Kediri Regency, there were 25 people with Diabetes Mellitus in January - March 2021. Further data on physical exercise in 5 people with type II diabetes mellitus showed that 30% of them often did physical exercise, and 70% of them rarely do physical exercise. The pattern of physical exercise has a significant relationship with the value of blood sugar levels, namely, in Type 2 DM patients with excessive activity will be able to improve insulin work, reduce the level of resistance to insulin, leg muscle strength and result in smooth blood circulation in peripheral tissues. It was also shown in a study conducted by Fitri, et al (2014) regarding the description of blood glucose levels of diabetes mellitus (DM) who participated in DM gymnastics at the RSOP. Dr. Sarjito Yogyakarta<sup>(3)</sup> . The results of this study showed that most of the DM exercise participants had decreased blood glucose levels. The essence of the similarity of research conducted with this study shows a decrease in blood sugar levels, if people with diabetes mellitus are given gymnastics or activities.

Skipping breakfast, eating high-fat foods, drinking coffee, infection, lack of sleep, smoking, and taking drugs such as steroids to control asthma, statins to increase cholesterol levels, and diuretics to lower blood pressure can all cause changes in blood sugar levels in people with diabetes mellitus. Some of the variables stated above can cause the patient's blood sugar levels to rise over normal, resulting in dehydration in DM patients<sup>(5)</sup>. Urination is one of the symptoms of high blood sugar. The accumulation of sugar in the blood will trigger the release of urine because the body is trying to clear the sugar. When the kidneys lose glucose through urine, large amounts of water are lost, leading to dehydration. Blood sugar that is getting out of control can lead to complications. Complications of type 2 diabetes include hypoglycemia, diabetic coma, retinopathy, diabetic gangrene that ends in amputation and decreased organ capacity.

The foundation of treatment is based on the usage of five pillars, one of which is exercise, which can be done intermittently. Intermittent exercise can improve muscle sensitivity to insulin, allowing sugar to be stored in the muscles rather of allowing it to accumulate in the bloodstream. Insulin production is largely unaffected in patients with type 2 diabetes; the major issue is a lack of insulin receptor sensitivity to insulin, which prevents insulin from entering the body's cells except the brain. Because insulin receptor sensitivity rises in exercising muscles, they do not require insulin to enter glucose into cells. Therefore intermittent exercise causes a decrease in exogenous insulin, this does not last long, therefore continuous and regular intermittent exercise is needed<sup>6</sup>. When diabetics do intermittent exercise regularly, it will cause an increase in blood flow, causing many capillary nets to open so that more insulin receptors are available, and insulin works more actively which will affect the decrease in blood glucose levels in patients with diabetes mellitus<sup>(7)</sup>. The mechanism of changes in blood sugar levels of people with diabetes mellitus where people with diabetes mellitus can do intermittent exercise adjusted to the patient's physical status, light but regularly carried out by jogging in a relaxed manner. People with diabetes mellitus can do intermittent exercise in the yard/front of the house in the morning and evening in order to get a fitter body and is also part of the treatment of diabetes mellitus. The effect of intermittent exercise on reducing blood sugar in this study is assumed that when people with diabetes mellitus perform intermittent exercise, there is an increase in the body's fuel requirements by active muscles, and complex body reactions occur including circulation, metabolism, hormonal and autonomic nervous system functions<sup>8</sup>. The energy needed during intermittent exercise mainly comes from glucose and free fatty acids. At the beginning of intermittent exercise, these two materials are the main sources, but the use of glucose at this stage is faster. Energy at the beginning of intermittent exercise comes

from muscle ATP (Adenosine Triphosphat) and PC (Phosphocreatin) reserves, after that it is obtained from muscle glycogen reserves, then glucose is used. If intermittent exercise continues, energy is obtained from glucose which is obtained from the breakdown of hepatic glycogen stores (glucogenolysis). If intermittent exercise lasts more than 30 minutes, the main source of energy is free fatty acids, derived from lipolysis of adipose tissue (glucose sparing). The availability of glucose and free fatty acids is regulated by various hormones, especially insulin, catecholamines, cortisol, glucagon, and growth hormone. Changes in hormonal regulation during intermittent exercise depend on the duration and severity of intermittent exercise. In the post-exercise recovery phase, there is a replenishment of muscle and liver glycogen reserves. Charging time depends on how heavy or light the exercise is. Intermittent exercise regularly can maintain body fitness and lose weight and improve insulin sensitivity, so that it will improve blood glucose control mechanisms. This study aims to determine the effect of intermittent exercise on blood sugar levels in Type 2 DM patients.

## II. METHOD

This research employed a pre-experimental design. Purposive sampling yielded a sample size of 17 participants. Patients with diabetes mellitus (DM) with blood glucose levels of 200-400 g/dl, no lesions on the feet or hands, and a maximum age of 60 years were eligible. DM patients with hypertension who were using anti-diabetic medicines and DM patients who were unable to carry out activities due to other conditions were excluded from this study (decompensation cordis). Intermittent Exercise is the independent variable, while Intermittent Exercise is the dependent variable (random blood sugar levels). Intermittent exercise is performed three times a week for two weeks, with each session lasting 30 minutes. Data on random blood sugar levels were measured using a Blood Glucometer. Data analysis using paired t test.

## III. RESULTS AND DISCUSSION

### Information of a general nature

Recapitulation of All Respondents' Socio-Demographic Characteristics

Table 1: Recapitulation of All Respondents' Socio-Demographic Characteristics

	Karakteristik Responden	Frekuensi	Prosentase (%)
Age	30-40 years	3	18
	41-50 years	5	29
	51-60 years	9	53
	Total	17	100
Gender	Male	15	88
	Female	2	12
	Total	17	100
Education	No education	1	6
	Elementary School	5	29
	Junior High School	8	47
	Senior High School	3	18
	Diploma/PT	0	0
	Total	17	100
Religion	Moslem	17	100
	Christian	0	0
	Hindu	0	0
	Budha	0	0
	Total	17	100
History of Diabetes Mellitus	>3 years	9	53
	1-3 years	5	29
	< 1 years	3	18
		17	100

According to table 1, some respondents (53%) are 51-60 years old, the majority of respondents

(88%) are male, almost all respondents (47%) have a history of junior high school education, all respondents (100%) are Muslim, and some respondents (53%) have been diagnosed with diabetes for more than three years.

## Special Data

### 1. Identification of Blood Sugar Levels Before Giving Intermittent Exercise to Patients with Diabetes Mellitus

Table 2. Random Blood Sugar Levels Before Giving Intermittent Exercise to Diabetes Mellitus Patients

No	Blood Level	Frequency	Percent (%)
1.	< 200 mg/dL	0	0
2.	200-300 mg/dL	12	71
3.	> 300 mg/dL	5	29
Amount		17	100%

Data on respondents' random blood sugar levels before the Intermittent Exercise intervention revealed that the majority of them (71%) had a value of 200-300 mg/dL. If the usual value limit for random blood sugar levels is 200 mg/dL, then all responders have random blood sugar levels that fall into the hyperglycemic category.

According to the findings, all respondents had a history of diabetes, with the highest random blood sugar level being 330mg/dl and the lowest being 200mg/dl. According to the age characteristics of respondents, the majority of respondents are 51-60 years old, accounting for 53 percent of all respondents. This is owing to the fact that as people become older, their insulin sensitivity declines. In every decade of life, the risk of diabetes rises with increasing age<sup>(10)</sup>. Individual changes can also alter the endocrine system, namely the ductless gland control system, which generates hormones that circulate in the bloodstream and affect other organs. Similarly to the neurological system, the endocrine system permits distant areas of the body to communicate with one another<sup>(9)</sup>. The endocrine system is made up of three parts: endocrine glands that release chemical intermediates into the bloodstream, hormones that are chemical intermediates, and target cells or organs that respond to the hormone. Enzymes that are substantially influenced by the aging process influence practically all hormone generation and secretion in the field of endocrinology<sup>(10)</sup>. Diabetes mellitus that develops as people get older includes a wide range of symptoms, from asymptomatic to serious problems that can resemble the disease or changes that are prevalent in the elderly<sup>(11)</sup>.

Gender characteristics of respondents, it is known that practically all respondents are male, accounting for up to 88 percent of all respondents. Diabetes is a group of chronic metabolic illnesses caused by the pancreas failing to produce enough insulin, leading to absolute and relative insulin shortage and an increase in blood glucose levels. Insulin is critical for controlling blood glucose levels and coordinating energy utilization by tissues. If insulin is not present or is not recognized by receptors on the cell surface, glucose cannot enter the bloodstream, resulting in an increase in blood sugar levels or hyperglycemia<sup>(12)</sup>. Food intake patterns / diet are also linked to elevated blood sugar levels. In a male, it's the same as drinking a lot of coffee or sugary drinks with a lot of sugar. This is one of the factors that causes blood sugar levels to rise<sup>(13)</sup>.

Respondent characteristics based on education, it is known that over half of the respondents have a junior high school education level, accounting for 47 percent of all respondents. Individuals with a history of secondary education are presumed to have the ability and self-awareness to acquire health information, particularly regarding blood sugar management, hence the maximum random blood sugar level in this study was 330 mg/dL.

## 1. Identification of Random Blood Sugar Levels After Intermittent Exercise for Diabetes Mellitus Patients

Table.2 Random Blood Sugar Levels After Intermittent Exercise in Diabetes Mellitus Patients

No	Blood Level	Frequency	Percent (%)
1.	< 200 mg/dL	15	88
2.	200-300 mg/dL	1	6
3.	> 300 mg/dL	1	6
Jumlah		17	100%

The majority of responders (88%) had KGD levels of less than 200 mg/dl or were in the normal range, according to data on random blood sugar values after Intermittent Exercise intervention.

The amount of glucose in the blood plasma is referred to as blood sugar level. Blood glucose levels can be checked when the patient is fasting or when the patient comes in for a check, with the results of monitoring blood glucose levels being > 200 mg/dl, moderate for fasting glucose levels > 126 mg/dl<sup>(14)</sup>. Physical activity, according to several studies and scientific specialists, can extend a person's life expectancy. Two to three times a week, for example, is a good amount of physical activity. Intermittent exercise can aid in the management and prevention of diabetes. An unhealthy lifestyle and being overweight have both been linked to an increased risk of diabetes. Exercising and living a healthy lifestyle can help prevent this<sup>(14)</sup>.

In the elderly, intermittent exercise has been shown to lower blood sugar levels. This is due to the fact that when the elderly engage in intermittent exercise, carbohydrates are burned through energy metabolism, which adds to the rate of energy production in the body, resulting in a fall in blood sugar levels<sup>(15)</sup>. Blood sugar levels might be caused by a poor diet, antidiabetic medicines, age, or a lack of activity<sup>1</sup>. In addition to swimming, intermittent exercise is a sport with a high aerobic value. Intermittent exercise, which is an aerobic activity, can help to improve and maintain the heart's, lungs', blood circulation, and leg muscles and joints' health and fitness. Intermittent exercise is a moderate-intensity aerobic activity. This exercise is beneficial to endurance, health, and fitness. In this athletic activity, endurance takes precedence above speed. Physical activity that is done in short, steady, and calm steps. Breathe naturally and in sync with your footsteps when running<sup>(6)</sup>.

## 2. Identification of the Effect of Intermittent Exercise on Blood Sugar Levels in Type 2 Diabetes Mellitus Patients

Table 3 Cross-tabulation of random blood sugar levels in DM patients before and after the Intermittent Exercise Intervention

Intermittent Exercise	Criteria						N	Mean	Std. Deviation			
	< 200		200-300		> 300							
	F	%	F	%	F	%						
Pre Test	0	0	12	71	5	29	17	272.18	43.119			
Post test	1 5	8 8	1	6	1	6	17	257.00	43.061			
P value 0.001	a < 0.05		L= 0,344									

According to the cross tabulation table above, all respondents (100%) had random blood sugar levels >200 mg/dl prior to doing intermittent activity. The majority of responders (88%) had random blood sugar readings of less than 200 mg/dl after doing intermittent activity. The effect of intermittent exercise on changes in random blood sugar levels in patients with type 2 diabetes was shown by data analysis using a paired t test with a level of significance (= 0.05),

which also indicated the effect of intermittent exercise on increasing blood sugar levels in patients with diabetes mellitus. Intermittent activity increases the body's need for fuel by active muscles, as well as complicated bodily processes such as circulation, metabolic, hormonal, and autonomic nervous system functioning in patients with diabetes mellitus. Glucose and free fatty acids provide the majority of the energy required during intermittent exercise. These two materials are the primary sources of energy at the start of physical activity, but glucose is used more quickly at this stage. Energy is derived from muscle ATP (Adenosine Triphosphate) and PC (Phosphocreatin) reserves at the start of intermittent exercise, then from muscle glycogen reserves, and finally from glucose <sup>(6)</sup>.

According to Ilyas in Soegondo (2017), jogging frequently causes an increase in blood flow, which causes numerous capillary nets to open, allowing more insulin receptors to be available and insulin to work more actively, resulting in a fall in blood glucose levels. patients with diabetes <sup>7</sup>.

#### IV. CONCLUSION

The blood sugar value of the majority of the elderly did not alter prior to intermittent activity. After running, the blood sugar of the majority of the elderly changes. In senior adults with diabetes mellitus, jogging has an effect on variations in blood sugar levels.) Reduced glucose levels can be achieved through two mechanisms: physiologically (intermittent exercise movements require large muscles to actively move and do not require insulin to enter glucose into cells in this condition, because the sensitivity of insulin receptors increases in active muscles, and glucose uptake also increases) and psychologically (intermittent exercise movements require large muscles to actively move and do not require insulin to enter glucose into cells in this condition) and psychologically (intermittent exercise movements require large muscles to actively move and do not require insulin to enter glucose into cells (exercise activities carried out in a group setting can make a person relaxed, comfortable and more motivated). Intermittent exercise can be a good alternative for those with Type 2 diabetes.

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# Literature Review : Covid 19 & Pregnancy

Ita Eko Suparni<sup>a1\*</sup>

Departement of midwifery , STIKES Karya Husada Kediri

\* Corresponding author: E-mail: ita.sekar@gmail.com

## A B S T R A C T

*Keywords:*  
Covid 19\_1  
Pregnancy\_2  
Prevention\_3  
Transmission\_4

**Background:** The current non-natural disaster, namely Covid 19, has had an impact on increasing the number of maternal and infant deaths. This is because the new variant of Covid 19 is susceptible to infecting pregnant women which can cause complications and even death for both mother and baby. So far, information about COVID-19 in pregnant women is still limited. This literature study aims to identify pregnancies with COVID-19 and its prevention efforts in pregnancy

**Methods:** The research method is a literature review, which collects and analyzes data on pregnancy with COVID-19 in pregnant women for 1 year and efforts to prevent the COVID-19 pandemic in pregnancy through Google Scholar, PubMed, Springer and Lancet databases. Use keywords; Pregnancy, Covid 19, prevention, transmission,

**Results:** Covid 19 increases the risk of preterm delivery and other pregnancy complications. Vaccination during pregnancy will prevent pregnant women with severe symptoms when exposed to COVID-19. Preventive measures for COVID-19 include general precautions, including diligent hand washing, proper wearing of masks, vaccinations, social distancing, regular exercise, and good nutrition. eat a balanced and nutritious diet.

**Conclusion:** COVID-19 cases in pregnant women are under control, but preventive measures need to be taken to better control the spread of COVID-19.

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## I. INTRODUCTION

Coronavirus disease 2019 (COVID19) is caused by coronavirus 2 (SARSCoV2) with symptoms of severe acute respiratory syndrome. This virus first appeared in Wuhan, Hubei, China in December 2019 <sup>(1)</sup>. COVID19 is caused by a very dangerous virus that spreads very quickly, in Indonesia it is spread in all regions. The World Health Organization (WHO) has confirmed that COVID19 is a pandemic and in Indonesia COVID19 has been declared a national disaster <sup>(2)</sup>. The current non-natural disaster, namely Covid 19, has had an impact on increasing the number of maternal and infant deaths. This is because the new variant of Covid 19 is prone to infecting pregnant women which can cause complications and even death for both mother and baby.

COVID-19 attacks all ages, including vulnerable groups, one of which is pregnant women. During pregnancy, there are physiological changes in the mother's body and immunity that lead to increased susceptibility to infectious diseases <sup>(3)</sup>. COVID19 can affect anyone, regardless of age, coexistence conditions, and gender, including pregnant women. <sup>(4)</sup> Typical symptoms that appear include fever >38°C, shortness of breath, cough, diarrhea, fatigue, muscle aches, and other respiratory tract symptoms. <sup>(5)</sup>. According to POGI (2020) mild symptoms occur in some cases, even without fever.

According to an updated report on November 9, 2021, the number of confirmed cases of COVID19 in Indonesia is 4,248,843 cases with 143,578 cases dying. (Covid Task Force 19, 2021) The results of the publication of epidemiological research on COVID-19 in pregnancy are still minimal.

The existence of this virus is a big challenge faced in efforts to reduce maternal mortality, so it must receive attention.<sup>(6)</sup>

Elshafeey, et al's study of 385 pregnant women infected with COVID-19, 36 of whom were confirmed positive through the results of the RTPCR test. Up to 7.5% of pregnant women infected with COVID 19 have no symptoms related to COVID19 . Transmission of COVID19 can occur from person to person (WHO, 2020a). However, in the case of pregnancy, several studies are still being carried out to determine the transmission of COVID19 from mother to fetus<sup>(7)</sup>.

Several studies reveal cases of pregnancy complications that occur in mothers infected with COVID19. Pneumonia that occurs during pregnancy is associated with several obstetric disorders, including premature rupture of membranes, fetal death in the womb, intrauterine growth disorders, and neonatal death<sup>(8)</sup>. Chen et al studied nine pregnant women infected with COVID-19 in the third trimester, four of whom gave birth prematurely at 36 weeks' gestation and two babies were born with low birth weight. In addition, there were two other cases showing fetal distress and premature rupture of membranes<sup>(9)</sup>. Another study by Elshafeey, et al mentioned 368 pregnant women including mild cases, 1 severe case, and 3 more critical cases. At the time of delivery, each of 20 cases of fetal distress and low birth weight were reported. The study also showed that out of 256 births, there were two cases of infant mortality and four children tested positive based on the PCR test results<sup>(10)</sup>.

Previous coronavirus studies (SARSCoV and MERSCoV) have shown that pregnant women have a greater risk of serious illness, morbidity and mortality than the general population . Morbidity and mortality due to the Covid 19 virus in pregnant women can be prevented by various efforts, namely diligent hand washing, wearing masks properly, vaccinations, maintaining distance, exercising regularly, fulfilling good nutrition by eating a balanced and nutritious diet. There are very few studies that discuss prevention and transmission in pregnant women with Covid 19.<sup>(11,12)</sup>

Based on this, it is necessary to arrange a literature review on efforts to prevent and transmit pregnant women with COVID-19.

## II. METHOD

This type of research was a literature study method. Literature studies are a way for researchers to summarize various studies on certain topics. Types of data sources in this study are using secondary data types, where the data comes from the results of research that has been done previously and the data sources have met both the criteria inclusion as well as from the exclusion criteria that have been set by the researcher. The inclusion criteria referred to in this study include articles in Indonesian and English, containing material on the Prevention and Transmission of COVID-19 in pregnant women, full text articles and can be downloaded, derived from the Google Scholar database with a time span of 2020-2021. The exclusion criteria for this study were articles that discussed other types of viruses other than COVID-19.

The data collection carried out by the researcher was by doing a search on the Google Scholar, Pubmed and Lancet Databases, with the keywords "COVID-19, Pregnancy, Prevention and transmission". The data that has been obtained are compiled, analyzed, and concluded.

## III. RESULTS AND DISCUSSION

### a. Result

The data collected after a literature search was carried out using the keywords "COVID-19 and Pregnancy", Prevention and Transmission were obtained as many as 32 articles. From 32 articles, 12 articles were found that were suitable for analysis.

Table 1. Result of Literature Review

No	Title	Author	Result
1	POGI recommendations for pregnant women with Covid 19	POGI,2020	Getting vaccinated will prevent pregnant women with severe symptoms when exposed to COVID-19

No	Title	Author	Result
2	Guidelines for pregnant women, maternity and postpartum and newborns in the era of the covid 19 pandemic	Ministry of Health, 2020	First pregnancy checkup, with a time contract with a doctor don't have to wait long. Pregnant women are expected to always maintain health with balanced nutritional foods, maintain personal hygiene and physical activity so that mothers stay fit and healthy
3	COVID-19 Vaccination in Pregnancy: The Benefits Outweigh the Risks	Chavan Monica et al, 2021	Vaccination therefore has a high likelihood of preventing severe COVID-19 infection and its adverse effects in both pregnant patients and their neonates. The risks of administering COVID-19 vaccines during pregnancy appear to be minimal.
4	POGI recommendations for pregnant women with Covid 19	POGI, 2020	It is recommended to perform at least 6 face-to-face prenatal check-ups during pregnancy. Apart from the status of the COVID-19 zone in the area, remote medical check-ups can also be carried out as needed
5	Preventive measures and management of COVID-19 in pregnancy	Omer et al, 2020 <sup>(13)</sup>	Method of preventing infection by wearing a mask. Medical masks can significantly reduce exposure to COVID-19.
6	Adverse effects of COVID-19 messenger RNA vaccines among pregnant women: a cross-sectional study on healthcare workers with detailed self-reported symptoms	Renuka et al, 2021 <sup>(14)</sup>	Prenatal vaccination is vital to prevent COVID-19 morbidity in the pregnant patient and to protect neonates via passive immunity.
7	Risks of Novel Coronavirus Disease (COVID-19) in Pregnancy;	Panahi et al, 2020 <sup>(15)</sup>	No direct studies have reported the possibility of vertical transmission of COVID-19 from mother to fetus to date. However, they should avoid breastfeeding directly until it is confirmed that they are not infected with COVID-19
8	Pregnant women with COVID-19 and risk of adverse birth outcomes and maternal-fetal vertical transmission	Yang R et al, 2020 <sup>(16)</sup>	(16)COVID-19 during the later pregnancy is associated with an increased risk of adverse birth outcomes, including iatrogenic preterm birth and cesarean section delivery. The research of Yang R et al (2020) demonstrated that pregnant women with COVID-19 were more likely to have preterm birth babies

## b. Discussion

### 1. PREVENTION

Recommendations for handling COVID-19 during pregnancy by POGI (2020) are isolation or quarantine, follow-up screening, oxygen administration, avoidance of

excessive fluid administration, empirical treatment with antibiotics., carry out a Covid 19 test. The best way to prevent infection is to avoid exposure to disease-causing viruses. Take steps to prevent the spread of daily life <sup>(1,2)</sup>.

The use of personal protective equipment must be consistent, correct and appropriate to reduce the spread of pathogens. Effective medical masks can be used with caution. The mask must cover the nose and mouth. The use of cloth masks is not recommended. The use of a mask, excluding some simple home-made ones, significantly reduces the spread of humidity. However, their effectiveness is device specific and needs to be considered in greater detail for each type of mask, especially the direction of escaping air when forward flow is blocked.<sup>(1,17)</sup>

In addition, personal hygiene such as hand washing is very necessary. Studies show that COVID 19 can survive up to 9 days in the air or on the ground. In addition, 6.271% alcohol, 0.5% hydrogen peroxide, or 0.1% sodium hypochlorite can kill COVID 19 within 1 minute <sup>(18)</sup>. Wash hands with soap and water for at least 20 seconds. If soap and water are not available, use an alcohol-based hand sanitizer that contains at least 70% alcohol. Wash your hands, especially after defecating and urinating , and want to eat.<sup>(1,6)</sup>

Prenatal care (ANC) must be carried out on women to ensure that the fetus and mother are healthy and ready to give birth <sup>(19)</sup>. Prenatal care is very important. Pregnant women who do not receive prenatal care have a higher risk of maternal death and experience other pregnancy complications such as preeclampsia, anemia, diabetes, delayed fetal development, and asymptomatic urinary tract infections .It is recommended to perform at least 6 face-to-face prenatal check-ups during pregnancy. Apart from the status of the COVID-19 zone in the area, remote medical check-ups can also be carried out as needed <sup>(7)</sup>.

Protecting the mother against infection is a primary benefit, pregnancy functionally immunosuppresses a patient and places added stress on cardiopulmonary systems. Secondary benefits to the fetus include prevention of complications during delivery and the transmission of protective antibodies transplacental and through breastfeeding. Vaccination therefore has a high likelihood of preventing severe COVID-19 infection and its adverse effects in both pregnant patients and their neonates. COVID-19 vaccination can be offered at any gestational age. Although antibody availability may be greatest for the neonate with vaccination later in gestation, maternal morbidity and mortality can occur throughout pregnancy. Vaccination thus confers the greatest benefit as soon as it is available to the mother and should not be delayed. For those attempting to become pregnant, there is no evidence that COVID-19 vaccines affect fertility, and vaccination need not be postponed.<sup>(7, 12)</sup>

## 2. Transmission

SARS-CoV-2 can be transmitted from the mother to the fetus. We demonstrate the transplacental transmission of SARS-CoV-2 in a neonate born to a mother infected in the last trimester and presenting with neurological compromise. The transmission is

confirmed by comprehensive virological and pathological investigations. In detail, SARS-CoV-2 causes: (1) maternal viremia, (2) placental infection demonstrated by immunohistochemistry and very high viral load; placental inflammation, as shown by histological examination and immunohistochemistry, and neonatal viremia following placental infection. The neonate is studied clinically, through imaging, and followed up. The neonate presented with neurological manifestations, similar to those described in adult patients.<sup>(21)</sup>

COVID-19 during the later pregnancy is associated with an increased risk of adverse birth outcomes, including iatrogenic preterm birth and cesarean section delivery. The research of Yang R et al demonstrated that pregnant women with COVID-19 were more likely to have preterm birth babies. Considering all preterm babies were born to infected mothers were iatrogenic preterm birth due to intrauterine fetal distress, we examined the possibility that the elevated risk for preterm birth resulted from higher rates of elective and early cesarean sections , the positive association still exists among mothers with cesarean section. Previous studies have also shown that SARS and Middle East respiratory syndrome (MERS) infections are related to preterm birth, intensive care treatment for newborns, and even perinatal death . A higher rate of cesarean section was found among the infected mothers in the present study; the odds of cesarean births were three times or greater among women with COVID-19 compared to those without COVID-19. However, only when there were indications posed by SARS-CoV-2 infection to pregnant women or fetuses, such as maternal breathlessness and related complications as well as fetal intrauterine distress, cesarean sections were performed as needed. Thus, those symptoms of COVID-19 have contributed to the high rate of cesarean section among the infected mothers.<sup>(16)</sup>

The pregnant women with COVID-19 may be at increased risk of adverse pregnancy and birth outcomes and low risk of congenital transmission The most frequent COVID-19 clinical findings during pregnancy were fever (28–100%), mild respiratory symptoms (20–79%), raised C-reactive protein (28–96%), lymphopenia (34–80%), and pneumonia signs in diagnostic imaging (7–99%). The most frequent maternal outcomes were C-section (23–96%) and preterm delivery (14–64%). Most of their babies were asymptomatic (16–93%) or presented fever (0–50%), low birth weight (5–43%) or preterm delivery (2–69%). The odds ratio (OR) of receiving invasive ventilation for COVID-19 versus non-COVID-19 pregnant women was 1.88 (95% Confidence Interval [CI] 1.36–2.60) and the OR that their babies were admitted to neonatal intensive care unit was 3.13 (95%CI 2.05–4.78). The risk of congenital transmission or via breast milk was estimated to be low, but close contacts may carry risks.<sup>(21)</sup>

Swartz DA ( 2020 ) analyzes literature describing 38 pregnant women with COVID-19 and their newborns in China to assess the effects of SARS-CoV-2 on the mothers and infants including clinical, laboratory and virologic data, and the

transmissibility of the virus from mother to fetus. This analysis reveals that unlike coronavirus infections of pregnant women caused by SARS and MERS, in these 38 pregnant women COVID-19 did not lead to maternal deaths. Importantly, and similar to pregnancies with SARS and MERS, there were no confirmed cases of intrauterine transmission of SARS-CoV-2 from mothers with COVID-19 to their fetuses. All neonatal specimens tested, including in some cases placentas, were negative by rt-PCR for SARS-CoV-2. At this point in the global pandemic of COVID-19 infection there is no evidence that SARS-CoV-2 undergoes intrauterine or transplacental transmission from infected pregnant women to their fetuses. Analysis of additional cases is necessary to determine if this remains true.<sup>(8,20)</sup>

#### IV. CONCLUSION

Pregnant women with COVID-19 may be at increased risk of adverse pregnancy and birth outcomes and low risk of congenital transmission. COVID-19 cases in pregnant women are under control, but preventive measures need to be taken to better control the spread of COVID-19.

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# Aspects of Spirituality with People's Stress Levels During the Covid-19 Pandemic

Wahyu Tanoto<sup>a,1,\*</sup>, Nurul Laili<sup>b,2</sup>, Sutiyah Heni<sup>c,3</sup>

<sup>a,b,c</sup> STIKES Karya Husada Kediri, Jl. Soekarno Hatta No. 7 Pare Kediri, Indonesia

\* Corresponding author: wahyu.tanoto.ui@gmail.com

## ABSTRACT

*Keywords:*  
Covid-19 Pandemic\_1  
Spiritual Aspect \_2  
Stress Level \_3

**Introduction :** The widespread spread of COVID-19 has an impact on people's mental health which makes individuals easily stressed. Stress is a non-specific response of the body to the load stimulus and the pattern of reaction and adaptation. One aspect of the source of hope to overcome stress is the aspect of spirituality or religion. Spirituality is a belief in God Almighty related to the psyche. The purpose of this study was to identify the relationship between aspects of spirituality and the stress level of society during the COVID-19 pandemic.

**Method :** In the following cross-sectional study involving 65 respondents in the area of Pare Kediri, using purposive sampling technique and the instrument used is a questionnaire.

**Results :** The results of the 2x3 chi-square test showed that there was a significant relationship between aspects of spirituality and the level of stress in the community in the Pare Kediri area with the results (*p*-value 0.000;  $\alpha = 0.05$ ).

**Analysis :** The level of public stress during the COVID-19 pandemic is closely related to how individuals can fulfill their spiritual needs in a complete way.

**Conclusion :** The results of the study state that with the spirituality aspect being fulfilled, it will make the stress level lighter and it is hoped that the community can always have the spirituality aspect fulfilled as individual coping and effective adaptation to minimize stress levels in the community during the covid-19 pandemic.

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## I. INTRODUCTION

At the end of 2019, the world was shocked by the presence of a new virus, namely a new type of coronavirus (SARS-CoV-2) and the disease is called Covid-19 (Coronavirus Disease 2019). The origin of this virus is known from Wuhan, China. The virus was discovered in late December 2019 <sup>[1]</sup>. This disease is an infectious disease with symptoms of fever, cough and shortness of breath and has the fastest incubation period of 4-5 days and the longest 14 days. Severe symptoms can lead to pneumonia, acute respiratory syndrome, kidney failure and even death. This disease has a higher rate of spread than previous viral diseases, such as SARS and MERS <sup>[2]</sup>.

Data in Indonesia on August 18, 2020, ranked 23 in the world with a total of 143,043 confirmed cases, 6,277 deaths and 96,306 recovered patients. The number of Covid-19 cases in Kediri Regency is increasing. On August 18, 2020 there were 564 confirmed people, the total who recovered reached 398 and 30 people died <sup>[3]</sup>. The Kediri Regency Government continues to urge the public to continue to be careful and implement health protocols, considering the increasing number of new clusters of the spread of Covid-19 <sup>[4]</sup>.

Characteristics of the rapid and high rate of spread of COVID-19, this has resulted in the number of deaths caused by Covid-19 increasing throughout the world <sup>[5]</sup>. The process of spreading COVID-19 which is increasingly widespread and evenly distributed throughout the world can affect various aspects, including social, economic,

physical and psychological conditions <sup>[6]</sup>. The psychological problem that is most often experienced is increased stress, this condition is because during the covid-19 pandemic, people must accept and are required to comply with all the rules that have been set by the government with all limitations and also have to face the ferocity of covid-19 which every second can be exposed <sup>[7]</sup>. This situation is in line with Horesh & Brown's (2020) research which explains that COVID-19 is at risk of causing several problems that cause stress for each individual <sup>[8]</sup>.

Emotional changes, such as worry, anxiety and stress are responses when a person feels there is a threat in his life, one of which is an epidemic or pandemic. Emotional responses such as stress are a form of self-defense mechanism or a sign that there is a threat being faced <sup>[10]</sup>. Stress is a non-specific response of the body to any load demands and general patterns of reactions and adaptations. The pattern of reactions to stressors can come from within and outside the individual concerned, which is real and not real <sup>[11]</sup>.

The Association of Indonesian Mental Medicine Specialists (PDSKJI) conducted a survey on psychological problems during the Covid-19 pandemic through an online self-examination. There are 64.3% of 1,522 respondents have psychological problems due to the impact of the Covid-19 pandemic. Most of the 1,522 respondents came from West Java, 23.4%, DKI Jakarta 16.9%, Central Java 15.5%, and East Java 12.8%. Most respondents have symptoms of psychological post-traumatic stress due to experiencing or witnessing unpleasant events related to Covid-19 <sup>[18]</sup>. Furthermore, there are 53.8% of people who feel the impact of psychological conditions such as depression, anxiety and stress due to COVID-19 <sup>[12]</sup>.

The level of stress experienced by each person is certainly different and each person has a different strategy in dealing with the stress experienced, namely one way to deal with stress is to get closer to God Almighty or further increase his spirituality. In line with research conducted by Makhija in 2002, it was explained that if a person experiences excessive suffering, the means to relieve it is to draw closer to God Almighty <sup>[13]</sup>. Religion and spirituality are useful for alleviating pain, suffering and stress levels by each individual <sup>[14]</sup>.

Spirituality is a belief in a relationship with the Almighty and a life force that is useful for society and a pluralistic environment without losing self-identity <sup>[12]</sup>. Spirituality is a broad concept with various dimensions and perspectives characterized by a feeling of attachment (connection) to something greater than ourselves, which is accompanied by an attempt to find meaning in life or can be explained as a universal and touching experience. Some individuals describe spirituality in their life experiences as a feeling of connectedness that is sacred and reassuring, while other individuals feel peace when they are in a mosque, church, temple or other holy place <sup>[15]</sup>. Spirituality is an important factor that helps individuals achieve the balance needed to maintain health and well-being, as well as adapt to illness <sup>[16]</sup>.

Research by connecting aspects of spirituality and stress levels needs to be done in the community during the covid-19 pandemic. Until now, research on aspects of spirituality and stress levels in society during the pandemic is still independent. The purpose of this study was to identify the spiritual aspect with the level of stress in the community during the covid-19 pandemic. The hypothesis in this study is that there is a relationship between the spiritual aspect and the level of stress in society.

## II. METHOD

In this study, the data collection method was cross sectional. The following cross-sectional study was conducted involving as many as 65 respondents in the community living in the area of Pare Kediri. The process of determining the sampling using purposive sampling technique. The independent variable in this study is the aspect of spirituality and the dependent variable in this study is the level of stress. The research process is carried out online (in the network) or online and the instrument used is a questionnaire.

The measurement of the spiritual aspect variable in this study used a standard Spiritual Assessment Scale (SAS) questionnaire containing 21 question items and 5 answer choices using a Likert scale. Furthermore, the measurement of the stress level variable was measured using a Perceived Stress Scale (PSS) questionnaire which is a psychological instrument commonly used to measure stress levels. The type of test used for bivariate analysis of the relationship between aspects of spirituality and stress level is the chi-square test table 2 x K. The data analysis process is carried out using computerized techniques.

### III. RESULTS AND DISCUSSION

Table 1.1 Distribution of Respondents by Age, Gender, Education Level, Occupation, Living Together, Places of Worship, Spiritual Solutions, Kediri Covid-19 Information, June 2021 (n=65)

Variable	Frequency	%
Age :		
20-30	28	43,1
31-40	30	46,2
41-50	7	10,8
51-60	0	0
Gender :		
Male	27	41,5
Female	38	58,5
Education Level :		
No School	0	0
Elementary School	0	0
Junior High School	0	0
Senior High School	43	66,2
University	22	33,8
Occupation :		
Not Work	8	12,3
Farmer	0	0
Entrepreneur	12	18,5
Private Employees	32	49,2
Government Employees	13	20
Living Together :		
Big family	43	66,2
Husband/Wife & Kids	13	20
Child	9	13,8
Place of worship :		
Home	41	63,1
Worship place	24	36,9
Worship Solution :		
Join Online Recitations	7	10,8
Communion with Family	25	38,5
Closer to Allah SWT	33	50,8
Covid-19 Information		
Social media	47	72,3
Electronic Media	18	27,7
Print media	0	0

Table 1.1 shows that almost half of the respondents are between the ages of 31-40 years, as many as 30 respondents (46.2%), while for gender data, it is found that most of the respondents are female, which is 38 respondents (58, 5%) and the level of education also shows that most of the respondents have high school education with a total of 43 respondents (66.2%). The employment data shows that almost half of the 32 respondents (49.2%) have jobs as private employees and most of the respondents have lived with their families, namely 43 respondents (66.2%), while most of the respondents have 41 respondents (63.1%), chose a house as a place of worship, and also most of the respondents chose to be closer to Allah SWT as many as 33 respondents (50.8%). Information about COVID-19 shows that most of the respondents received information from social media as many as 47 respondents (72.3%).

Table 1.2 Distribution of Respondents Based on Community Spiritual Aspects in Pare Kediri Region, June 2021 (n=65)

Variable	Frequency	%
Spiritual Aspect:		
fulfilled	39	60
Not fulfilled	26	40

Table 1.2 shows that the spiritual aspect of the community is mostly fulfilled with 39 respondents (60%).

Table 1.3 Distribution of Respondents Based on Community Stress Levels in the Pare Kediri Region, June 2021 (n=65)

Variable	frequency	%
Stress Level:		
Light	29	44,6
Currently	23	35,4
Heavy	13	20

Table 1.3 shows that the level of stress in the community is almost half of the respondents with a total of 29 respondents (44.6%) having stress levels in the mild category.

Table 1.4 Results of Chi-Square Test Aspects of Spirituality with Community Stress Levels in the Pare Kediri Region, June 2021 (n=65)

Spiritual Aspect	Stress Level						f	% 100	p-value			
	Light		Currently		Heavy							
	n	%	n	%	n	%						
Fulfilled	28	96,6	11	47,8	0	0	39	100	0.000			
Not Fulfilled	1	3,4	12	52,2	13	100	26	100				
Total	29		23		13		65					

From the results of the analysis in table 1.4, it shows that almost all respondents, totaling 28 respondents (96.6%) with the spirituality aspect being fulfilled experienced mild stress levels and a small proportion of respondents, totaling 1 respondent (3.4%) with the spirituality aspect not being met as well. experience low levels of stress. The results of statistical tests showed that there was a significant relationship between aspects of spirituality and the level of stress in the community in the Pare area with the results (p-value 0.000; = 0.05).

The results of the study show that there is a significant relationship between aspects of spirituality and stress levels, this can be explained that according to Jarnawi (2020) anxiety during the Covid-19 pandemic comes in various forms including fear of death, this happens because of seeing the death rate due to Covid -19 which is getting bigger by the day [17]. Fear of getting infected with Covid-19 or infecting other people. Worried about losing jobs/income due to restrictions on going out of the house, Large-Scale Social Restrictions causing business to be empty of buyers, or workplaces being closed, fear of lack of basic foodstuffs due to panic of the whole community who buys basic necessities until they are scarce in the market. Fear of losing relatives, fear of a tense situation; the streets are deserted and there are even areas that impose a curfew, fear of riots, fear of not accepting the deeds of worship due to the ban on Friday prayers, tenacious prayers, feeling more afraid of viruses (creatures) than Allah

(Khalik).

The Covid-19 pandemic has caused some individuals to feel excessive worry or fear. Not infrequently they have suspicion and prejudice against people who have signs of Covid-19 sufferers. This is increasingly making people try to find information about Covid-19, causing excessive anxiety and stress from the public. This situation makes a person have difficulty sleeping, headaches, and other physical disorders. The level of stress in society during a pandemic is influenced by different people's perceptions, this can increase stress in dealing with a pandemic [18]. Stress is a non-specific response of the body to any load demands and general reaction and adaptation patterns. Stress is caused by several factors such as physical and biological factors, psychological factors and environmental factors [19]. One of the individual copings from society to reduce stress levels and can also be used as a treatment technique is spirituality [20].

Spirituality makes a person feel longing and a strong urge to understand various things in life, whether it is related to religion or something else [21]. Many studies have used spirituality as a variable to further explore the benefits of spirituality on health, this is because spirituality is starting to be widely recognized as one of the important elements in the world of health [22]. In spiritual there is a spiritual dimension that functions to maintain harmony or harmony with the outside world, answer or gain strength when facing emotional stress, physical illness, or even death. The spiritual dimension can also grow powers that arise outside of human strength [23].

Spirituality is a core part of the individual beyond religious beliefs and practices, which is related to the uniqueness of the individual and connects the way the mind, body, emotions, relationships with others and with something outside the self, and is an active and positive process related to the search for meaning, purpose, hopes, and principles of life [24]. Crisis and changes in the Covid-19 pandemic situation can strengthen one's spiritual depth. Crisis is often experienced when a person faces illness, suffering, the aging process, loss, and even death, especially in clients with terminal illness or with poor prognosis and the effects of prolonged health changes.

The changes in life and the crises they face are spiritual experiences as well as physical and emotional experiences. The role of spiritual and religious factors correlated with physical health and mental calm which in this case is the level of stress. This is in line with research by Koenig (2012) which explains that aspects of spirituality can affect individual stress levels [25]. Healthy physical and mental conditions may parallel an optimal life and this optimal life is an indicator of self-adjustment ability [22].

Changing a person's condition when facing the Covid-19 pandemic is a spiritual experience and an experience that is both physical and emotional. There is a change, trying to keep meeting spiritual needs. Some people have fear, worry and anxiety when facing changes in the Covid-19 pandemic, feel fear and stress of contracting a virus that leads to death, economic impact, long-term social and educational. Getting closer and having faith in Allah is one way to overcome this. When a person is closer to Allah, he will feel calm and can think positively in the face of changing conditions. Increased belief in Allah allows a person to think and act correctly to overcome the conditions that occur. In a study conducted by Johnson, et al. (2011) have explained that the spiritual well-being experienced by individuals today and religious experiences in the past is closely related to the level of anxiety and depression [26].

#### IV. CONCLUSION

The results showed that there was a significant relationship between the spiritual aspect and the community's stress level during the pandemic, this was indicated by respondents who had the spirituality aspect fulfilled on average they experienced mild stress levels.

#### V. ACKNOWLEDGMENT

It is hoped that the community can have fulfilled spiritual aspects, because then

it can make individual coping and adaptation more effective to minimize stress levels in the community during the covid-19 pandemic.

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# Effect of Elderly Exercise on Blood Pressure of Hypertensive Elderly

Sufendi Hariyanto<sup>\*1</sup>, Andi Yudianto<sup>2</sup>, Zuliani<sup>3</sup>, Kurniawati<sup>4</sup>

Faculty Of Health Sciences, Universitas Pesantren Tinggi Darul Ulum University, Jombang, Indonesia

<sup>1</sup> [sufendihariyanto@fik.unipdu.ac.id](mailto:sufendihariyanto@fik.unipdu.ac.id); <sup>2</sup> [andiyudianto@fik.unipdu.ac.id](mailto:andiyudianto@fik.unipdu.ac.id), <sup>3</sup> [zuliani@fik.unipdu.ac.id](mailto:zuliani@fik.unipdu.ac.id), <sup>4</sup> [kurniawati@fik.unipdu.ac.id](mailto:kurniawati@fik.unipdu.ac.id)

\* Corresponding author

## ABSTRACT

**Keywords:**  
Elderly,  
Exercise,  
Blood pressure of the  
elderly

Blood pressure can increase when one is aged 45 – 55 years old. The artery walls become thick due to the collagen accumulation in the muscle layers. As a result, the blood vessels will gradually narrow and become rigid. Elderly exercise is a mild exercise. It is easy to do without burdensome, which is dedicated to the elderly. The objective of this research is to analyze the effect of the elderly exercise on the blood pressure of the hypertensive elderly at Kalikejambon Village, Tembelang District, Jombang Regency.

This research used the quasi experimental method with the pre-post test design. The population of this study were elderly people with hypertension in Kalikejambon Village, Tembelang District, Jombang Regency. The sample in this study amounted to 32 respondents who were divided into treatment groups and control groups. The data of research were analyzed by using the t-test.

There was an effect of the elderly exercise on the systolic blood pressure and diastolic blood pressure of the hypertensive patients as indicated by the p-value = 0.000.

The health workers are required to conduct socialization and training of the elderly exercise need to socialize and train the performance skill of exercise elderly. So, they can manage the elderly whom have hypertension by using non-pharmacological management to control blood pressure on hypertensive patients.

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## I. INTRODUCTION

Hypertension or high blood pressure is a systolic pressure of more than 140 mmHg and a diastolic blood pressure of more than 90 mmHg. Hypertension is a multifactorial disease that arises due to the interaction of various factors. Increasing age will cause some physiological changes, in the elderly there is an increase in peripheral resistance and sympathetic activity. Blood pressure will increase after the age of 45-55 years, arterial walls will experience thickening by the buildup of collagen substances in the muscle layer, so that blood vessels will gradually narrow to become stiff [1].

The elderly are part of family members and community members whose numbers are increasing in line with the increase in life expectancy. The number of elderly people increased throughout Indonesia to 15.1 million people in 2000 or 7.2% of the entire population with a life expectancy of 64.05 years. In 2006 life expectancy increased to 66.2 years and the number of elderly people to 19 million people, and it is estimated that in 2020 it will be 29 million people or 11.4%. This shows that the number of elderly people consistently increases from time to time [2].

According to the East Java Provincial Health Office, the prevalence of essential hypertension cases in East Java Province in 2011 was 1.96%, a decrease compared to 2010 which was 2.00%. Most people with hypertension are in rural areas compared to urban areas with a prevalence of 31% vs. 23.7%. This may be due to a lack of awareness, public knowledge to maintain health and unhealthy lifestyle behaviors. High blood pressure is considered to increase the risk factors for Coronary Heart Disease (CHD) because high blood pressure will damage the walls of the arteries and accelerate the process of thickening (atherosclerosis) and narrow the arteries.

Recent studies have shown that the combination of non-drug therapy (non-pharmacotherapy) with drugs (pharmacotherapy) not only lowers blood pressure, but also reduces the risk of stroke and ischemic heart disease. Therapy with drugs can be done by giving antihypertensive drugs, while for therapy without drugs it can be done by exercising regularly.

Gymnastics for the elderly is a light exercise that is easy to do, not burdensome, which is applied to the elderly. Gymnastics activities for the elderly help the body to stay fit and fresh because it trains bones to stay strong, encourages the heart to work optimally and helps eliminate excessive free radicals in the body [3]. Research [4] on the effect of elderly exercise on the blood pressure of the elderly with hypertension in the elderly exercise group in Banjarkaja Sesetan, South Denpasar, only used one sample group, blood pressure measurements were only carried out at the first meeting as a pretest and the sixth meeting as a post test, so it is necessary to examine the effectiveness of elderly exercise on blood pressure in the elderly with hypertension.

Preliminary studies that have been carried out obtained data on the high incidence of hypertension in Kalikejambon Village, the working area of the Tembelang Health Center in 2020, there were 118 elderly people with hypertension. The Tembelang Health Center oversees several elderly Posyandu, which in the implementation of their activities have not realized elderly gymnastics. Therefore, from the phenomenon above, researchers are interested in examining the effect of elderly exercise on blood pressure in elderly hypertension in Kalikejambon Village, Tembelang District, Jombang Regency. This research will be conducted by assessing blood pressure before and after elderly exercise in a period of two months once a week.

## II. METHOD

The design used in this study was "Quasi experimental pre-post test" involving the control group and the intervention group. The research was conducted to determine changes in blood pressure before and after being given elderly exercise. Assessment or observation in research using this design will be carried out twice, namely before and after the experiment (pre and post test). The difference between pre and post test is considered the effect of treatment [5].

## III. RESULTS AND DISCUSSION

The study was conducted on 32 respondents who were divided into 16 respondents who did not do elderly exercise and 16 respondents who did elderly exercise. Data collection was carried out for 8 weeks. Data collection was carried out 30 minutes before the elderly exercise was carried out and 30 minutes after the elderly exercise was carried out every time the elderly exercise was carried out. The purpose of data collection in this study was to determine whether there was a change in blood pressure before and after elderly exercise in the intervention group compared to the control group at the same time.

### 1. Results

Table 1. Description of the distribution of the average value of systolic blood pressure in the elderly with hypertension before and after the elderly exercise in the control group.

Systolic Blood Pressure	Mean	Median	SD	Min-maks	P value
Before Exercise	172	172,5	9,9	155-190	0,041
After Exercise	169	170	10,7	150-190	

Based on table 1, it is known that the average value of systolic blood pressure in the control group before exercise was 172 mmHg, with the lowest systolic blood pressure being 155 mmHg and the highest systolic blood pressure being 190 mmHg. The average value of systolic blood pressure in the control group after exercise was 169 mmHg, while the lowest systolic blood pressure was 150 mmHg and the highest systolic blood pressure was 190 mmHg.

Table 2: Description of the distribution of the average value of diastolic blood pressure in the elderly with hypertension before and after the elderly exercise in the control group.

Diastolic Blood Pressure	Mean	Median	SD	Min-maks	P value
Before Exercise	89,38	90	7,7	80-100	0,006
After Exercise	84,38	80	10,7	70-100	

Based on table 2, it is known that the average value of diastolic blood pressure in the control group before exercise was 89.38 mmHg, the lowest diastolic blood pressure was 80 mmHg and the highest diastolic blood pressure was 100 mmHg. The average value of diastolic blood pressure in the control group after exercise was 84.38 mmHg, the lowest diastolic blood pressure was 70 mmHg and the highest diastolic blood pressure was 100 mmHg.

Table 3: The description of the average value of systolic blood pressure in the elderly with hypertension before and after the elderly exercise in the intervention group.

Systolic Blood Pressure	Mean	Median	SD	Min-maks	P value
Before Exercise	182,50	182,5	12,7	160-200	0,000
After Exercise	130	130	7,6	120-145	

Based on table 3, it is known that the average value of systolic blood pressure in the intervention group before exercise was 182.50 mmHg, the lowest systolic blood pressure was 160 mmHg and the highest systolic blood pressure was 200 mmHg. The average value of systolic blood pressure in the intervention group after exercise was 130 mmHg, the lowest systolic blood pressure was 120 mmHg and the highest systolic blood pressure was 145 mmHg.

Table 4: The description of the average value of diastolic blood pressure in the elderly with hypertension before and after the elderly exercise in the intervention group.

Diastolic Blood Pressure	Mean	Median	SD	Min-maks	P value
Before Exercise	97	100	6,8	80-110	0,000
After Exercise	72,81	70	6,0	65-90	

Based on table 4, it is known that the average value of diastolic blood pressure in the intervention group before exercise was 97 mmHg, the lowest diastolic blood pressure was 80 mmHg and the highest systolic blood pressure was 110 mmHg. The average value of diastolic blood pressure in the intervention group after exercise was 72.81 mmHg, with the lowest diastolic blood pressure being 65 mmHg and the highest diastolic blood pressure being 90 mmHg.

Table 5: Analysis of the effect of elderly exercise on systolic blood pressure in elderly hypertension in Kalikejambon Village, Tembelang District, Jombang Regency.

Average blood pressure after gymnastics	Median	SD	Min-maks	P value
Control group systolic blood pressure	170	10.7	150-190	0,000
Intervention group systolic blood pressure	130	7.6	120-145	

Based on table 5, it is known that the mean systolic blood pressure in the control group after exercise was 170 mmHg, the lowest systolic blood pressure was 150 mmHg and the highest systolic blood pressure was 190 mmHg. And the mean systolic blood pressure in the intervention group after exercise was 130 mmHg, with the lowest systolic blood pressure being 120 mmHg and the highest systolic blood pressure being 145 mmHg. The results of statistical tests using the independent t test obtained a p value of 0.000, meaning that there was an effect of elderly exercise

on systolic blood pressure in hypertensive elderly in Kalikejambon village, Tembelang district, Jombang regency.

Table 6: Analysis of the effect of elderly exercise on diastolic blood pressure in elderly hypertension in Kalikejambon Village, Tembelang District, Jombang Regency.

Average blood pressure after gymnastics	Median	SD	Min- maks	P value
Control group diastolic blood pressure	80	7,2	70-100	0,000
Intervention group diastolic blood pressure	70	6,0	65-90	

Based on table 6, it is known that the mean diastolic blood pressure in the control group after exercise was 80 mmHg, with the lowest diastolic blood pressure being 70 mmHg and the highest diastolic blood pressure being 100 mmHg. And the median value of diastolic blood pressure in the intervention group after exercise was 70 mmHg, with the lowest diastolic blood pressure being 65 mmHg and the highest diastolic blood pressure being 90 mmHg. The results of statistical tests using the independent t test obtained a p value of 0.000, meaning that there was an effect of elderly exercise on diastolic blood pressure in the elderly with hypertension in Kalikejambon Village, Tembelang District, Jombang Regency.

## 2. Discussion

- a. The description of the average value of blood pressure in the elderly with hypertension before and after the elderly exercise in the control group.

The elderly can be affected by hypertension due to decreased organ function in the cardiovascular system, thickened and stiff heart valves, and decreased elasticity of the aorta and other large arteries [6]. In addition, there is an increase in peripheral vascular resistance when the left ventricle pumps, so that systolic pressure and afterload increase [7].

One of the factors that can lead to increased blood pressure in the elderly is the lack of physical activity such as exercising regularly [8]. Lack of physical activity, such as gymnastics, can also cause hypertension due to a decrease in cardiac output (heart output) so that pumping to the heart is reduced. Lack of physical activity exercise can cause stiffness of blood vessels, so that blood flow is blocked and can cause hypertension [9].

Physical exercise is all efforts carried out to improve physical fitness and physical condition of the elderly. Physical fitness is a physical aspect of overall fitness. The purpose of physical exercise is to increase strength, cardiorespiratory endurance, speed, skill, and flexibility. Physical fitness in the elderly is health-related fitness, namely heart-lung and blood circulation fitness as well as muscle strength and joint flexibility [10].

- b. The description of the average value of blood pressure in the elderly with hypertension before and after the elderly exercise in the intervention group.

Judging from the blood pressure in the intervention group showed a decrease in the average systolic and diastolic blood pressure. The occurrence of a decrease in systolic and diastolic blood pressure in the elderly with hypertension in the intervention group, is due to elderly exercise resulting in a decrease in cardiac output and a decrease in total peripheral resistance, resulting in a decrease in blood pressure [11]. According to research [7] regular exercise can absorb or eliminate cholesterol deposits in the arteries. The sport in question is an exercise to move all the joints and muscles of the body such as walking, swimming, riding a bicycle. It is not recommended to do stressful sports such as boxing, wrestling or weightlifting, because strenuous exercise can actually cause hypertension.

- c. Analysis of the influence of elderly exercise on blood pressure in elderly hypertension in Kalikejambon Village, Tembelang District, Jombang Regency

Based on the results of the study, it was known that the mean systolic blood pressure in the control group after exercise was 170 mmHg, the lowest blood pressure was 150 mmHg and the highest blood pressure was 190 mmHg. The mean blood pressure in the intervention group after exercise was 130 mmHg, the lowest blood pressure was 120 mmHg and the highest blood pressure was 145 mmHg. The results of statistical tests using the independent t test obtained a p-value of 0.000, meaning that there was an effect of elderly exercise on blood pressure in the elderly with hypertension in Kalikejambon Village, the working area of the Tembelang Health Center, Jombang.

Based on the results of the study, it was known that the mean diastolic blood pressure in the control group after exercise was 80 mmHg, the lowest diastolic blood pressure was 70 mmHg and the highest diastolic blood pressure was 100 mmHg. The mean diastolic blood pressure in the intervention group after exercise was 70 mmHg, the lowest diastolic blood pressure was 65 mmHg and the highest diastolic blood pressure was 90 mmHg. The results of statistical tests using the independent t test obtained a p value of 0.000, meaning that there was an effect of elderly exercise on diastolic blood pressure in the elderly with hypertension in Kalikejambon Village, the working area of the Tembelang Health Center, Jombang.

[12] Concluded that exercise can be applied as hypertension management not only for prevention but also for maintaining the health of the elderly. This study is in line with research conducted by [4] which concluded that there was a significant effect between elderly exercise and a decrease in systolic and diastolic blood pressure in elderly hypertension. Elderly exercise is done repeatedly (high frequency), then over time the decrease in blood pressure will last a long time. That is why regular physical activity exercises can lower blood pressure. The type of exercise that is effective in lowering blood pressure is elderly exercise with moderate intensity. The frequency of exercise is 3-5 times a week with a duration of 20-60 minutes of exercise every time [13].

Exercise affects the cardiovascular system (circulatory blood) to improve its ability. More blood vessels (small blood vessels) are formed in active tissues to improve the supply of food and oxygen, and exercise burns excess fat in the system and blocks the fat content in the vessels, thereby reducing the risk of thrombosis [14]. Exercise has also been known to increase High Density Lipoprotein (HDL), which in turn helps metabolic processes and lowers Low Density Lipoprotein (LDL) levels [15]. Elderly gymnastics which consist of warm-up exercises, core exercises, and cooling exercises in which the movements in it also aim to reduce anxiety, stress, and reduce levels of depression. This decrease will stimulate the work of the peripheral nervous system (autonomous nervous system), especially the parasympathetic which causes vasodilation of the cross-section of blood vessels which will result in a decrease in blood pressure both systolic and diastolic [14].

This study is also in line with research conducted by [16] which states that there is an effect of yoga practice on decreasing systolic and diastolic blood pressure in the elderly. Research conducted by [17] on the benefits of tera gymnastics on elderly fitness showed that exercise could affect not only pulse stability, but also blood pressure stability, respiration and immunoglobulin levels, with the results of statistical analysis tests for the p-systolic blood pressure category. value 0.02 means a < p = 0.05) meaning that there is a difference in blood pressure between the elderly in the treatment and control groups.

The results of this study are in line with research by [1] which found that the frequency of elderly exercise on pulse showed a moderate relationship ( $r = -0.394$ ) and a negative pattern, which means the higher the frequency of elderly exercise, the lower the pulse rate. The results of statistical tests found that there was a significant relationship between the frequency of elderly exercise on the pulse (p value = 0.026). The results showed that there was a relationship between the frequency of elderly exercise and the pulse in the elderly. Gymnastics for the elderly is a light exercise that is easy to do, not burdensome, which is applied to the elderly. Elderly gymnastics activities help the body to stay fit and fresh because it trains bones to stay strong, encourages the

heart to work optimally and helps eliminate excessive free radicals in the body [3]. The results of this study are in line with research conducted by [18] which states that there is an effect of tera gymnastics on increasing fitness as indicated by a decrease in resting pulse.

#### IV. CONCLUSION

The average value of systolic blood pressure in the control group before exercise was 172 mmHg and after exercise 169 mmHg. The average value of diastolic blood pressure in the control group before exercise was 89.38 mmHg, and after exercise 84.38 mmHg. The average value of systolic blood pressure in the intervention group before exercise was 182.50 mmHg and after exercise 130 mmHg. The average value of diastolic blood pressure in the intervention group before exercise was 97 mmHg and after exercise 72.81 mmHg. There is an effect of elderly exercise on systolic and diastolic blood pressure in the elderly with hypertension in Kalikejambon Village, Tembelang District, Jombang Regency.

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# Use of Neuropathy System Score ( NSS ) in Measuring Peripheral Neuropathy in Diabetes Mellitus

Zuliani<sup>\*1</sup>, Kurniawati<sup>2</sup>, Sufendi Hariyanto<sup>3</sup>

Faculty Of Health Sciences, Universitas Pesantren Tinggi Darul Ulum University, Jombang, Indonesia

<sup>1</sup> zuliani@fik.unipdu.ac.id\*; <sup>2</sup> kurniawati@fik.unipdu.ac.id; <sup>3</sup> sufendihariyanto@fik.unipdu.ac.id

\* Corresponding author

## ABSTRACT

**Keywords:**  
Neuropathy System Score (NSS),  
Peripheral Neuropathy,  
Diabetes Mellitus

Peripheral neuropathy is one of the microvascular complications of Diabetes Mellitus ( DM ) that occurs in the periphery and causes damage to nerve function. Damage to nerve function can affect sensory, motor, and autonomic nerves. The purpose of this study was to determine peripheral neuropathy in patients with diabetes mellitus. This study uses descriptive research with a population of 62 respondents with sampling by the inclusion criteria. The instrument uses a peripheral neuropathy examination sheet from the NSS ( Neuropathy system score ) consisting of 10 questions. The data analysis used in this study is univariate analysis. More than half of diabetics are in the early elderly ( 55% ), female ( 66% ), have diabetes >5 years ( 69% ), and have GDS levels 200 mg/dL ( 74% ). A small proportion of people with diabetes have a history of comorbidities and a history of DFU ( Diabetic Foot Ulcer ) ( 24%, 8% ). More people with diabetes had mild neuropathy ( 58% ) than people with moderate or severe neuropathy ( 34%; 8% ). The results of this study showed that more than half of the respondents had mild peripheral neuropathy. The results of this study showed that more than half of the respondents had mild peripheral neuropathy. Therefore, an early examination is needed to prevent more severe neuropathy. It takes promotive and preventive efforts from primary health services to people with diabetes.

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## I. INTRODUCTION

Diabetes mellitus (DM) is a common public health problem where there is a continuous increase in both the world, developed countries, and developing countries. Diabetes mellitus is a group of metabolic diseases characterized by high blood sugar levels (hyperglycemia) caused by abnormal insulin secretion, insulin function, or both. The state of persistent hyperglycemia is associated with long-term damage or malfunctioning of body organs such as the eyes, heart, kidneys, blood vessels, and nerves [1]. Diabetic neuropathy is the most common chronic complication of DM, both in type 1 and type 2 diabetes. Of all the complications of DM, neuropathy causes the greatest morbidity and reduces the quality of life of patients if not managed properly. Diabetic neuropathy can develop asymptotically and go undetected, it can also show symptoms and signs that run slowly and even serious complications occur [2]. Diabetic neuropathy ( ND ) is one of the long-term complications of DM and more than 50% of DM patients experience this condition [3].

According [4], diabetes increased 4-fold from 108 million in 1980 to about 422 million adults with diabetes in 2014. This is supported [5] the number of adults who have diabetes as many as 424.9 million people who are thought to have increased by 628.6 million people in 2045. According [6], Indonesia has experienced an increase in the number of people with diabetes from 7.6 million people in 2013 to 9.1 million people in 2015 and is ranked as the 5th most diseased in the world which ranks fifth The 4 most diseases in Indonesia and East Java

Province rank 6 have the highest prevalence of suffering from diabetes mellitus from 33 provinces throughout Indonesia. Based on data from the Ministry of Health of East Java Province ( 2014) there are 605,974 people suffering from Diabetes mellitus. And from the results of data from the Jombang district health office, diabetes mellitus itself is in the position of the 10 most cases of the disease with a total of 6,917.

Complications of DM occur due to blood glucose concentrations that are not well controlled, can be divided into macrovascular and microvascular complications. Neuropathy is the most common chronic complication of DM [7]. Peripheral neuropathy is a microvascular disease that affects the small arteries that supply blood to the periphery [8]. The prevalence of diabetic peripheral neuropathy in African countries is 46% with the highest prevalence in West Africa and the lowest in Central Africa . A higher prevalence of peripheral neuropathy can be found in Southeast Asian countries, namely Malaysia ( 54.3% ), the Philippines ( 58.0% ), and Indonesia (58.0% ) [9].

Symptoms of peripheral neuropathy also vary from no complaints to very severe pain [10]. Symptoms depend on the size and function of the damaged nerve fibers. Nerve damage can occur in the sensory, motor, and autonomic nervous systems [11]. Autonomic nerve damage causes changes in skin texture and turgor that cause the skin to become dry, cracked, and calloused. Symptoms due to motor nerve damage include muscle weakness, atrophy, and eventually deformity. Symptoms of sensory nerve damage are divided into two, namely severe pain and painless. Numbness is the most common symptom and usually appears earlier [12].

Dry and cracked skin coupled with deformity conditions that put pressure on the feet, especially when wearing shoes that don't fit, can cause ulcers on the feet of DM patients. Because of the decreased perception of pain in sensory neuropathy, DM patients may develop ulcers without realizing it [13]. Foot ulcers in diabetic patients who have neuropathy are at high risk of infection and developing diabetic gangrene. This situation can lead to amputation which will increase the cost of treatment and the mortality rate in DM patients [14].

Although some patients with peripheral neuropathy experience a decrease in pain sensation, around 15-25% of DM patients experience neuropathic pain [15]. Pain that is felt in the form of burning and vibrating feet on its own (Indonesian Endocrinology Association ( PERKENI, 2015 ), so it is often disturbing and can limit physical activity, reduce the quality of life, and work productivity [16]. Stated that there is a relationship between peripheral neuropathy and quality of life in DM patients. The majority of DM patients with neuropathy experience burning in the feet and legs, tingling, weakness, and instability when standing or walking, which adversely affects the patient's quality of life and can lead to depression [17].

Diabetic experts in 1988 tried to compile and establish a diagnostic tool for diabetic neuropathy known as the San Antonio consensus, where at that time several scoring systems had been introduced including, Neuropathy Symptom Score ( NSS ), Diabetic Neuropathy Symptom ( DNS ), Diabetic Neuropathy Examination ( DNE ), Michigan Score, Neuropathy Deficit Score ( DNS ) and so on. He concluded that the NSS score is a tool that includes the symptoms and signs of DM neuropathy that has been validated, is fast and easy to do in clinical practice and has a high predictive value for screening DM neuropathy [18].

Examination to see the presence of peripheral neuropathy has never been done in primary health services. This phenomenon is also not found in the elderly Integrated Healthcare Center, where nurses have never carried out foot examinations from simple ( examination of the callus and foot shape ) to foot examinations that require special tools and skills. Nurses need to pay special attention to people with diabetes to prevent the worsening of neuropathy. These prevention efforts are urgently needed to prevent the development of neuropathy which will have an even worse impact on amputation and death. Prevention of the worsening of neuropathy can be done by doing early prevention. One form of early prevention efforts is by examining peripheral neuropathy. Examination of peripheral neuropathy is important considering that there are still many people with diabetes who ignore the symptoms of neuropathy. Based on this phenomenon, the researchers are interested in researching the use of the Neuropathy System Score ( NSS ) in the Measurement of Peripheral Neuropathy in Diabetes Mellitus.

## II. METHOD

This research uses descriptive research. With the population obtained a sample of 62 respondents with sampling by the inclusion criteria 1) patients with glucose metabolism disorders, 2) do not have DFU. The selected sample was then assessed for the NSS score ( Neuropathy system score ) consisting of 10 standard questions. The data analysis used in this study is univariate analysis.

## III. RESULTS AND DISCUSSION

### 1. Results

Table 1. Frequency Distribution of Diabetic Demographic Characteristics

<b>Respondents Category</b>	<b>Frequency</b>	<b>Percentages (%)</b>
<b>Ages</b>		
Early adulthood	1	2
Late adulthood	12	19
Early elderly	34	55
Late elderly	15	24
<b>Genders</b>		
Male	21	34
Female	41	66
<b>Long Suffering from DM</b>		
> 5 years	19	31
≥ 5 years	43	69
<b>Blood Sugar Check Results</b>		
< 200 mg/dL	46	74
≥200 mg/dL	16	26
<b>Patient's Disease History</b>		
Comorbidities	15	24
None	47	76
<b>DFU History</b>		
Ulcer history	5	8
None	57	92
<b>Total</b>	<b>62</b>	100

Based on the table above, more than half of the respondents are in the early elderly ( 55% ), and less than half of them are female ( 66% ). More than half of the respondents had diabetes >5 years ( 69% ) and had GDS levels 200 mg/dL ( 74% ). A small proportion of people with diabetes have a history of comorbidities ( 24% ) and history of DFU ( Diabetic Foot Ulcer ) ( 8% ).

Table 2. Frequency distribution of neuropathy assessment with NSS

<b>Category</b>	<b>Frequency</b>	<b>Percentages (%)</b>
Mild neuropathy	36	58
Moderate neuropathy	21	34
Severe Neuropathy	5	8

Based on table 2. More than half of respondents have mild neuropathy ( 58% ) and a small proportion of respondents have severe neuropathy ( 8% ).

## 2. Discussion

The results of this study indicate that the majority of the incidence of peripheral neuropathy is found in respondents aged early ( 46-55 years ). Increasing age will stimulate the degeneration process and cause nerve cell damage, both large nerves and small nerve fibers, and cause neuropathy [19]. The number of people with diabetes who experience mild and moderate neuropathy in the age range of 45-55 years is caused by changes in the walls of blood vessels where there is a thickening of the intima layer. These changes cause the stiffness of blood vessels so that oxygen and nutrients transport to the tissues decreases resulting in ischemia and in a long time will occur neuropathy [20].

Meanwhile, a small proportion of severe neuropathy was found in people with diabetes in the late elderly ( 56-65 years ). The occurrence of neuropathy in the elderly is associated with the accumulation of free radical damage such as increased levels of lipid peroxide and changes in enzyme activity resulting in tissue damage in the elderly. The majority of respondents in this study were women. This is in line with the results of research conducted by [21], where there are more female respondents than male respondents. This is following the theory which states that neuropathy in female respondents is associated with the presence of the hormone estrogen. Hormonally, estrogen will cause women to have more neuropathy due to impaired absorption of iodine in the intestine so that the process of forming nerve myelin fibers does not occur.

The incidence of mild peripheral neuropathy is mostly found in respondents who suffer from DM in a span of > 5 years. This is following research conducted by [22], which said that neuropathy was most common in respondents who suffered from DM in the range of 1-5 years. While the incidence of moderate neuropathy and severe neuropathy is more often found in respondents who have suffered from DM > 5 years. Found that the incidence of neuropathy can be found in DM patients with an average length of suffering from DM for 8 years [23].

The theory put forward by [24], says that the severity of neuropathy can increase in line with the duration of suffering from DM. This can occur because a prolonged state of hyperglycemia can increase oxidative stress and stimulate other pathways that cause nerve and vascular endothelial damage. Several existing studies can conclude that the longer you suffer from DM, the greater the severity of neuropathy that can be experienced [25].

The incidence of mild neuropathy was more common in respondents who had GDS in the range <200 mg/dL, while the incidence of moderate and severe neuropathy is more common in people with diabetes who have a GDS above 200 mg/dL. The results of research conducted by [26], said the same thing that the higher the GDS level, the risk for neuropathy was 4,497 times greater. Which states that in a state of hyperglycemia with a GDS above 200 mg/dL, the respondent is at risk of experiencing greater fiber damage, especially the nerves in the distal part [27].

Peripheral neuropathy can also occur because of a history of comorbidities. The majority of respondents in this study had a history of comorbidities such as hypertension. Based on research conducted by [28], shows that a history of hypertension will result in 4 times the occurrence of diabetic neuropathy. Hypertension in people with diabetes causes high blood viscosity, which reduces blood flow, resulting in vascular deficiency and lesions in endothelial blood vessels. Endothelial damage will affect tissue death.

In addition, some respondents can be found a history of stroke. In a state of hyperglycemia, the formation of reactive oxygen species ( ROS ) can occur which will inhibit the formation of nitric oxide. Decreased nitric oxide formation will affect the permeability between endothelial cells, including the endothelium lining blood vessels. As a result, blood vessels can be penetrated by low-density lipoprotein ( LDL ) known as bad cholesterol. LDL easily sticks to blood vessels and triggers atherosclerosis which if it occurs in the carotid arteries will cause a stroke [29].

Some respondents also have a history of other diseases such as CHD ( coronary heart disease ). The condition of a person with a history of DM can significantly increase the risk of CHD. This can occur through several mechanisms including increased oxidative stress,

activation of protein kinases that cause inflammation and thrombosis in blood vessels so that it can cause blood to accumulate and become blockages in the heart blood vessels and eventually myocardial infarction [30].

The incidence of peripheral neuropathy experienced by people with diabetes can lead to DFU. The results showed that some respondents had experienced DFU. This is supported by research conducted by [31], which found 85.7% of respondents experienced a high risk of DFU and 2.7% had an active foot disease. Several respondents said that before experiencing DFU, respondents complained of numbness and feeling thick. These complaints can occur because people with diabetes have impaired sensory and autonomic nerve function so that the respondent cannot feel anything or sensation in his feet. This is following the theory that people with diabetes often experience loss of sensitivity in the feet and will eventually increase the process of injury [32].

#### IV. CONCLUSION

The results of this study showed that more than half of the respondents had mild peripheral neuropathy. Therefore, an early examination is needed to prevent more severe neuropathy. It takes promotive and preventive efforts from primary health services to people with diabetes.

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# Knowledge and Attitudes about Handling Mental Health Problems of the Implementing Team in Community

Fajar Rinawati<sup>a,1\*</sup>, Novita Setyowati<sup>b,2</sup>, Sucipto<sup>c,3</sup>

<sup>a</sup> Akademi Keperawatan Dharma Husada Kediri, Jl. Penanggungan, Kota Kediri, Indonesia

<sup>b</sup> RS Dhaha Husada, Jl. Veteran, Kota Kediri, Indonesia

<sup>c</sup> Akademi Keperawatan Dharma Husada Kediri, Jl. Penanggungan, Kota Kediri, Indonesia

<sup>1</sup> [umminaufal2808@gmail.com](mailto:umminaufal2808@gmail.com) \*, <sup>2</sup> [rusnovita8@gmail.com](mailto:rusnovita8@gmail.com); <sup>3</sup> [suciptodika01@gmail.com](mailto:suciptodika01@gmail.com)

\* Corresponding author

## ABSTRACT

*Keywords:*  
Knowledge  
Attitude  
Mental Health  
Community

People with mental disorders in the community have a greater number than in hospitals, so handling mental health problems in the community is very important to pay attention to. The government has also formed a special team in handling mental health problems in the community consisting of several cross-sectors. The purpose of this study was to determine the knowledge and attitudes about handling mental health problems in a special team that handles mental health problems in the community. The sample in this study is part of the team for handling mental health problems in the community which consists of elements of health, government, police, army and society. The sampling method in this study is clustered simple random sampling, obtained as many as 46 respondents. Data were analyzed by univariate and bivariate analysis. The results showed that 72% good knowledge, 28% sufficient knowledge and 0% lack of knowledge, while attitudes showed good attitudes 67%, 33% sufficient attitudes and 0% poor attitudes. This study also shows that knowledge affects attitudes with a p-value of 0.031.

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## I. INTRODUCTION

Mental health is one of the characteristics of health. A person is said to be healthy if his condition can develop both physically, mentally, spiritually, and socially, so he can realize his own abilities, be able to cope with the pressures in his life, be able to work productively, and can contribute to society. People with mental disorders (ODGJ) are people who experience disturbances in thoughts, behavior and feelings that are manifested in a set of symptoms and/or significant behavioral changes (1). There are many impacts that can be caused by ODGJ, both for themselves, their families, the surrounding environment, the community and even the government. Therefore, the government made a policy that one of the minimum service standards (SPM) for District/City Health is health services for people with severe mental disorders (ODGJ) (2). ODGJ is also one of the people with disabilities who must be treated the same and have the right to get the same health services as other people (3).

ODGJ currently has reached 6.8% of the adult population in Indonesia and severe ODGJ is 0.19% (4). Based on data from the Health Office of the City of Kediri in 2017, there were 376 clients with mental disorders spread across the Health Center Work Area in the City of Kediri (5). Many factors influence recurrence in mental patients, including drug withdrawal, problems or conflicts with family or friends, and unpleasant experiences (6). Mental health problems will not be resolved properly if only one sector is handled, namely health workers, which includes from the center (Ministry of Health) to Puskesmas. This mental health problem is a problem that must be solved jointly across sectors. The cross-sectors involved include the Office of Social Affairs, relevant Regional Apparatuses, Security and Order (including Babinsa and Kamtibmas). All of these cross-sectors are members of the Community Mental Health Implementation Team (TP-KJM) (7). The TP-KJM at the Regency/City

level is a team that implements community mental health programs in the Regency/City, whose membership consists of several relevant regional apparatuses, the Head of the Resort Police and the Director of Mental Hospitals in the region, whose implementation is under the coordination of the Regional Secretary of the Regency/City. The day-to-day implementation is under the coordination of the Head of the Office in charge of Health.

All members of TP-KJM need to have adequate perceptions, stigma, knowledge, attitudes and abilities regarding the handling of mental health problems. Good knowledge will be able to bring up a good attitude and will also increase good abilities (8). Therefore, it is necessary to know in advance the knowledge, attitudes and abilities of TP-KJM members in the City of Kediri, so that future follow-ups can be carried out to improve mental health in the community. The purpose of this study was to see a description of the knowledge and attitudes of the implementing team and to find out whether knowledge influenced the attitude of the implementing team in dealing with mental health cases in the community.

## II. METHOD

This study uses an analytical observational research design with a cross sectional approach. The population in this study was the entire implementation team in Kota District, Kediri City, as many as 85 people. The sample in this study was part of the implementing team in the City District, Kediri City, as many as 46 respondents. The research activity lasted for approximately 5 months (July-November 2020). The research location is in 13 Kelurahan in Kota Subdistrict, Kediri City. This research instrument uses a questionnaire that has been tested for validity and reliability. This research has passed the ethical test with Registration number: 004/KEPK-Dharma Husada/2020.

## III. RESULTS AND DISCUSSION

Characteristics of respondents:

Table 1  
Characteristics of respondents (n=46)

No	Karakteristik	Jumlah	Persentase
1.	Gender:		
	a. Male	35	76
	b. Female	11	24
2.	Position/role TP-KJM:		
	a. Health workers	10	22
	b. Kesostrantib	7	15
	c. Babinsa	14	30
	d. Kamtibmas	5	11
	e. TRC	10	22
3.	Age:		
	a. 17-25 years	1	2
	b. 26-35 years	3	7
	c. 36-45 years	22	48
	d. 46-55 years	18	39
	e. >55 years	2	4
4.	Education:		
	a. SD	1	2
	b. SMP	1	2
	c. SMA	23	50
	d. D3	7	15
	e. S1	11	24
	f. S2	3	7
5.	Length of working:		
	a. 0-5 years	9	20
	b. 6-10 years	9	20

No	Karakteristik	Jumlah	Presentase
c.	11-15 years	7	15
d.	>15 years	21	46
6.	Marital status:		
a.	Married	42	91
b.	Widow/widower	2	4
c.	Not married	2	4

Table 1 shows that most of the respondents are male (76%), babinsa (30%), age between 36-45 years (48%), high school education (50%), working period of more than 15 years (46%), and married (91%).

Table 2  
Knowledge of the Implementing Team

No	Sikap	Jumlah	Presentase
1.	Good	33	72
2.	Enough	13	28
3.	Not enough	0	0

Table 2 shows that the implementation team has good knowledge 72%, enough 28% and less 0%.

Table 3  
Attitude of the Implementation Team

No	Sikap	Jumlah	Presentase
1.	Good	31	67
2.	Enough	15	33
3.	Not enough	0	0

Table 2 shows that the implementation team has a good attitude as much as 67% and a moderate attitude as much as 33%.

Table 4  
Analysis of the Relationship between Knowledge and Attitude of the Implementation Team

Variable 1	Variable 2	p-value
Knowledge	Attitude	0,031

Table 4 shows that the p-value for attitudes and abilities is 0.031 which means that there is a significant relationship between knowledge and attitudes.

The knowledge and attitude of the implementing team is very important, because knowing the level of knowledge and attitude of the implementing team will be able to determine the next steps in the program plan that will be carried out.

Sari's research (2019) on the relationship between knowledge and family attitudes with anxiety levels in treating patients with mental disorders shows that there is a relationship between knowledge and attitudes and anxiety (9). Based on this, it is very important to see the extent of knowledge and attitudes in treating mental disorders.

The results of research from Kasim (2018) regarding the relationship between knowledge and family attitudes in the care of family members with mental disorders show that there is a significant relationship, both knowledge and attitudes in the care of family members with mental disorders (10). This shows that someone who has good knowledge and/or attitude in caring for

people with mental disorders will be directly proportional to the ability of that person to care for people with mental disorders.

Nugraheni's (2021) research on knowledge, attitudes and media access to behavior in caring shows that knowledge and attitudes have a significant relationship to behavior (11). Rahmi's research (2018), entitled the relationship between knowledge and family attitudes in caring for hallucinatory patients, shows that there is a relationship between knowledge and attitudes with a p value of 0.025 (12). The results of research from Hartini (2019) regarding the relationship between mother's knowledge and attitudes about pneumonia with the mother's ability to treat pneumonia in toddlers showed that there was a relationship between knowledge and ability (p value = 0.002) and there was a relationship between attitude and ability to care (p value = 0.048) (13).

Layuk et al (2017) research on the effect of knowledge, attitudes and skills on patient satisfaction, one of the results shows that attitudes have a significant effect on patient satisfaction. In addition to a good attitude, ability which is one element of behavior will also affect people's satisfaction with handling health problems in general (14).

#### IV. CONCLUSION

The knowledge and attitude of the community mental health implementation team really needs to be known to what extent. The results showed that there was a significant relationship between the knowledge and attitudes of the implementing team. This means that good knowledge will affect attitudes in handling mental health cases in the community, for example cases of recurrence and tantrums in the community.

#### V. ACKNOWLEDGMENT

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# Survey on Knowledge of Women in Reproductive Age About Long-Term Contraceptive Methods

**Widya Kusumawati <sup>a,1,\*</sup>, Lely Khulafa'ur Rosidah <sup>b,2</sup>**

<sup>a</sup> Akademi Kebidanan Dharma Husada Kediri, Jl. Penanggungan 41 A Kota Kediri, 64117, Indonesia

<sup>b</sup> Akademi Kebidanan Dharma Husada Kediri, Jl. Penanggungan 41 A Kota Kediri, 64117, Indonesia

<sup>1</sup> widya.koesemawati@gmail.com \*; <sup>2</sup> iffat.yakta@gmail.com

\* Corresponding author

## ABSTRACT

*Keywords:*

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Women in Reproductive  
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Methods

Long-term contraceptive methods are very effective for couples in reproductive age, because the side effects and failures are very minimal. However, data obtained from the East Java Provincial Health Office, community participation in using long-term contraceptive methods is still below the target, which is 22.21% of the target of 22.85%. The purpose of this study was to describe the knowledge of women in reproductive age about long-term contraceptive methods. This was a cross-sectional study conducted in Ngampel village, Majoroto District, Kediri, East Java, in June - July 2019. The total of 30 women in reproductive age were selected using purposive sampling technique. The research instrument uses a questionnaire, and the type of data taken is quantitative data. The results showed that of the 30 respondents, 6 respondents (20%) have good knowledge, 14 respondents (46.67%) have sufficient knowledge, and 10 respondents (33.33%) have less knowledge. The results of this study can be used as basic data by health workers that women in reproductive age still need to improve their knowledge through communication, information and education methods about long-term contraceptive methods.

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## I. INTRODUCTION

UU Number 52 of 2009 concerning Population Development and Family Development mentions the importance of the complete human development of Indonesia, covers all dimensions and aspects of life, including population development and family development.<sup>[1]</sup> The problem of population and family planning in Indonesia is already so complex and has become a national issue that must be resolved. The Family Planning Program is closely related to the health status of women's health. Therefore, the family planning program has a population dimension and a health dimension. From the health aspect, Family planning programs are an important component of reproductive health. The 2017 SDKI shows that the trend of using modern contraception slightly decreased from 57.9 percent to 57.2 percent, although the use of long-term methods is increasing mainly due to the increased use of implants. Long-term contraceptive methods are very effective for couples of childbearing age, because the side effects and failures are very minimal. However, data obtained from the East Java Provincial Health Office, community participation in using long-term contraceptive methods is still below the target, which is 22.21% of the target of 22.85%.<sup>[2]</sup>

The total population of Indonesia in 2018 has reached 265 million people, even projected to reach 284 million people in 2025.<sup>[3]</sup> Indonesia's population growth rate in 2017 was 1.34%, which means around 3-4 million babies are born every year. This figure is higher than 2015 at 1.31% and 2016 at 1.27%. The population growth rate is still relatively high due to the high

total birth rate (TFR). <sup>[4]</sup> Data from the results of the Indonesia Demographic and Health Survey (SDKI) in 2017 showed a total birth rate (TFR) of 2.4 children per woman. This means that every female resident gives birth to an average of 2.4 children during her lifetime. <sup>[4]</sup>

The use of contraception in Indonesia is quite high and is considered to have reached the hard core. However, the use of Long-term contraceptive methods is still low in scope due to the lack of public interest in using Long-term contraceptive methods and can be motivated by many factors. <sup>[5]</sup> To further increase contraceptive use requires a focused and strategically effective approach. Efforts to promote long-term contraceptive methods must take into account that the decision to use long-term contraceptive methods is a big decision for family planning acceptors, consistent messages from motivators or health workers are very important to encourage and ensure the adoption of long-term contraceptive methods. From this description, the researcher is interested in knowing the description of the knowledge of Women of Childbearing Age (WUS) about Long-term contraceptive methods.

## II. METHOD

The research design used is descriptive with a cross sectional approach. The research was conducted in Ngampel Village, Mojoroto District, Kediri City in June – July 2019. The research population is all women of childbearing age, with purposive sampling sampling technique obtained a total of 30 respondents. The inclusion criteria of this study include women of childbearing age who are willing to be respondents, using DMPA injectable contraception and non-hormonal contraception, physically and mentally healthy. The exclusion criteria consisted of women of childbearing age who were pregnant, have a history of infectious disease, hereditary diseases such as diabetes mellitus, hypertension, heart disease, or asthma. The research variable is the single variable, namely the knowledge of women of childbearing age about long-term contraceptive methods. The research instrument uses a questionnaire, and the type of data taken is quantitative data. The ethics of this research include informed consent, anonymous, and maintaining confidentiality by giving each respondent a code. The ethical test was conducted at the Dharma Husada Nursing Academy, Kediri on June 24, 2019, with Reg. No : 003 / KEPK-DHARMA HUSADA / 2019.

## III. RESULTS AND DISCUSSION

### Results

Table 1 shows the characteristics of the respondents including age, education and family income. Table 2 shows specific data on the Survey on Knowledge of Women of Childbearing Age About long-term contraceptive methods.

**Table 1. The characteristics of the respondents**

Characteristics	Category	Frequency	Percentage
<b>Age</b>	20-30 years old	8	26.7%
	31-40 years old	9	30.0%
	>40 years old	13	43.3%
<b>Education</b>	Primary school	1	3.3%
	Junior high school	8	26.7%
	Senior High School	18	60.0%
<b>Family income</b>	College	3	10.0%
	< Rp. 500 thousand	10	33.3%
	Rp. 500 thousand s.d. Rp. 2 million	14	46.7%
	>Rp. 2 million	6	20.0%

Source : Research results

Table 2 Knowledge Survey of Women of Childbearing Age About Long-Term Contraception Methods

Knowledge	Frequency	Percentage (%)
Good	6	20,00
Enough	14	46,67
Not Enough	10	33,33
	30	100,00

Source : Research results

### Discussion

From table 2, it can be seen that the highest knowledge of women of childbearing age about Long-Term Contraception is in the sufficient category (46,67%).

Long Term Contraception Method is a method of contraception that is known to be effective because it can provide protection from the risk of pregnancy for a long period of time between three to ten years. consisting of the Women's Operation Method (MOW), the Male Operational Method (MOP), the Intrauterine Contraceptive Device (IUD) and the implant or known as the KB implant, which is an under the skin contraceptive device (AKBK) with a validity period of three years.<sup>[5]</sup> When it comes to long-term contraceptive methods in Indonesia, it is still less popular than contraceptive methods such as pills, injections, and condoms.<sup>[6]</sup> Respondents' knowledge of long-term contraceptive methods is the respondent's understanding of the meaning, types, functions and benefits, use and side effects of long-term contraceptive methods. From the results of knowledge, it was found that most of the respondents had sufficient knowledge about long-term contraceptive methods. Knowledge of long-term contraceptive methods is influenced by the existence of several factors supporting knowledge around the respondents, including education, occupation and age.<sup>[7]</sup> In terms of age, the majority of respondents are >40 years old (43.3%), while in terms of education are senior high schools (60.0%). This has a big influence on their choice of using contraception. Long-term contraceptive methods are less popular among respondents because the majority are afraid of the installation process and its effects on health. The existence of erroneous information about long-term contraceptive methods has a big influence on decisions to use long-term contraceptive methods. The intervention of the closest person is one of the biggest factors in influencing the acceptor's decision to use contraception. From the closest people such as spouse, parents, relatives or friends, the acceptors get stories that are not necessarily true. For example, there is information that the use of an IUD will require surgery in the genital area, the presence of a foreign object in the uterus will cause disease, and the fear of experiencing contraceptive failure, the baby born will have abnormalities. Table 1 also shows that 46.7% family income is included in the income range of Rp. 500 thousand s.d. Rp. 2 million, and 33.3% included in the range < Rp. 500 thousand. Income also influences the decision to use long-term contraceptive methods. They consider that using long-term contraceptive methods is expensive, when in fact it is cheaper than pill and injectable contraception which costs money every month. Long-term contraceptive methods can actually be the main choice in the use of contraception due to lower failure rates and relatively cheaper costs because there is a family planning safari program which is a free family planning program promoted by the government to reduce birth rates. The results of this study can be used as basic data by health workers that women of childbearing age still need to improve their knowledge through communication, information and education (IEC) methods about long-term contraceptive methods.

### IV. CONCLUSION

Knowledge of women of childbearing age about Long-Term Contraception is in the sufficient category (46,67%). The results of this study can be used as basic data by health workers that women of childbearing age still need to improve their knowledge through communication, information and education (IEC) methods about long-term contraceptive methods.

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# Birth Ball The Effect Of Exercise On The Reduction Of Labor Pain When I Phase I Active

Yunarsih <sup>a,1</sup>, Erna Susilowati, <sup>b2</sup> Dyah Ika K <sup>c3</sup>

<sup>a</sup>Akper Dharma Husada, Jl Penanggunagan 41 A Kediri, Kediri 64114, Jawa Timur, Indonesia

<sup>b</sup>Akper Dharma Husada , Jl Penanggunagan 41 A Kediri , Kediri 64114, Jawa Timur, Indonesia

<sup>c</sup>Akper Dharma Husada, Jl Penanggunagan 41 A Kediri Kediri 64114, Jawa Timur, Indonesia

<sup>1</sup>yunarsih0606@gmail.com\*, <sup>2</sup>ernabudi.80@gmail.com , <sup>3</sup>dyahkrisna.77@gmail.com

\*Corresponding Author

## ABSTRACT

*Keywords:*  
Birth Ball  
Pain  
Labor  
Stage I

Pain in the first stage of labor is a physiological condition due to uterine contractions, causing cervical effacement and uterine ischemia. The pain that is felt causes discomfort that causes fear, worry. A birth ball is one of the non-pharmacological methods, namely a physical therapy ball that helps the progress of labor and can be used in various positions. One of the birth ball exercise movements in the form of sitting on a ball by shaking the pelvis is considered to be able to provide comfort and speed up a delivery time. The purpose of this study is to review journals regarding the description of the effect of birth ball exercises on reducing labor pain in the first stage of the active phase. Literature review research design, using the Systematic Mapping Study method. This study was conducted to determine the effect of birth ball exercises on reducing pain in the first stage of labor. Identification by using Compare and Contrast, namely summarizing, critiquing the similarities of articles, reviewing a study that contradicts each other then summarized and made into an article. Exercise a Birth ball has an effect on reducing the pain felt by the mother due to contractions during the first stage of labor. Birth balls can be used by health workers for the management of pain in the first stage of labor as a form of maternal care and comfortable service.

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## I. INTRODUCTION

During the birth process, the mother experiences contractions or movements of the uterine muscles that lengthen and then shorten, so that it can cause pain. Labor pain due to uterine contractions causes cervical dilatation and thinning and uterine ischemia caused by myometrial contractions. According to <sup>(1)</sup>. Pain that arises in childbirth, causes concern and creates fear and stress which can result in a reduction in maternal-fetal blood flow. Labor pain is also caused by stretching of the lower uterine segment and cervix as well as uterine muscle ischemia. According to WHO, 2017 Every day in 2017, around 810 women died due to non-preventable causes related to pregnancy and childbirth. In a study Novianti, 2020 the incidence of pain in childbirth, 15% experienced mild pain, 35% with moderate pain, 30% with severe pain and 20% of labor with very severe pain. 67% of mothers are worried about pain during childbirth<sup>(10)</sup>.

Labor pain during the first stage is severe pain felt by the mother in labor for a longer time. The number of Primigravida maternity women who experience severe pain is 46%, 64% have moderate and mild pain, while in multigravida 37% of women who give birth experience severe pain, and 63% experience moderate and mild pain. Severe pain during labor can make mothers feel worried and anxious. The relationship between pain and anxiety is complex and influences each other. Anxiety can increase pain, and pain can also cause feelings of anxiety. When the mother in labor feels afraid, anxious and cannot tolerate the pain she feels, it causes the body to spontaneously

increase the release of catecholamine hormones, namely epinephrine and norepinephrine. An increase in this hormone will cause vasoconstriction of blood vessels which can increase maternal blood pressure, decrease blood flow to the uterus, decrease uteroplacental flow and decrease uterine activity so that it can cause prolonged labor. This situation also has an impact on the fetal heart rate pattern to be abnormal<sup>(2)</sup>.

To relieve pain, pharmacological and non-pharmacological methods (complementary therapy) can be used. Birth ball is a physical therapy ball that helps the progress of labor and can be used in various positions. One of the birth ball exercises in the form of sitting on a ball by shaking the pelvis is considered to be able to provide comfort and speed up delivery time. Birth ball exercises are useful for accelerating cervical dilatation, widening the diameter of the pelvis and accelerating the descent of the fetal head <sup>(9)</sup>. Based on the background of the problem above and many studies on the effect of non-pharmacological therapy, especially discussing birth ball exercises to reduce pain during labor. Researchers are interested in conducting research in the form of a literature study. The literature study that will be reviewed by researchers will review the effect of Birth ball Exercise on Reduction of Active Phase I Childbirth Pain sourced from national and international accredited journals with a publication year of 2016 to 2021

## II. METHOD

The research design used is a literature review with a Systematic Mapping Study design, which is a systematic literature review method using predetermined stages. The databases used by researchers are PubMed and Google Scholar with the publication year 2016-2021, then checked through Scimago for International journals while SINTA for National journals that have been registered and have DOI (Digital Object Identifier) and ISSN (International Standard Serial Number). The keywords used to search the National Journal are "Birth ball" and "Nyeri Persalinan Kala I" while to search for International Journals the keywords are "Birth ball" or "maternity Kala I" or "labor pain". The secondary data collection strategy used PICOS (F: Mothers who entered the first stage of active labor, I: Giving Birth ball technique, C: Before giving and after giving Birth ball exercises, O: There was a decrease in pain in mothers who gave birth by doing Birth ball, S: Experiment, Pre Experiment, Quasi Experimental, Randomized Controlled Trial). From the search results on the Google Scholar database, 74 national journals were obtained and from the PubMed database, 63 international journals were obtained

## III. RESULTS AND DISCUSSION

Ten journals were adjusted according to the inclusion criteria, which discussed the effect of birth ball exercises on reducing labor pain in the active phase of the first stage, then checked through Scimago for International journals and SINTA for National journals. The most widely used research design is Quasi experimental design, while others use Experiment, Pre Experiment, Randomized Controlled Trial. Respondents in this study on average were mothers in active phase I who experienced pain during the labor process with an average opening of 4-8 cm. Birth ball exercises were measured before and after being given. Respondents in this study had an average gestational age of 37-42 weeks with the last education being high school. The average age of the respondents is between 20-35 years. Maternity mothers who are respondents in the study are on average not working or housewives

Table 1 Frequency Distribution of Journal Publication Year

<b>Year Publication</b>	<b>Amount(n)</b>	<b>Percentage (%)</b>
2016	1	10
2017	2	20
2018	3	30
2019	3	30
2020	1	10
<b>Total</b>	<b>10</b>	<b>100%</b>

Based on table 1 of the 10 journals, the highest percentage in the year of publication is (@30%) in 2018 and 2019

Table 2 Frequency Distribution of Journal quality

<b>Journal Quality</b>	<b>Amount (n)</b>	<b>Percentage (%)</b>
Scimago	5	50
SINTA 3	3	30
SINTA 4	1	10
SINTA 5	1	10
<b>Total</b>	<b>10</b>	<b>100%</b>

Based on table 2 of the 10 journals, the highest percentage for the quality of international journals is (50%) as many as 5 journals at Scimago

Table 3 Frequency Distribution of research type

<b>Research Design</b>	<b>Amount (n)</b>	<b>Percentage (%)</b>
Experiment	1	10
Quasi Experimen	4	40
Randomized Controlled Trial	5	50
<b>Total</b>	<b>10</b>	<b>100%</b>

Based on table 3 of the 10 journals, the highest percentage for this type of research (50%) is the type of Randomized Controlled Trial research

Table 4 Frequency Distribution of management

<b>Management</b>	<b>Amount (n)</b>	<b>Percentage (%)</b>
Birth Ball	9	90
Pregnacy Exercise	1	10
<b>Total</b>	<b>10</b>	<b>100%</b>

Based on table 4 of 10 journals, the highest percentage for the management given to mothers who experience pain is (90%) as many as 9 journals using Birth Ball

Table 5 Frequency Distribution of measuring Instrument

<b>Measuring Instrument</b>	<b>Amount (n)</b>	<b>Percentage (%)</b>
Visual Analog Visual (VAS)	3	30
Numeric Rating Scale (NRS)	3	30
Faces Pain Rating Scale	2	20
Labour Agentry Scale (LAS)	1	10
Universal Pain Assessment Tool	1	10
<b>Total</b>	<b>10</b>	<b>100%</b>

Based on table 5, from 10 journals, the highest percentage for measuring instruments is (@30%) as many as 3 journals, namely using the Numeric Rating Scale (NRS) and Visual Analog Scale (VAS) measuring instruments.

Table 6 Frequency Distribution of sampling technique

<b>Sampling technique</b>	<b>Amount(n)</b>	<b>Percentage (%)</b>
Consecutive Sampling	3	30
Purposive Sampling	7	70
<b>Total</b>	<b>10</b>	<b>100%</b>

Based on table 6, out of 10 journals, the highest percentage in the purposive sampling technique is (70%) as many as 7 journals.

Tabel 7 Frequency Distribution of Sample amount

<b>Sample amount</b>	<b>Amout(n)</b>	<b>Percentage (%)</b>
1-50	3	30
51-150	4	40
151-512	3	30
<b>Total</b>	<b>10</b>	<b>100%</b>

Based on table 7, out of 10 journals, the highest percentage for the number of samples is 51-150 samples (40%) as many as 4 journals which are national journals. The average number of samples is

Table 8 Frequency distribution of analysis technique

<b>Analysis technique</b>	<b>Amount (n)</b>	<b>Percentage (%)</b>
correlation Test and T-test	1	10
T independen test	2	20
Wilcoxon-test	2	20
Mann-whitney test	1	10
ANOVA	1	10
Uji Chi Square	1	10
Absolute Risk Reduction (ARR)	1	10
generalized estimating equation model	1	10
<b>Total</b>	<b>10</b>	<b>100%</b>

Based on table 8, out of 10 journals, the highest percentage for analytical techniques using Wilcoxon-test and t-test is (@20%) as many as 2 journals

Pain felt during labor is a physiological thing because of contractions. The pain felt by every mother is different (subjective) according to external and internal factors <sup>(9)</sup>. Labor pain is caused by stretching of the lower uterine segment and cervix as well as uterine muscle ischemia. The intensity of pain from the opening one to ten openings will increase in height and more often in proportion to the strength of the baby's contractions and pressure on the pelvic structure, followed by stretching and even tearing of the lower birth canal <sup>(1)</sup>. Pain arises due to physical reflexes and maternal psychological responses. Tension emotions from anxiety to fear can exacerbate the perception of pain during labor. Pain experienced by mothers when facing labor can stimulate fear so that anxiety arises which ends in panic. This can cause a physiological response that reduces the ability of the uterus to contract and consequently prolongs labor time .press pain Strain is a subjective experience of the physical sensations associated with uterine contractions, cervical dilatation and effacement, and fetal descent during labour. Physiological responses to pain include increased blood pressure, pulse, respiration, sweating, and muscle tension. Pain in labor in this case is uterine contraction pain which can result in increased activity of the sympathetic nervous system, changes in blood pressure, heart rate and breathing <sup>(8)</sup>. To find out the pain felt by the mother, namely by conducting observations and interviews, then followed by filling out the pain assessment scale sheet <sup>(5)</sup>.

Based on the results of research on the analysis of the effect of birth ball exercise on the intensity of labor pain, it shows that there are differences in pre and post data on the intensity of labor pain before and after being given a birth ball <sup>(4)</sup>. The use of a birth ball allows women to give birth in an upright position and utilizes the force of gravity so as to accelerate the descent of the fetus and encourage rhythmic movements that can increase the optimal birth position. Overall, the position and movement of using a birth ball contribute to the comfort and progress of labor <sup>(8)</sup>.

Based on the theoretical description and the results of the journal analysis on the pain of the first stage of labor above, the researcher argues that the pain of the first stage of labor decreases after being given birth ball exercises because one birth ball position itself is able to provide comfort for the mother and can accelerate the progress of labor. Labor pain due to uterine contractions that cause cervical dilatation and thinning and uterine ischemia caused by myometrial contractions are physiological processes with different intensities in each individual. Pain is an uncomfortable stimulus that causes fear and worry<sup>(1)</sup>.

Birth balls are very good at pushing strongly the mother's energy needed during childbirth, an upright posture will support the birth process and help the fetus to be in an optimal position making it easier to give birth normally. During labor therapy, the mother sits as comfortably as possible and the ball shape that can adjust to the mother's body shape makes it easier for the mother to relax, besides that, the ligaments and muscles, especially those in the pelvic area, become loose and reduce pressure on the sacroiliac joints, blood vessels around the uterus and pressure on the uterus, bladder, back, waist, tailbone and can reduce pressure on the perineum<sup>(6)</sup>.

Birth ball exercise is a simple exercise using a ball that can be done during pregnancy, childbirth, and postpartum which aims to reduce non-pharmacological pain and also try to improve the emotional and psychological components of care. Birth balls also contribute to increasing maternal self-efficacy during labor and reducing pain. Birth ball exercise succeeded in increasing the confidence of pregnant women in their ability to cope with childbirth. The use of birth balls during labor is able to reduce pain levels because it stimulates postural reflexes and maintains muscles and reduces anxiety, minimal use of pethidine, facilitates descent of the fetal head, reduces the length of the first stage and increases maternal satisfaction and well-being. feel more comfortable and relaxed and 95% of respondents stated that birth ball exercises can increase comfort<sup>(11)</sup>.

After using the birthing ball the level of pain felt changed so that the birthing mother no longer felt very disturbing pain, where respondents only felt annoying pain not very disturbing pain. Because the use of a birthing ball is part of an exercise or birth ball therapy that is carried out by mothers in labor by sitting relaxed and swaying on the ball, hugging the ball during contractions has the benefit of helping the mother in reducing pain during labor. A mother who is able to relax in rhythm with contractions<sup>(7)</sup>.

Based on the theory and the results of the journal analysis above, the researchers argue that birth balls can be used as a non-pharmacological method of pain management in the first stage of labor because in practice it does not cause side effects for the mother and fetus. And the use of the birth ball itself is very easy to do and can be used by mothers since they are pregnant.

Labor pain is physiological in the labor process with different pain intensity in each individual. The causes of labor pain are caused by various factors such as uterine muscle contractions, pelvic floor muscle strain, episotomy and psychological conditions. Many methods are used to reduce pain in labor, both pharmacologically and non-pharmacologically. Non-pharmacological methods tend to be easier and safer to give to mothers in labor. These methods include massage, the use of birth balls, relaxation, warm compresses and cold compresses, the use of aromatherapy, breath control, positioning, music therapy, hypnotherapy, acupuncture and others. Birth ball is a method of using a rubber ball filled with air to reduce back pain during pregnancy and childbirth<sup>(5)</sup>.

In research Sriwenda & Yulinda, 2017 the use of birth balls makes the mother feel safe and comfortable in moving, making it easier for the fetus to move in the pelvis. The birth ball exercise aims to reduce labor pain and accelerate the descent of the fetal head so that the mother is expected to be more prepared and calm in the face of labor and delivery will take place more quickly<sup>(11)</sup>. One of the movements that can help the descent of the fetal head is by sitting on the ball and rocking so as to make a sense of comfort and help the progress of labor by using gravity while increasing the release of endorphins because the elasticity and curvature of the ball stimulate the receptors in the pelvis which are responsible for secreting endorphins<sup>(8)</sup>.

Based on the results of research Dewi, Aryawan, & Ariana, 2020 regarding the analysis of the effect of birth ball exercise on the intensity of labor pain, it shows that there are differences in pre and post data on the intensity of labor pain before and after being given birth ball exercise by getting a p-value of 0.007 so that p -value < 0.05. That is, there is a significant effect of birth ball exercise on the intensity of labor pain before and after the intervention. Meanwhile, in the research of Indrayani &

Riyanti, (2019) there was a significant difference in pain scores before and after using a birthing ball ( $p$ -value <0.05). The use of birthing balls during labor can reduce pain scores in labor<sup>(4)</sup>.

The results of statistical tests in the birth ball exercise group there was a significant difference between the birth ball exercise treatment group in the first measurement (after the first 30 minutes) and the second (after the second 30 minutes) compared to no birth exercise. balls. The average pain level in the birth ball exercise group was 4.5 and 4.9 with a standard deviation of 1.0 and the average pain level in the group without birth ball exercise was 5.4 and 6.3 with a standard deviation of 1.1. Based on these results, it is known that the average labor pain in the birth ball exercise treatment group in the first and second measurements is lower than the control group. From the theoretical description and the results of the journal analysis, the researcher argues that birth ball exercises can affect the reduction in pain felt by the mother due to contractions during the first stage of labor<sup>(8)</sup>.

#### IV. CONCLUSION

Based on the results of the literature review that has been discussed, the following conclusions can be drawn:

1. Pain in labor is caused by stretching of the lower uterine segment and cervix as well as uterine muscle ischemia. The non-pharmacological pain method Birth ball is a method of using a rubber ball filled with air to reduce back pain during pregnancy and childbirth. The use of a birth ball makes the mother feel safe and comfortable in moving, making it easier for the fetus to move in the pelvis. One of the movements that can help lower the fetal head is by sitting on the ball and rocking it so that it makes a sense of comfort and helps the progress of labor by using gravity while increasing the release of endorphins because the elasticity and curvature of the ball stimulate the receptors in the pelvis that are responsible for secreting endorphins.
2. Birth ball exercise succeeded in increasing pregnant women's confidence in their ability to cope with childbirth. The use of birth balls during labor is able to reduce pain levels because it stimulates postural reflexes and maintains muscles and reduces anxiety, minimal use of pethidine, facilitates descent of the fetal head, reduces the length of the first stage and increases maternal satisfaction and well-being. feel more comfortable and relaxed and 95% of respondents.

For further researchers, in conducting literature review research, they use more nationally or internationally accredited journals and use more varied data so that the research obtained is more standardized. It is expected to conduct direct research to find out and understand giving birth ball exercises and their effect on reducing pain in the first stage of the active phase of labor.

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# Influence of First Aid Training on The Level of Knowledge of Handling Victims For Indonesian Red Cross Volunteers in East Java Province

Hengky Irawan<sup>1</sup>, Dwi Rahayu<sup>2</sup>, Puguh Santoso<sup>3</sup>, Moh Alimansur<sup>4</sup>

<sup>1</sup>Nusing Academy, Dharma Husada, Kediri, Indonesia

<sup>2</sup>Nursingi Academy, Dharma Husada, Kediri, Indonesia

<sup>3</sup>Nusing Academy, Dharma Husada, Kediri, Indonesia

<sup>4</sup>Faculty of Health Sciences Kadiri University, Kediri, Indonesia

<sup>1</sup>[hengkydharma76@gmail.com](mailto:hengkydharma76@gmail.com), <sup>\*</sup>[ns.dwirahayu@gmail.com](mailto:ns.dwirahayu@gmail.com), <sup>3</sup>[puguhsantoso12@gmail.com](mailto:puguhsantoso12@gmail.com), <sup>4</sup>[ali.mansur75@unik-kediri.ac.id](mailto:ali.mansur75@unik-kediri.ac.id)

<sup>\*</sup>Corresponding author

## ABSTRACT

Keywords:

Training,  
Knowledge,  
First Aid

The more densely people drive, the risk of traffic accidents will increase. Treatment of injuries due to accidents or medical cases that come suddenly must be treated immediately. First aid is a golden period in saving lives. The speed and accuracy of action in the pre-phase of health facilities determines the success of the patient's help. First aid is a golden period in saving lives. The speed and accuracy of action in the pre-phase of health facilities determines the success of the patient's help. Providing first aid training for Indonesia Red Cross volunteers will increase knowledge to perform appropriate assistance will save lives and prevent disability and support the healing process. Providing first aid training for Indonesia Red Cross volunteers will increase knowledge to perform appropriate assistance will save lives and prevent disability and support the healing process. The purpose of the study is to find out the influence of first aid training on the knowledge of handling sufferers for Indonesia Red Cross volunteers. Research methods using Quasi Experiment Design (Pseudo-Experimental) design with Pre-Post Without Control Group Design. The technique of collecting respondents with Purposive sampling with 110 volunteers as research respondents. Data analysis using the Wilcoxon test. The average value of knowledge level with less category as many as 72 respondents (65.45), after being given training, the level of knowledge increased to enough as many as 64 respondents (58.18%). The respondent's knowledge before first aid training averaged (mean) of 3.50 and after training increased to 55.48. Wilcoxon Signed Ranks Test results obtained A value of -9,053 and p value = 0.000, meaning there is a difference in respondents' knowledge before and after first aid training. Conclusions there is a significant influence between first aid training on the level of knowledge of handling sufferers for Indonesia Red Cross volunteers in East Java Province

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## I. INTRODUCTION

Indonesia is a developing country, so all sectors will experience changes including transportation and population. The increasing number of people followed by the number of vehicles and the growing number of transportation facilities have shown an increase in motor driving. The more densely people drive, the risk of traffic accidents will increase. Treatment of injuries due to accidents or medical cases that come suddenly must be treated immediately. As a PMI Volunteer (Indonesian Red Cross) and First aiders are expected to have speed and accuracy in saving lives due to trauma or medical cases before being taken to health services<sup>1</sup>. Providing first aid training for PMI volunteers will increase knowledge to perform appropriate assistance will save lives and prevent disability and support the healing process. Handling emergency personnel will be successful depending on several conditions, namely the speed of patient discovery, the speed of response of health workers, the ability and quality

of health workers and the speed of asking for help<sup>2</sup>. The incidence of trauma/injury due to traffic accidents was approximately 151.87%, with the proportion of places where injuries occurred 44.8% coming from home and the environment, 31.8% on the highway, 9% at work and 7.4% in schools and the environment<sup>3</sup>.

In accordance with PMI's role in participating in providing health prefability emergency services, PMI volunteers are trying to improve their expertise in first aid training. This is in accordance with Government Regulation No. 7 of 2019 concerning the implementation regulation of Law No. 1 of 2018 concerning redheads in article 24 that the implementation of the head by providing health and social services pleh PMI including health servants in emergency conditions<sup>1</sup>. In accordance with PMI curriculum guidelines for volunteers are required to take first aid training and can be upgraded to specialist first aid training and ambulance crews. Training is a series of individual activities in systematically improving expertise and knowledge so as to be able to have professional performance in their fields<sup>4</sup>. This is as a basis for volunteers to develop / improve their abilities individually or in groups<sup>5</sup>. First aid training is actually a continuation of the skills and knowledge of basic first aid training. During pandemics training methods use lecture and simulation methods with video in handling cases in handling emergencies either trauma cases or medical cases. The purpose of the study is to find out the influence of first aid training on the knowledge of handling sufferers for PMI volunteers

## II. METHOD

Research methods use Quasi Experiment Design (Quasi Quasi Design) with Pre-Post Without Control Group Design. The population in this study was the representative of East Java PMI volunteers in each city / district. The technique of collecting respondents with Purposive sampling with 110 volunteers as research respondents. Data analysis using the Wilcoxon Signed Ranks Test.

## III. RESULTS AND DISCUSSION

Characteristic of respondents

Table 1: Distribution of Respondent Characteristics

Characteristic	N	%
<b>Gender</b>		
Man	57	51.82
Woman	53	48.18
<b>Age (years)</b>		
20 – 29	94	85.46
30 – 39	11	10
40 – 49	1	0.91
> 50	4	3.63
<b>Education</b>		
SMA	73	66.36
D1 - D3	10	9.1
S 1	25	22.73
S 2	2	1.81

Based on table I it can be explained that most of the respondents were 57 male (51.82%), most respondents aged 20-29 years as many as 94 (85.46%) and most high school education as many as 73 (66.36%)

Table 2: Distribution of Knowledge Frequency of Respondents before and after being given training first aid

Knowledge	N : 110	Pre		Post	
		f	%	F	%
Well done		-	-	26	23.64
Good		12	10.91	20	18.18
Enough		26	23.64	64	58.18
Less		72	65.45	-	-

Based on table 2 it can be explained that most respondents before being given first aid training have a level of knowledge with a category of less than 72 (65.45) people and after being given first aid training most have a sufficient level of knowledge as much as 64 (58.18) people.

Table 3. Wilcoxon Signed Ranks Test Volunteer Knowledge Level PMI East Java Province

	N	Mean	Nilai Z	p
Pre test	110	3,50		
Post test	110	55.48	-9,053	,000

Based on table 3 it can be explained that the average value of respondents' knowledge before first aid training was 3.50 and after training the average score increased to 55.48. Obtained Z value of -9,053 and p value 3.50

## DISCUSSION

### Gender

The results showed that the majority of PMI volunteer respondents were 57 men (51.82%), and women as many as 53 people (48.18%). The difference between a man's and a woman's brain cannot be used as an excuse. To be unable to receive and store information in his brain's memory. It's up to the individual to receive and remember the information ever obtained. Unequal sex differences between boys and children. Women in their study did not influence how children's behavior changes when participating in the implementation of health programs in schools<sup>6</sup>.

### Age

The results showed that the majority of PMI volunteer respondents aged 20-29 years as many as 31 people (77.5%). This indicates that the respondent is in adulthood. At this time a person is required to be independent in determining attitudes, choices and being able to decide actions. In adulthood who are in development on body size, strength, psychological, reproductive ability, easily motivated and quickly learn, it is expected to be the first responder that is the layman who first provides help in the place of life events<sup>7</sup> (Wong, 2009).

### Education

The results showed that the majority of pmi volunteer respondents graduated from high school as many as 73 people (66.36%). This suggests that thought processes and knowledge will influence in receiving first aid knowledge.

### PMI Volunteer Knowledge Level

The results showed that most respondents before being given first aid training had a level of knowledge with less categories as many as 72 people (65.45%), the level of knowledge is enough 26 people (23.64%), and the level of knowledge Good knowledge of 12 people (10.91%). The level of knowledge of respondents after being given. First aid training has a level of knowledge with sufficient categories As many as 64 people (58.18%), and a good level of knowledge of 20 people (18.18%) and

a good level of knowledge as many as 26 people (23.64%). This shows that the respondent's knowledge increases after being given training. The provision of training has a positive influence on the increase in knowledge levels. This is as a result of the acceptance of new and useful information for respondents. According to Wawan and Dewi stated that factors that affect a person's level of knowledge come from the information they receive, with more sources of information, one of which comes from health workers who will increase knowledge so that it is more widespread<sup>8</sup>.

Several factors can affect knowledge such as experience, beliefs, socio-culture, facilities, and education. According to Fanani that the provision of information through education and training will increase knowledge, then it will cause awareness and eventually someone will practice in accordance with the knowledge possessed<sup>9</sup>. The results of research conducted by Damayanti, stated that the provision of First aid training in accidents affects increased knowledge fracture treatment in PMR Member Students at Binangun State High School<sup>10</sup>. Line with sari research<sup>11</sup>, that the provision of splint dressing training affects improved students' knowledge and skills. Most of them have increased. Knowledge from before and after training is provided. In line with Rajakumari's research<sup>12</sup>, it was found that respondents' knowledge increased after being given First Aid measures. The mean of knowledge at the time of pretest 8.75, posttest 15.25. This shows that The provision of educational programs on first aids measures is very effective in increasing student knowledge. Another study conducted by Neto et al<sup>13</sup>. (2016), Health Education Intervention on First Aid in School: Integrative Review found that health education about first aid increases the knowledge of students, teachers, and teaching staff.

#### Effect of First Aid Training on Patient Handling Knowledge for PMI Volunteers

The results showed that respondents' knowledge before first aid training was a mean of 3.50 and then the mean value increased to 55.48. Wilcoxon Signed Rank Test results obtained value Z of -9.053 and p value = 0.000, then the decision taken is H0 rejected when obtained the value  $p < 0.05$ , meaning there is a difference in knowledge responders before and after first aid training. The existence of these differences can be stated that there is an influence of the first classification training on the knowledge level of PMI volunteers. As per Irawan's research<sup>14</sup> that there is an influence of health education with simulation methods on first knowledge for health education hotel employees using simulation methods with a thitung value of 14.22 and a significance value of 0.000.

From the above research that training affects the level of knowledge of trainees. Training is a short process of education that brings together learning in theory and practice, so training is a factor that can increase one's knowledge<sup>15</sup>. Training can affect knowledge significantly because it has supporting factors. One of the factors that make training with various methods can increase knowledge is because participants are guided directly by coaches who already have a provider certificate. Combination methods with more complete guidance and giving. Modules can increase confidence during demonstrations, this is what contributes to the results where the combination method although statistically not different, but from the average value, the results are slightly better than training methods with instructors and audio visuals<sup>16</sup>. First aid training aims to provide information in the form of knowledge to respondents about the right way to provide trauma and cardiovascular case relief. Knowledge is the process of proving a person from the process of reminding or introducing information and ideas from the previously obtained knowledge process<sup>17</sup>. With the provision of such information, it is expected that respondents' knowledge about handling emergency trauma and cardiovascular cases will increase for the better. According Frame<sup>18</sup> states that trauma treatment and basic life support (BHD) can be taught to anyone. Every adult should have these skills, even children can also be taught according to their capacity, especially health workers and non-health workers should be taught about handling trauma cases and basic life support in order to provide immediate safety assistance.

#### IV. CONCLUSION

There is an influence of first aid training on the knowledge of sufferers for PMI volunteers in East Java Province with a p value of 0.000 ( $< 0.05$ ). This shows training can increase knowledge.

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# Red Dragon Fruit Effectiveness On Decrease Blood Glucose Levels In Patients Type II Diabetes Mellitus In Kepatihan

\*Berlian Yuli Saputri<sup>1</sup>, Ikke Widya Saraswati<sup>2</sup>

<sup>a</sup> Lecturer, Nursing, STIKes Hutama Abdi Husada, Tulungagung

<sup>b</sup> Bachelor, Nursing, STIKes Hutama Abdi Husada, Tulungagung

\*berlian.yuli.saputri@gmail.com

## AB STRAC T

*Keywords:*

Dragon Fruit

Blood Glucose Level

Type II Diabetes Mellitus

**Background:** Diabetes mellitus is a group of metabolic diseases characterized by high blood glucose levels that occur due to impaired insulin secretion. The impact of diabetes is not treated immediately will develop into complications. Diabetes Mellitus can be given non-pharmacological therapy, one of which is the consumption of red dragon fruit. The purpose of this study was to determine the effectiveness of red dragon fruit on reducing blood glucose levels in type II diabetes mellitus patients in Kepatihan Village.

**Methods:** The research design used was Pre Experiment using the One group Pretest-Posttest design. The population in this study were all patients with type II diabetes mellitus in Kepatihan Village. The research sample was type II diabetes mellitus patients who were in Kepatihan Village who met the criteria of 30 respondents. The sampling technique is purposive sampling. The data was collected using observation sheets and the research results were analyzed using the paired t-test.

**Results:** The results showed that from 30 respondents the average value of pre blood glucose levels was 177.97 mg/dl and post blood glucose levels were 159.50 mg/dl. The results of the paired t-test statistic showed that the P-value = 0.018 and = 0.05 so that p <0.05. This Shows that there is the effectiveness of red dragon fruit in reducing blood glucose levels in type II diabetes mellitus patients in Kepatihan Village.

**Conclusions:** This shows that respondents can consume red dragon fruit as a non-pharmacological therapy that can help lower blood glucose levels in patients with type II diabetes mellitus.

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## I. INTRODUCTION

Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia or high blood glucose levels that occur due to impaired insulin secretion, decreased insulin action, or the result of both (1) . World Diabetes Day (World Diabetes Day) has been observed since 1991 every November 14 to raise attention to diabetes whose incidence continues to increase in the world, initiated by the International Diabetes Federation (IDF) and the World Health Organization (WHO).

Red Dragon Fruit is one of the fruits that can be consumed to lower blood glucose levels in people with diabetes mellitus. Based on expert research conducted by the School of Pharmaceutical Sciences Universiti Sains Malaysia, and published in the National Library of Medicine National Institutes of Health stated that red dragon fruit is rich in antioxidants that are useful for preventing the risk of diabetes in addition to the antioxidant flavonoid content in dragon fruit. plays a major role in lowering blood sugar levels in diabetic patients.

Based on WHO data, the number of people with diabetes mellitus in 2015 was 415 million people from the world's population and increased in 2013 to 382 million people. The International Diabetes Federation estimates that by 2035 the number of sufferers will increase to 592 million people

or an increase of 55% (2). WHO data states that Indonesia has a diabetes prevalence of 8.4 million people and it is estimated that by 2020 it will increase to 21.3 million people.

In 2015 Indonesia was ranked 7th in the country with the highest incidence of diabetes mellitus in the world with 8.5 million sufferers after China which ranked first in the world. Riskesdas data shows that the prevalence of diabetes mellitus in Indonesia has an increasing trend, from 5.7% (2007) to 6.9% (2013). IDF stated that in 2015 the estimated number of people with Diabetes Mellitus in Indonesia was estimated at 10 million people. Based on a report from the Health Office of Tulungagung Regency in 2015, there were 2172 Diabetes Mellitus patients in Tulungagung Regency. Based on data from the Tulungagung Health Center in Kepatihan Village, in November 2018 there were 98 people suffering from Diabetes Mellitus out of a total of 477 patients.

The impact of diabetes is not treated immediately will develop into a more severe disorder, because it can cause various complications, namely nerve damage, kidney damage, eye damage, heart disease, stroke, impotence, and hypertension (3). Based on (4) every 19 minutes there is one person in the world who has a stroke, there is one person who is blind and there is one person who is amputated due to complications of diabetes mellitus.

Efforts in overcoming diabetes mellitus are pharmacological and non-pharmacological therapies. Pharmacological therapy is the treatment carried out using oral or injection drugs. While non-pharmacological therapy is treatment using herbs that have less effect than synthetic drugs. Several plants have been studied and have potential as anti-diabetes Mellitus, one of which is red dragon fruit, because this fruit is one of the fruits that can be consumed to reduce blood glucose levels in people with diabetes mellitus, this is because in a study conducted by Hidayati (5), it was found The results showed that there was a decrease in blood glucose levels before and after administration of 200 grams of red dragon fruit in patients with type II diabetes mellitus for 10 days. It was concluded that there was an effect of giving red dragon fruit on blood glucose levels. Dragon fruit is rich in flavonoid antioxidants as much as  $0.02 \pm 7.21$  mg CE/100 grams. The ability of flavonoids, especially quercetin, is to inhibit the intestinal mucosa so that it can reduce glucose absorption. This causes a reduction in the absorption of glucose and fructose from the intestine so that blood glucose levels fall. Red dragon fruit also contains high fiber, namely 0.7-0.9 grams/100 grams of fruit. The fiber contained in this red dragon fruit is a water-soluble fiber that can be used as hypoglycemic therapy. The role of soluble fiber is to improve insulin sensitivity and reduce insulin requirements by increasing the transit time of food in the intestine, delaying gastric emptying, and slowing glucose absorption (6)

This is reinforced by research conducted by Panjuantiningrum, 2009 which stated that there was a decrease in blood glucose levels in white rats induced by alloxan (a chemical to provide hypoglycemic conditions in experimental animals) after being given red dragon fruit. In addition, in a study conducted by A. N. Widyastuti, (7) it was found that giving red dragon fruit juice can have an effect on decreasing fasting blood glucose, decreasing blood glucose levels because red dragon fruit has components that can provide a hypoglycemic effect that serves to balance glucose levels. such as fiber and antioxidants.

With the description above, it can be concluded that there are still many problems with diabetes mellitus in the community, namely the high incidence of diabetes mellitus in the community, especially the kepatihan village area. From this description, researchers are interested in researching the effectiveness of red dragon fruit on reducing blood glucose levels in patients with type II diabetes mellitus in Kepatihan Village, Tulungagung Regency.

## II. METHOD

The research design used is Pre Experiment Design using One Group Pretest-Posttest Design. This research was conducted by giving a pre-test (early observer) before being given an intervention, after that, an intervention was given, then a post-test (last observation) was carried out (Hidayat, 2011). The population in this study were all Type II Diabetes Mellitus patients in Kepatihan Village. The sample in this study was sample this study was patients with type II Diabetes Mellitus in the Kepatihan Village by the research criteria.

After selecting the sample that met the research criteria, there were 30 people. Sampling was taken by purposive sampling, with the following criteria:

- a. The inclusion criteria are :

  1. Type II Diabetes Mellitus patients residing in the kepatihan sub-district who are willing to be respondents.
  2. Type II Diabetes Mellitus patients residing in the kepatihan village who are not currently undergoing medical therapy.
  3. Type II Diabetes Mellitus patients residing in the kepatihan village aged 45-65 years.
  4. Patients with type II diabetes mellitus who have a GDP > 126 mg/dl.
  5. Patients who already know that they have diabetes are proven by examination of GDA > 200 mg/dl.
  6. Prospective respondents who have GDA > 200 mg/dl during initial observation (at the socialization site) and proven by checking GDP with results > 126 mg/dl.

  
- b. The exclusion criteria are:

  1. Patients with type II Diabetes Mellitus who are in the kepatihan village who are not at home when taking the research.
  2. Patients with Type II Diabetes Mellitus who are in the kepatihan village who do not want to have their blood drawn.
  3. Patients with type II Diabetes Mellitus who are in the Kepatihan sub-district who are pregnant.

Collecting data using GDP observations before and after treatment. This research was conducted on June 16 – July 28, 2020 in Kepatihan Village, Tulungagung Regency. Then the Paired T-Test was carried out to determine the effect of the Independent Variable on the Dependent Variable. The degree of significance of = 0.05 means that if the statistical test shows p 0.05 then there is a significant effect between the Independent Variables and the Dependent Variables. Data analysis using computerized software SPSS16.00. With a note that if the data is not normally distributed based on the normality test (Kolmogorof Smirnov), the statistical test is changed to the Wilcoxon Sign Rank Test. The ethics of this research is the consent form, anonymous and confidential.

### III. RESULTS AND DISCUSSION

Table 1. Frequency Distribution of Blood Glucose Levels Before Consumption of Red Dragon Fruit in Type II Diabetes Mellitus Patients in Kepatihan Village

	N	Lowest Glucose Level (minimum)	Highest Glucose Level (maximum)	Average (mean)	Standard Deviation
Before	30	128	315	177.97	44.229

Based on table 1 above, it can be described that of the 30 respondents before being given treatment the consumption of red dragon fruit had the lowest blood glucose level value of 128 mg/dl and the highest blood glucose level was 315 mg/dl, and the average blood glucose level before consuming the fruit. red dragon is 177.97

Table 2 Frequency Distribution of Blood Glucose Levels After Consumption of Red Dragon Fruit in Type II Diabetes Mellitus Patients in Kepatihan Village

	N	Lowest Glucose Level (minimum)	Highest Glucose Level (maximum)	Average (mean)	Standard Deviation
After	30	125	280	159.50	31.132

Based on table 4.2 above, it can be described that of the 30 respondents after being treated with red dragon fruit consumption, the lowest blood glucose level was 125 mg/dl and the highest blood glucose level was 280 mg/dl, and the average blood glucose level after consuming dragon fruit. red is 159.50.

Table 3 Paired t-test results before and after being given treatment in the form of red dragon fruit consumption on blood glucose levels in type II diabetes mellitus patients in Kepatihan Village

Treatment	N	Mean	Std Deviation	p-value
Fasting Blood Glucose Before	30	177.97	44.229	
		18.467	40.139	0.018

Based on the analysis in table 4.3, it can be interpreted that the results of the Pairet t-test statistically significant 0.05 resulting in a P-value = 0.018 which is smaller than the value of = 0.05 ( $0.018 < 0.05$ ) so that  $H_0$  is rejected and  $H_1$  is accepted, which means there is the effectiveness of red dragon fruit on reducing blood glucose levels in type II diabetes mellitus patients in Kepatihan Village

Before being given treatment the consumption of red dragon fruit had the lowest blood glucose level value of 128 mg/dl and the highest blood glucose level was 315 mg/dl, and the average blood glucose level before consuming the fruit. the red dragon is 177.97. Age is a risk factor for suffering from type II diabetes mellitus in developing countries is age over 45 years (8). After a person reaches the age of 45 years, blood glucose levels rise 1-2 mg% per year during fasting based on this that age is a major factor in increasing the relevance of diabetes and impaired glucose tolerance. Riskesdas data in 2013 showed that the age group 55-64 years had a greater risk of suffering from diabetes mellitus.

The researcher agrees with this theory because based on the cross-tabulation between age and blood glucose before consuming red dragon fruit, most of the respondents aged 56-65 years as many as 19 respondents (63.3%) had blood glucose  $>126$  mg/dl. it will be more susceptible to a disease, such as complications of diabetes. Both men and women have the same risk of developing diabetes mellitus until early adulthood. After the age of 30, women have a higher risk than men. This is because women with gestational diabetes mellitus have a higher risk of developing type II diabetes mellitus at an advanced age (9). Researchers do not agree with this theory, because in this study researchers did not make pregnant women as respondents in the study, type II diabetes mellitus can also attack anyone and many are caused by other triggering factors such as unhealthy eating patterns.

After consuming red dragon fruit have the lowest glucose level value is 125 mg/dl and the highest glucose level is 280 mg/dl, the average blood glucose level after consuming red dragon fruit is 159.50. Dragon fruit besides tasting delicious and fresh is believed to have many health benefits, another very important benefit is that this fruit is high in antioxidants. According to (10) states that antioxidants are substances that can be useful to inhibit the aging process and help lower glucose levels in diabetes. The fiber in dragon fruit is 0.7-0.9 grams and can slow down the absorption of glucose and fat by increasing the viscosity of feces which indirectly reduces the rate of diffusion so that blood glucose levels fall (7). The ability of quercetin to inhibit the intestinal mucosa so that it can reduce glucose absorption causes a reduction in glucose absorption from the intestine so that glucose levels fall (11).

Researchers agree with this theory because the results of this study indicate that almost all of the respondents or 26 respondents (86.7%) who have consumed red dragon fruit weighing 200 grams a day for ten days experienced a decrease in blood glucose, where the results showed that before consuming dragon fruit The highest blood glucose level was 315 mg/dl, and after consuming red dragon fruit the highest glucose level dropped to 125 mg/dl, and indeed 4 respondents experienced an increase in blood glucose because according to observations this was because on the previous day these respondents consumed sweet foods., and uncontrolled vegetable peels increasing blood glucose measurements.

The average blood glucose before consumption of red dragon fruit is 177.97 with a standard deviation of 44,229, while the average blood glucose after consumption of red dragon fruit is 159.50 with a standard deviation of 31,132. From the results of data analysis using the Paired t Test with the

help of the SPSS computer program, it can be interpreted that the test results are significantly 0.05 resulting in a P value = 0.018 which is smaller than the value of = 0.05 ( $0.018 < 0.05$ ) so that H<sub>0</sub> is rejected and H<sub>1</sub> accepted, which means that there is an effectiveness of red dragon fruit in reducing blood glucose levels in patients with type II diabetes mellitus in the Kepatihan Village.

Dragon fruit is a plant that belongs to the cactus plant family that has thorns on each segment of its stem. This fruit with scaly skin is rich in potassium, iron, protein, fiber, sodium, and calcium which are good for health. Calcium in dragon fruit is good for overcoming arthritis. In addition, dragon fruit is also a source of beta-carotene and vitamin C. This fruit is also high in water and sugar which is sweet and fresh. This fruit is believed to be able to lower cholesterol and balance blood sugar (12). The red dragon fruit has a sweet taste and is filled with small black seeds. Dragon fruit flesh contains high carbohydrates and fiber, dragon fruit can be eaten directly or processed (13). The content of flavonoids in red dragon fruit is as much as 0.02-7.21 mg CE/100 grams. This flavonoid has the ability of quercetin which can inhibit the intestinal mucosa so that it can reduce glucose absorption, this causes a reduction in glucose absorption from the intestine so that glucose levels fall (11).

Research conducted by Ana Roiffatul in 2017 showed that there was a decrease in blood glucose levels before and after administration of 200 grams of red dragon fruit in patients with type II diabetes mellitus for 10 days which concluded that there was an effect of giving red dragon fruit on blood glucose levels. This is reinforced by research conducted by Panjuantiningrum, (16) which stated that there was a decrease in blood glucose levels in white rats induced by alloxan (a chemical to provide hypoglycemic conditions in experimental animals) after being given red dragon fruit.

Based on the description above, it shows that there is a match between facts and theory which states that red dragon fruit can affect lowering blood glucose levels in patients with type II diabetes mellitus. It can be seen from Table 4.3 that the average blood glucose before consuming red dragon fruit is 177.97 and the average blood glucose after consuming red dragon fruit is 159.50. This is because in dragon fruit there are flavonoids and high fiber which can help lower blood glucose levels.

Consuming red dragon fruit regularly can also help lower blood glucose levels so that blood glucose levels can be stable. In addition, using exercise, effective stress management. If this is obeyed and carried out by people with type II diabetes mellitus, the glucose levels in the blood can gradually fall.

#### IV. CONCLUSION

Based on data obtained from research conducted in the Kepatihan Village it can be concluded that blood glucose in respondents who have consumed red dragon fruit weighing 100 grams a day for ten days experienced a decrease in blood glucose, the results showed that almost all of the respondents or 26 respondents (86.7%) who had consumed red dragon fruit weighing 100 grams a day for ten days experienced a decrease in blood glucose, where the results showed that before consuming red dragon fruit the highest blood glucose level was 315 mg/dl, and after consuming red dragon fruit the glucose level was higher. the highest dropped to 125 mg/dl. And 4 respondents experienced an increase in blood glucose because according to observations this was because on the previous day these respondents consumed sweet foods, and uncontrolled vegetable kupat so that there was an increase in blood glucose measurements.

The results of data analysis using the Paired t-Test with the help of the SPSS computer program concluded that the test results were significantly 0.05 resulting in a P-value = 0.018 which was smaller than the value of = 0.05 ( $0.018 < 0.05$ ) so that H<sub>0</sub> was rejected and H<sub>1</sub> was accepted. which means that there is the effectiveness of red dragon fruit on reducing blood glucose levels in type II diabetes mellitus patients in Kepatihan Village

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# Activity Test of Infused Water Okra to Wards Reduction of Blood Sugar Levels in Type II Diabetes Mellitus Patients in Gondang Tulungagung Village

Dewi Zuniawati<sup>a,1</sup>

<sup>a</sup> STIKES Hutama Abdi Husada Tulungagung, JL. Dr. Wahidin Sudiro Husodo. No.1, Kedung Indah, Kedung Waru, Kec. Kedung Waru, Kabupaten Tulungagung, Jawa Timur 66224  
dewi.zuniawati@stikestulungagung.ac.id

## ABSTRACT

*Keywords:*

Water Okra

Blood Sugar Level

Type II Diabetes  
Mellitus

**Background:** Diabetes mellitus is a group of metabolic diseases with characteristics of hyperglycemia that occur due to abnormalities of insulin secretion, insulin work or both that leads to multi-organ chronic complications. Okra is an herbal plant that can be used as an alternative to decrease and help stabilize blood sugar levels. The purpose of this study was to determine the activity test of giving infused water okra to reduce blood glucose levels in people with diabetes mellitus type II.

**Methods:** The research design used is pre-experiment (one group pre-post test design). While the population is of all type II diabetes mellitus in gondang Village Tulungagung District. The sample size is 30 respondents taken by purposive sampling approach. Data collection was conducted on July 22 - July 28, 2020. Using glukotest instruments and observation sheets. Processing and data analysis using SPSS 16.0 statistical application, using Paired T-test with  $\alpha = 0,05$ .

**Results:** The result of paired t test statistic shows  $p\text{-value} = 0,000 < \alpha = 0,05$ . So that  $H_0$  rejected  $H_1$  accepted which means there is influence of infused water okra to decrease blood glucose level in type II diabetes mellitus patient in gondang village, Tulungagung sub-district. From this research, infused water okra proven to decrease blood glucose level in diabetes mellitus type II patient because of fiber and flavonoid content in it.

**Conclusions:** With these capabilities are expected to the consumption of infused water okra on a regular basis can keep blood sugar levels remain normal levels in people with diabetes mellitus type II.

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## I. INTRODUCTION

Non-Communicable Diseases (NCD) is a fairly large public health problem in Indonesia at this time. This is marked by a shift in disease patterns epidemiologically from infectious diseases which tend to decline to non-communicable diseases which are increasing globally in the world, and nationally has occupied the top ten diseases that cause death, including diabetes mellitus. Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia that occurs due to defects in insulin secretion, insulin action or both. This disease arises slowly and is usually not realized by the sufferer<sup>1</sup>. Diabetes mellitus, which the general public calls diabetes is a chronic disease caused by the body's inability to produce the hormone insulin, this is characterized by high blood sugar levels. Insulin is a hormone released by the pancreas, which is responsible for maintaining normal blood sugar levels. Insulin enters sugar into cells so that it can produce energy or be stored as energy reserves<sup>2</sup>. Based on data from the International Diabetes Federation (IDF) in 2015 as many as 415 million people suffer from diabetes mellitus, this number has increased 4 times from 108 million sufferers in the 1980s. By 2040 it is estimated that the number will be 642 million. In Southeast Asia in 2014 there were 96 million people suffering from diabetes with prevalence increasing from 4.1% in the 1980s to 8.6% in 2014. Indonesia ranks seventh in the world for the highest prevalence of diabetes in the world

along with China, India , the United States, Brazil, Russia, and Mexico with an estimated number of people with diabetes of 10 million, the prevalence of people with diabetes in Indonesia shows a tendency to increase from 5.7% in 2007 to 6.9% in 2013<sup>3</sup>. In East Java until 2013 there were 222,430 DM sufferers<sup>4</sup>. data from the Tulungagung District Health Office until December 2015 there were 10,578 cases of diabetes mellitus while the data until January 2018 there were 36,451 cases of diabetes mellitus, from this data there was an increase of 25,873 cases. From the data above, we can conclude that diabetes mellitus is a serious threat to the health of the Indonesian people. Diabetes is a disease whose complications can affect all organs of the body from the top of the head to the toes. Serious impacts of diabetes mellitus include eye disorders in the form of retinopathy, kidney failure (nephropathy) and nerves (neuropathy), increasing the risk of heart attack, stroke, for men it can cause impotence and infertility (barren). This disease is chronic and sufferers continue to increase worldwide with increasing population, age, prevalence of obesity and decreased physical activity.In the 2015 DM Management and Prevention Consensus, the management and management of DM is focused on 4 pillars, namely education, medical nutrition therapy, physical exercise and pharmacological intervention. The first step taken in the management of diabetes mellitus, is treatment without drugs in the form of diet and exercise settings. If in this first step the treatment goals have not been achieved, it can be combined with pharmacological steps in the form of insulin therapy or oral hypoglycemic drug therapy, or a combination of both. In addition to pharmacological measures such as insulin therapy or oral hypoglycemic drug therapy, traditional therapy can also be used. The selection of traditional therapy was chosen because in terms of lower costs, safer from side effects because it comes from herbs, widely available in the community, easy to obtain, and Indonesia, which has a tropical climate, is suitable for the growth of various kinds of plants that can be used for treatment. which can be used for the treatment of diabetes include brotowali, bitter leaf, bay leaf, ginseng, crown of the gods, bitter melon, neem leaves, aloe vera, noni, black cumin, garlic and many more. One type of plant that can lower blood sugar levels (hypoglycemic) is Okra<sup>5</sup>. Okra contains high fiber which helps stabilize blood sugar by regulating the rate at which sugar is absorbed from the intestinal tract, this fiber also helps control blood sugar levels by slowing the assimilation of sugar through the intestine<sup>6</sup>. As well as protective flavonoids against cell damage as insulin producers so that they can increase insulin sensitivity, flavonoids, especially quercetin in inhibiting GLUT 2 of the intestinal mucosa so that it can reduce the absorption of sugar and fructose from the intestine<sup>7</sup>.

From the description above, regarding okra which is believed to be a traditional medicine and has been tested by several researchers proven to be able to lower blood sugar levels, the researchers are interested in examining whether giving okra fruit can reduce blood sugar levels by processing it into infused water which can later be used. by the public as an antidiabetic drug.

## II. METHOD

This research was carried out for 7 days, namely on 22 July – 28 July 2020 where the number of respondents was 30 people from Type II Diabetes Mellitus sufferers in Gondang Village, Tulungagung Regency. The research design used was the Pre Experimental Design research design with One group pre- post test design.

The population in this study were all patients with Type II Diabetes Mellitus in Gondang Village, Tulungagung Regency in 2020. Using a purposive sampling technique.

The data were analyzed using the Wilcoxon signed rank test which will show whether there is an effect of reminiscence therapy on reducing stress levels in the elderly. Because the data can be categorized and on an ordinal scale, the data is then analyzed using the Paired T Test using a computer with SPSS (Statistical Product and Service Solution Version 16 Windows) technique. To determine the level of significance between variables in the measurement of a significant influence with the level of significance is p 0.05, meaning that H=0 is accepted, it means that there is no influence between variables.

### III. RESULTS AND DISCUSSION

Table 1. Frequency distribution of respondents' blood glucose levels before giving okra infused water in Gondang Village, Responsibility Tulungagung District.

Low blood sugar level (mg/dl)	Highest blood sugar level (mg/dl)	Mean (mg/dl)	Standart Deviasi
107	216	157,73	30,618

Shows that, out of 30 respondents in Gondang Village, Tulungagung City before being given treatment, they had the highest blood glucose level of 216 mg/dl, the lowest blood sugar level of 107 mg/dl, and the average (mean) blood sugar level before being given the treatment. is 157.73 mg/dl.

Table 2 Frequency distribution of respondents' blood glucose levels after giving okra infused water in Gondang Village, Tulungagung Regency

Low blood sugar level (mg/dl)	Highest blood sugar level (mg/dl)	Mean (mg/dl)	Standart Deviasi
93	195	140,30	30,195

Shows that, out of 30 respondents in Gondang Village, Tulungagung Regency in 2020 after being given treatment, they had the highest blood glucose level of 195 mg/dl, the lowest blood sugar level of 93 mg/dl, and the average (mean) blood sugar level after being given the treatment. is 140.30 mg/dl.

The analysis Activity Test Of Infused Water Okra To Wards Reduction Of Blood Sugar Levels In Type II Diabetes Mellitus Patients In Gondang Tulungagung Village in 2020 using a paired t test statistic, the results showed that blood glucose levels before and after administration of infused water okra experienced a significant decrease in average value of 17.43 mg/dl from the data mean blood sugar levels pre 157.73 mg/dl to blood sugar levels post 140.30 mg/dl, and obtained P value (p-value) = 0.000. This means that the hypothesis H0 is rejected and H1 is accepted because the p value < = 0.05. This means that there is an effect of giving okra (*Abelmoschus esculentus*) infused water on reducing blood glucose levels in patients with diabetes mellitus in Gondang Village, Tulungagung District in 2020. 30 respondents with type II diabetes mellitus before being given treatment, the highest blood glucose level was 216 mg/dl, the lowest blood sugar level was 107 mg/dl, and the average (mean) blood sugar levels before the treatment was 157.73 mg/dl.

Diabetes Mellitus is a chronic, progressive disease characterized by the body's inability to metabolize carbohydrates, fats and proteins, leading to hyperglycemia (high blood sugar levels)<sup>8</sup>. A person is said to have diabetes if he has fasting blood sugar levels in venous plasma > 126 mg/dL and > 100 mg/dL in capillary blood, on blood sugar tests when venous plasma > 200 mg/dL and in capillary blood > 200 mg/dL. Blood sugar levels throughout the day vary which will increase after eating and return to normal within 2 hours<sup>9</sup>. Diabetes mellitus is a metabolic disease characterized by hyperglycemia that occurs because the pancreas is unable to secrete insulin, impaired insulin action, or both. Long-term damage and failure of various organs such as the eyes, kidneys, nerves, heart, and blood vessels can occur when in a state of chronic hyperglycemia . Classification of blood glucose levels in patients with diabetes mellitus on fasting blood sugar examination is 80-109 mg/dl is said to be good, 110-125 mg/dl is moderate and >125 mg/dl is said to be bad<sup>10</sup>.

From the description of the facts and theories above, the researcher argues that there is a match between the theory of blood glucose levels and the results of the study where the results of fasting blood sugar measurements show an average value of 157.73 mg/dl. This value indicates that the respondent has a bad blood glucose level and this requires treatment so that in the future it does not cause complications. Diabetes mellitus can occur because the pancreas gland is unable to secrete insulin, impaired insulin action, or both, this results in impaired sugar metabolism in the body which results in increased blood sugar content, so long-term treatment is needed. Management to keep sugar levels within normal limits is through education, nutritional therapy, physical activity and pharmacology. In addition to chemical drug pharmacology, you can also use non-pharmacological drugs in the form of herbal infused water okra, so that diabetic patients are not dependent on drugs. There are several things that cause type II diabetes to occur including age and gender <sup>11</sup>. Based on cross tabulation data between gender and blood sugar levels it is known that from 30 respondents before being given infused water okra who were male, almost all of the respondents had bad blood sugar levels, namely 15 people (88.2%)

The Stewardship theory in 2011, the male gender has a higher risk of diabetes than women. Scientists from the University of Glasgow, Scotland revealed this after observing 51,520 men and 43,137 women. All of them are people with type II diabetes and generally have a body mass index (BMI) above the overweight or obese limit. Men with diabetes have an average BMI of 31.83 kg/m<sup>2</sup>, while women only have it at a BMI of 33.69 kg/m<sup>2</sup>. This difference in risk is influenced by the distribution of body fat. In men, the accumulation of fat is concentrated around the abdomen, thus triggering central obesity which is more at risk of metabolic disorders. From the description of the facts and theories above, the researcher argues that the male sex is more at risk of developing diabetes mellitus due to differences in risk caused by the distribution of fat in the body and also in men the accumulation of fat is concentrated around the abdomen, which can trigger more central obesity. risk of triggering metabolic disorders. As we know that many men have distended stomachs, usually this is due to a lifestyle such as the wrong diet and no physical activity such as exercise, besides smoking also increases the risk of diabetes in men.

Cross tabulation data shows that of the 30 respondents before giving okra infused water aged 46-55 years, almost all of the respondents had bad sugar levels, namely 6 people (85.7%), while those aged 36-45 years all of the respondents had low blood sugar levels. good blood sugar levels that is 1 person (100%). According to Petersen, 2016, generally humans experience physiological changes that drastically decline rapidly after the age of 40 years. Diabetes often appears after a person enters a vulnerable age, especially after the age of 45 in those who are overweight, so that their body is no longer sensitive to insulin.

Another theory says that someone 45 years old has an increased risk of diabetes mellitus and glucose intolerance caused by degenerative factors, namely decreased body functions, especially the ability of cells to produce insulin to metabolize glucose. <sup>13</sup>.

From the description of the facts and theories that have been described, the researcher agrees with the theory above, that increasing age can be at risk, this is in accordance with various diseases, especially Type II Diabetes Mellitus. Where most of the respondents aged 46-55 years before being given infused water had poor glucose levels with 6 people (85.7%) this can happen because of the aging process which affects all body functions, one of which is insulin production by the pancreas and work. from insulin itself which is not optimal, so it is important for the community in general and diabetics in particular to maintain health as they age to avoid diabetes.

Okra (*Abelmoschus esculentus*) in English lady's fingers, okra, or gumbo is a type of flowering plant in the Malvaceae tribe originating from the area around present-day Ethiopia. Okra is a vegetable source that is rich in fiber, minerals, and vitamins, so it is often recommended by nutritionists for cholesterol control and weight loss programs, helps stabilize blood sugar by regulating the rate at which sugar is absorbed from the intestines, and relieves constipation <sup>14</sup>.

The chemical constituents of okra include 67.50% cellulose, 15.40% hemicellulose, 7.10% lignin, 3.40% pectic components, 3.90% fat and wax components and 2.70% aqueous extract<sup>15</sup>. Cellulose and hemicellulose are included in anti-diabetic components. Both components are included in the fiber or dietary fiber group. Chemically fiber is a carbohydrate in the form of polysaccharides such as cellulose, hemicellulose and pectin as well as non-carbohydrate fibers such as lignin, gum and mucilage. Fiber can reduce total cholesterol and LDL (Low Density Liquid) and reduce the hyperglycemic response (suppress the rise in blood sugar after eating)<sup>16</sup>. Consuming fiber in okra can lower postprandial blood glucose levels (2 hours after eating) by reducing glucose diffusion and delaying the absorption and digestion of carbohydrates. Okra slime which is a long-chain polysaccharide hydrocolloid with high molecular weight and protein constituents containing both hydrophilic and hydrophobic substances, causes okra fruit slime to have potential as an emulsifying agent, thickener and binding agent<sup>17</sup>.

From the results and theoretical facts above, it shows that giving okra infused water can reduce fasting blood glucose levels as evidenced by a decrease in the average value of respondents' blood glucose levels from 157.73 mg/dl to 140.30 mg/dl where there is celsis of 17.43 mg/dl. Although the average value has not yet reached blood glucose levels with a good group (80-10 (mg/dl) but this value has improved from the previous value and it is not impossible if given regularly, the blood sugar level will reach the blood glucose level. normal blood sugar. Researchers also argue that okra infused water can maintain normal blood sugar levels because the fiber and flavonoid content of okra regulates the rate at which sugar is absorbed from the intestine and improves the performance of the pancreas in secreting insulin so that blood sugar levels do not increase as described in theory. on.

Cross tabulation between sex and blood sugar levels after giving okra infused water, it is known that from 30 respondents a small proportion of male and female respondents experienced an improvement in blood sugar levels with 3 respondents in women (23.1%) and 3 male respondents (17.6%). With almost the same percentage, it proves that okra infused water is effective in lowering blood sugar levels in both male and female sexes so that the consumption of infused water can be given to all genders.

Based on the results of the statistical paired t test in (attachment 16) with SPSS 16.00 software which is used to analyze pre-test and post-test blood glucose levels with a significant level of = 0.05, the result is P = 0.000. This shows that H0 is rejected and H1 is accepted because the p value < = 0.05. This means that there is an effect of giving infused water okra (*Abelmoschus esculentus*) on decreasing blood glucose levels in patients with type II diabetes mellitus in Jengglungharjo Village, Responsibility gunung Tulungagung District in 2018.

Diabetes Mellitus is a chronic, progressive disease characterized by the body's inability to metabolize carbohydrates, fats and proteins, leading to hyperglycemia (high blood sugar levels)<sup>8</sup>. A person is said to have diabetes if he has fasting blood sugar levels in venous plasma > 126 mg/dL and > 100 mg/dL in capillary blood, on blood sugar tests when venous plasma > 200 mg/dL and in capillary blood > 200 mg/dL. Blood sugar levels throughout the day vary which will increase after eating and return to normal within 2 hours<sup>9</sup>.

#### IV. CONCLUSION

From the theory and facts above, it shows that there is a match between the facts and the theory which states that okra can lower blood glucose levels. Using another alternative, regularly consuming okra infused water can also reduce blood glucose levels so that blood glucose levels are always stable, which would be better if balanced with diet and regular exercise. If this is obeyed by people with diabetes mellitus, blood sugar levels will be in normal or stable limits.

#### V. ACKNOWLEDGMENT

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# Effectiveness of Construction Play on Sibling Rivalry Reaction in Preschool Age Children

Dwi Retnowati<sup>1</sup>, Eri Aptisa<sup>2</sup>, Ria Anggraini<sup>3</sup>

<sup>1</sup>Nursing, STIKes Hutama Abdi Husada Tulungagung, East Java, Indonesia

<sup>2</sup>Nursing, STIKes Hutama Abdi Husada Tulungagung, East Java, Indonesia

<sup>3</sup>Nursing, STIKes Hutama Abdi Husada Tulungagung, East Java, Indonesia

[retnoilona@gmail.com\\*](mailto:retnoilona@gmail.com*); [riaanggraini118@gmail.com](mailto:riaanggraini118@gmail.com)

## AB STRAC T

*Keywords:*

construction play

sibling rivalry

preschool

**Background:** A healthy child is a healthy child physically, psychologically, socially and spiritually. A child's health is characterized by developments that match his age, and is able to adapt to the environment. In preschool-aged children health problems that often arise is a disorder of growth and development and behavioral disorders one of them sibling rivalry. Sibling rivalry is a competition with siblings. One way to handle sibling rivalry is to play. Games that can be applied is construction play which is a construction game that can be played with friends or siblings to increase cooperation. This study aims to determine the effect of construction play on sibling rivalry reaction in preschoolers in Kindergarten TK Dharma Wanita Persatuan Sumberbendo District Pucanglaban Tulungagung.

**Methods:** The research design used in this research is pre experiment using One-group pre-post test design. The population is all student who have siblings of 22 children by using Purposive Sampling Technique. The study was conducted for one month. Data collection using questionnaire sheet, then data processed with Editing, Coding, Scoring and Tabulating technique. Then analyzed by statistical test of willcoxon sign rank test.

**Results:** The results obtained P value of 0,002 and  $\alpha = 0,05$  which means the value of  $p < \alpha$  ( $0,05$ ), so that  $H_0$  is rejected and  $H_1$  accepted. The conclusion show the effect of construction play on sibling rivalry reaction in preschoolers.

**Conclusions:** The effectiveness of construction play on sibling rivalry reaction show the importance of parents and the school to apply the construction play as an effort in dealing with sibling rivalry.

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## I. INTRODUCTION

A healthy child is a child who is physically, psychologically, socially and spiritually healthy. The health of a child begins with a healthy lifestyle implemented by the Ministry of Empowerment. The degree of health of children reflects the degree of the smallest things ranging from maintaining personal hygiene, the environment to a healthy and regular diet which is characterized by development that is in accordance with the age level, looks active or agile and happy, good appetite, clean and shining eyes, lips and the tongue looks fresh, breath does not smell, and easily adapts to the environment<sup>1</sup>

*Sibling rivalry* is a competition between siblings which includes feelings of wanting to compete and wanting to feel more than their siblings. *Sibling rivalry* is usually dominated by feelings of jealousy<sup>2</sup>. According to<sup>3</sup> in general, a child will feel afraid and threatened with losing or decreasing parental love and attention if a younger sibling is born, and according to Gathlieb and Mendelson the birth of a new

sibling is a problem for the eldest child, where The eldest must share the love, affection, and attention of his parents to his younger brother. This sense of competition usually occurs between two or more children who are close in age (1-2 years) and of the same sex<sup>4</sup>.

In this case, parents must have a special method to overcome the problem of *sibling rivalry* that occurs between siblings<sup>5</sup>. explains several things that can be strategies that can be done to deal with *sibling rivalry*, namely: (1) not comparing children with each other; (2) let children be themselves; (3) love children's talents and success; (4) make children able to work together rather than compete with each other, for example like playing together. One of the games that can be done together is a constructive game.

Constructive games or *construction play* are games that use various existing objects to create a particular work such as arranging blocks, legos, puzzles, drawing, cutting or sticking and wax or plasticine<sup>6</sup>. In relation to improving the ability of cooperation that stimulates social interaction with peers in the form of cooperation in forming or building what children want. Constructive play is a way of playing that is constructive, nurturing, repairing, in which children use materials to make something that is not intended to be useful, but is intended for the joy gained from their work<sup>7</sup>

Based on a preliminary study on *sibling rivalry* reactions in preschool-aged children conducted by researchers on January 5, 2020 at the Dharma Wanita Persatuan Sumberbendo Kindergarten, Pucanglaban Sub-district with an interview method with related themes to several mothers, they complained that their children often had envy of each other. Of the 10 mothers interviewed, 70% of mothers stated that their children often quarreled with their siblings and another 30% of mothers stated that their children rarely quarreled with their siblings. If *sibling rivalry* is not handled properly, it will have a negative impact such as a prolonged conflict between siblings which results in physical and psychological trauma which of course will make the child's growth and development effective.

In this case the role of parents is very important to overcome the problem of *sibling rivalry*, methods for dealing with *sibling rivalry* such as one of them playing *construction play* can be applied by parents and in an educational institution for example to teachers or educators whose role is to resolve conflicts in children and in the field of education. Health nurses can apply these methods in child nursing care to overcome *sibling rivalry*. Based on this background, the researchers wanted to know how to model constructive play (*construction play*) can be a solution to overcome the reaction of *sibling rivalry* that occurs in preschool children in kindergarten Dharma Wanita Persatuan Sumberbendo Pucanglaban Tulungagung subdistrict Year 2020. This study aims to determine the effectiveness of *construction play* on *sibling rivalry* reactions in pre-school age children at Dharma Wanita Persatuan Sumberbendo Kindergarten, Pucanglaban District, Tulungagung Regency.

## II. METHOD

The research design used in the study was pre-experimental using the *One-group pre-post test design*. This research will be conducted by using a way of giving a *pre-test* to one group or called initial observation before a treatment is carried out. After being given a treatment to the group, then again given a *post test* or final observation in one group. This treatment is given to determine the consequences of the treatment given. Sampling is to determine the sample to be used in research<sup>8</sup>. This study uses a *purposive sampling* technique, which is a *sampling* technique in which the researcher determines the sample himself or herself that is taken or examined.<sup>9</sup> Thus the researchers took samples with *purposive sampling technique* which was limited by inclusion and exclusion criteria. In this study, the population was all students in TK Dharma Wanita Persatuan Sumberbendo, Pucanglaban District, Tulungagung Regency, amounting to 37 students. In this study, the sample used was students who have relatives in TK Dharma Wanita Persatuan Sumberbendo, Pucanglaban District, Tulungagung Regency as many as 22 children.

### III. RESULTS AND DISCUSSION

Table 1. Cross-tabulation of *sibling rivalry* reactions before and after the *construction play* game at Dharma Wanita Persatuan Sumberbendo Kindergarten, Pucanglaban District, Tulungagung Regency.

No	<i>Sibling Rivalry Reaction Category</i>	Before	After
		f (%)	f %
1	Low	4 (18)	6 27
2	Currently	7 32	11 50
3	Tall	11 50	5 23
	Amount	22 100	30 100

Table 1. above shows that the reaction of *sibling rivalry* before the *construction play* game was carried out, namely most of the respondents had a high category of 11 respondents (50%) and the reaction of *sibling rivalry* after the *construction play* game was 11 respondents (50%) had a medium category.

Data analysis The results of the statistical test of the effectiveness of *Construction Play on Sibling Rivalry Reactions* in Preschool Age Children at the Dharma Wanita Unity Sumberbendo Kindergarten, Pucanglaban District, Tulungagung Regency from August 13-17, 2020 using the *Wilcoxon Signed Rank Test* statistical test, obtained *p value*  $0.002 < = 0, 05$ . So,  $H_0$  is rejected, which means that there is an effectiveness of playing *construction play* on *sibling rivalry* reactions in preschool-aged children at Dharma Wanita Persatuan Sumberbendo Kindergarten, Pucanglaban District, Tulungagung Regency in 2020.

Based on date, it is found that from 22 respondents, 11 respondents (50%) had high *sibling rivalry* reactions , 7 respondents (32%) had moderate *sibling rivalry* reactions , and 4 respondents (18%) had low *sibling rivalry* reactions . Based on table 4.2, it is known that most of the respondents who have high *sibling rivalry* reactions are in class B, namely 8 respondents (53.3%).

A healthy child is a child who is physically, psychologically, socially and spiritually healthy. The pattern of socio-emotional development of early childhood according to <sup>10</sup> includes fear, shame, worry, anxiety, anger, jealousy, grief, curiosity and joy. In preschool age children, the most common health problem is *sibling rivalry* behavior disorder . *Sibling rivalry* is jealousy, competition and fighting between siblings <sup>5</sup>.Parenting patterns and the type of discipline applied by parents will affect the behavior of children where the relationship between siblings will be much more harmonious if parents use authoritarian discipline or democratic discipline so that children will learn why they have to give and receive on the basis of cooperation <sup>7</sup>

The results obtained that 8 respondents (53.3%) sitting in class B have a high category. Class B children aged between 5-6 years should be better able to be kind to their siblings than class A children aged 3-4 years, where their socio-emotional development is still very unstable. However, the role of parents in both parenting and the type of discipline applied will make the behavior of children effective so that the age of the child is not the only determinant. So this research is in line with the theory that parenting and the type of discipline applied by parents will affect children's behavior where the relationship between siblings will be much more harmonious if parents use authoritarian discipline or democratic discipline so that children will learn why they have to give and receive on the basis of cooperation .

Almost half of the respondents who have high *sibling rivalry* reactions are children who have 2 siblings with a total of 7 children (43.8%). Hurlock,( 2013) said that a small number of siblings tends to result in a relationship that is more contentious than a large number of siblings. Because the small number of siblings allows more time together. Unlike the case with a large number of siblings, the frequency of contact

between siblings decreases. Relaxed parental supervision, permissive to children's behavior, allows antagonism and hostility to occur so as to create an atmosphere colored with strife.

Meanwhile, the results from table 3 show that almost half of the respondents who have a high *sibling rivalry* reaction are children who have 2 siblings with a total of 7 children (43.8%). So, this study is also in line with the theory that the number of siblings is very effective in *sibling rivalry* reactions in children, especially the number of siblings is small, where the frequency of contact between siblings will be more and tend to cause disputes. Meanwhile, based on table 4, it is known that most of the respondents who have high *sibling rivalry* reactions are of the same gender as their siblings, with 7 children (53.8%).

According to Hurlock (2013), boys and girls react very differently to their siblings. For example, in the female-female or male-male combination there is more envy than the female and male combination. An older sister may be more talkative and prefer to manage her younger sister than her younger brother. Boys fight more with their brothers than their sisters. During childhood, the often developing antagonisms between the sexes can give rise to endless conflicts. This can make the relationship between siblings and family relationships more effective.

Seen from date, it is known that most of the respondents who have high *sibling rivalry* reactions are of the same gender as their siblings, with a total of 7 children (53.8%). It can be concluded that this study is also in line with the theory that during childhood, antagonism of the same sex often develops, which can lead to endless conflicts. This can make the relationship between siblings and family relationships more effective.

After playing the *construction play* game, it was found that 5 respondents (23%) had a high *sibling rivalry* reaction category , 11 respondents (50%) had a moderate *sibling rivalry* reaction category , and 6 respondents (27%) had a low *sibling rivalry* reaction category .

In this case, parents must have a special method to overcome the problem of *sibling rivalry* that occurs between siblings.<sup>5</sup> explains several things that can be strategies that can be done to deal with *sibling rivalry*, namely: (1) not comparing children with each other; (2) let children be themselves; (3) love children's talents and success; (4) make children able to work together rather than compete with each other, for example like playing together. One of the games that can be done together is a constructive game.

Constructive games or *construction play* are games that use various existing objects to create a particular work such as arranging blocks, legos, puzzles, drawing, cutting or sticking and wax or plasticine<sup>6</sup> In relation to improving the ability of cooperation that stimulates social interaction with peers in the form of cooperation in forming or building what children want. According to Tantriyan, (2013) constructive games can be said to be effective and successful in increasing cooperation skills and reducing *sibling rivalry* reactions which were carried out for three weeks with a percentage of 90.38%.

It can be seen from table 5 that after the *construction play* game, half of the respondents had moderate *sibling rivalry* reactions, namely 11 respondents (50%) which previously almost half of the respondents, namely 11 people (50%) had high *sibling rivalry* reactions . The results of this study are in line with the theory above that by doing a construction game with peers, siblings or groups, it will increase cooperation between children and can be used as a solution to overcome conflicts that occur such as a sense of competition or *sibling rivalry*.

Before playing *construction play* , 11 respondents (50%) had high *sibling rivalry* reactions , 7 respondents (32%) had moderate *sibling rivalry* reactions , and 4 respondents (18%) had low *sibling rivalry* reactions . And after the *construction play* game, it was found that 5 respondents (23%) had a high *sibling rivalry* reaction category , 11 respondents (50%) had a moderate *sibling rivalry* reaction category , and 6 respondents (27%) had a low *sibling rivalry* reaction category . This means that there is a change or decrease after doing the *construction play* game . Based on the results of data processing using the *Wilcoxon sign rank test* with spss 23, the probability result is 0.002 less than the value of = 0.05, it can be concluded that *H<sub>0</sub>* is rejected, which means that there is an Effectiveness of *Construction*

*Play on Sibling Rivalry* Reactions in Preschool Age Children at Dharma Wanita Persatuan Kindergarten. Sumberbendo, Pucanglaban District, Tulungagung Regency.

According to <sup>12</sup> in preschool-aged children the behaviors that often appear are refusing, competing, aggressive, fighting, imitating, cooperative, selfish, sympathetic, angry and others. Providing opportunities for children through constructive play in large or small groups can be used as a solution to overcome conflicts that occur such as a sense of competition or *sibling rivalry*.

Referring after the *construction play* game, it was found that 5 respondents (23%) had a high *sibling rivalry* reaction category , 11 respondents (50%) had a moderate *sibling rivalry* reaction category , and 6 respondents (27%) had a low *sibling rivalry* reaction category . Based on the results of the research above, it can be concluded that playing *construction play* can make *sibling rivalry* reactions effective in preschoolers, this is in accordance with related theories and research.

#### **IV. CONCLUSION**

Prior to the *construction play* game, it was found that of all respondents, most of the respondents had high *sibling rivalry* reactions , namely 11 respondents (50%) with an average result of 62.7% in the medium category. After the *construction play* game was carried out, it was found that of all respondents, most of the respondents had moderate *sibling rivalry* reactions, namely 11 respondents (50%) with an average result of 58% having a moderate category. It can be concluded that there is a decrease in *sibling rivalry* reaction . Where previously, 16 respondents (53%) had high *sibling rivalry* reactions , then after the *construction play* game, only 5 respondents (17%) had high *sibling rivalry* reactions . Referring to the cross tabulation, 18 respondents (60%) had moderate *sibling rivalry* reactions .

The results of the *Willcoxon Signed Rank Test* statistic obtained p value  $0.002 < = 0.05$ . So  $H_0$  is rejected, which means that there is a statistically significant effectiveness between *construction play* on *sibling rivalry* reactions in preschool children at Dharma Wanita Persatuan Sumberbendo Kindergarten, Pucanglaban District, Tulungagung Regency with  $p = 0.002 < (0.05)$ .

#### **V. ACKNOWLEDGMENT**

1. For parents, especially those who have two or more children and their children are of the same sex as their siblings, it is expected to apply *construction play* as a way to deal with the problem of *sibling rivalry*.
2. For the research site, it is hoped that with the results of this study, it is necessary to improve the *construction play* game as an effort to overcome *sibling rivalry* .
3. For further researchers, it is expected to provide other variations of games that children and their friends can do in its implementation to train cohesiveness and cooperation.

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# Student Coping Strategies in Facing Changes during the COVID-19 Pandemic (A Case Study about Lecturing System in STIKes Hutama Abdi Husada Tulungagung)

Evi Tunjung Fitriani<sup>a,1</sup>

<sup>a</sup> Nursing Science Program, STIKes Hutama Abdi Husada Tulungagung, East Java  
<sup>1</sup> evitunjungfitriani@gmail.com\*

## ABSTRACT

**Keywords:**

Coping strategies

COVID-19 pandemic

Online Learning

Students

**Background:** The COVID-19 pandemic made a sudden transition, face-to-face learning in universities was shifted to online learning. The implementation of learning with the online system will have an impact or problem on educators and students. This change requires adjustments from all parties, especially students. These various forms of change are considered to be a stressor for students. Students will face various problems including, unlimited study time, boredom. Consequently, students are required to be able to manage stress that arises through various coping strategies. So as not to experience prolonged stress and interfere with the learning process. This study aims to determine the coping strategies used by students in dealing with Changes in the Lecture System during the COVID-19 Pandemic

**Methods:** : This research uses a qualitative approach with a case study method. Data were collected through written interviews using Google Forms with 312 students at Stikes Hutama Abdi Husada Tulungagung.

**Results:** The thematic analysis technique used resulted in three findings. First, the problems faced by the subjects included understanding online learning materials, readiness for internet network strength and internet quotas, environmental distractions, and changing class schedules. Second, experiencing boredom and psychological problems Third, in adapting to the online lecture system with various problems, students use various coping strategies which can be broadly grouped into three, namely problem-centered coping, emotion-based coping, and emotion-based coping. Interpretation.

**Conclusions:** The findings in this study are expected to be a recommendation for the campus to help students use appropriate coping strategies in managing stress in the face of Changes in the Lecture System during the COVID-19 Pandemic

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## I. INTRODUCTION

The Covid-19 pandemic has had such an impact great in every aspect of human life, without except for the education aspect. Currently in Indonesia many schools and colleges are forced to closed to reduce the spread of Covid-19. For that, teaching and learning activities during the pandemic both student and student levels use online method. This is done for prevention the development and transmission of Covid-19 according to with a circular letter from the Ministry of Education and Culture<sup>1</sup>. In order for students' rights to be fulfilled, one solution the form of learning applied is online learning. Types of learning interactions Online is learning that uses a net. internet with accessibility, connectivity, flexibility<sup>2</sup>.

Anxiety tends to produce perceptual distortions. Which can interfere with the individual in the process learning, so that it can affect the results student learning. As for how it works, it by decreasing memory and concentration attention. In addition to prolonged anxiety It can cause stress that of course can disrupting activities in everyday life (Hasanah, Ludiana, Immawati, & PH, 2020). Stress what new students experience comes from the demands. External or internal. External

demands come from college assignments, the burden of lessons, increased complexity of lecture materials growing. Internally sourced demands of the student's ability to follow Lectures<sup>3</sup>. Stress is a reaction or response. Human psychology when faced with things that it is felt that it has exceeded the limit or is considered difficult to stress response in everyone is different<sup>4</sup>. Students who experience stress during college online can do stress coping strategies to reduce the feeling of stress that is going on. Stress coping can be done in many different ways. It depends on how high the stress is they are experiencing, and the type of coping stress strategies that how do they like to apply when stress hit<sup>5</sup>.

## II. METHOD

This research uses a qualitative approach with a case study method. Data were collected through written interviews using Google Forms with 312 students at Stikes Hutama Abdi Husada Tulungagung

## III. RESULTS AND DISCUSSION

Table 1. Categorization of Research Findings

Theme	Subthema
College problems during pandemics	Exposure to online lecture material is less acceptable Limited access and interaction with lecturers and classmates Learning disorders and environmental distractions Limited access to learning support resources Network issues Changes to college schedules, time out
Impact felt	Experiencing boredom Psychic issues Learning is not optimal Search for reliable internet networks Improved time management Looking for lack of materials and supporting tools for lectures Negotiate with lecturers about lecture schedules <i>Positive thinking, self-talk and self-motivation</i>
Adjustment to the online lecture system during the pandemic	Recreation and relaxation <i>Religious coping</i> Gratitude Share stories Environmental modifications A sense of responsibility Interest and curiosity

Pandemic that occurred at the beginning of the quarter Lecture time resulted in lecturers not fully prepared with the online learning system. At the same time, the university's online lecture platform is experiencing technical glitches. In fact, the online lecture platform is the key to the success of online lectures. As a result, lecturers use alternative media to organize online lectures. Lecturers also use a lot of media such as Whatsapp group to communicate with students and use the platform Others such as Google Classroom, Google Meet, Zoom, Google Drive, YouTube, and Microsoft/Google/Connect Quiz.

Table 2: Student Issues in Online Lectures During a Pandemic

Problems Experienced	Number of responses
Inadequate lecture explanation	155
Lecturers do not fill lectures during scheduled lecture hours	203
Empty scheduled lecture hours	178
Lecturers fill out lectures outside of hours / weekdays	250
Lecturer gives impromptu assignment	285
The burden of college is unnatural	290
It doesn't have a reliable internet network	170
Internet quota budget swells	255
Difficulty coordinating group tasks	276
Lecturers are difficult to contact	244
The lecturer did not respond to the student's message.	132
Slower communication	241
Limitations of interaction and communication with lecturers and friends	215
Administration is more complicated	175
Environmental distractions, disturbances and Learning problem	95

Based on identification of student response, obtained various lecture problems faced by students listed in Table 2. From a number of problems found, can identify several factors. This causes students to suffer. Difficulty understanding the lecture material during the COVID-19 pandemic. Next Presented some of these factors.

One productive way to interpret the impact of the COVID-19 pandemic on The academic life of students is to put their experience into emergency online colleges in the context of their typical development. As once presented by Chickering<sup>6</sup>. in vector theory of development, actually The subjects of this research are undergoing "seven vectors of development", namely: a) competency development; b) management emotions; c) the transition from autonomy to interdependence; d) the formation of mature interpersonal relationships; e) development identity; f) setting the purpose of life; and g) integrity development. Theoretically, It is important to underline that the students pursued the seven "vectors of development" under abnormal conditions, academic emergencies due to the pandemic virus disaster. The findings in This research illustrates how COVID-19 pandemic forces students deploying "emergency mode" in the path of two of the seven "vectors of development": emotion management and competency development.

The problem is, in a number of ways, The COVID-19 pandemic has increased the difficulty weight of emotion management (especially attainment and maintenance emotional well-being) in students the subject of this research. First, the pandemic This has hit the economic conditions of the parents of some of them. Second, The COVID-19 pandemic has changed standard practices in life everyday: from economics to ordinances worship; from the government mechanism to the world of entertainment; and from relationship social to transportation management public. Third, as a research focus In this case, routine teaching and learning activities have been switch procedures in a sudden and helter-skelter manner, from offline to online, to trigger the publication of various negative emotions in students: not only high anxiety and feelings fear, but also disorientation and stress, even shock and feeling overwhelmed. This matter This is in line with the findings of previous research which states that lectures online triggers stress and anxiety<sup>7,8</sup>. If left get out of control, these negative emotions not only can damage physical health and student psychology, but also can threaten the continuity of their studies. The threat of COVID-19 has deployed a number of coping techniques in the field of physical, psychological and academic classified Constructive on students to survive. Constructive coping is A variety of healthy and adaptive efforts to cope with

events and conditions The pressure -- laden <sup>9</sup>

In times of pandemic, coping in students interacts with and is affected by coping on the part of the lecturer. To overcome their own stress, some lecturers use coping techniques in the form of time management, namely by replacing college schedule. In turn, this tactic creates psychological and physical pressure in the student side. That's why they respond by deploying a Counter-coping is an attempt to negotiate with lecturers not to move College to the weekend or into the evening. This symptom confirms <sup>10</sup> that coping is not just a process individually, but also a collective process, and That's when you're coping. Individually, social actors can work together And it can also be conflicted.

#### IV. CONCLUSION

Based on the results of this study, we can conclude that the negative impact students due to the change of the lecture system from offline to online in response to the COVID-19 pandemic. It covers a number of issues, namely: no stable internet connection, declining the quality of lectures given by teachers, inhibited interaction between students, lecturers and college friends, and limited access to learning resources, as well as Distraction, disorientation and demotivation. In adapting to the environment It's a lesson that's full of problems, people. This research subject exerts a variety of combination of coping techniques. Although diverse, coping techniques can be grouped into three main groups strategy, namely problem-focused coping, emotion-focused coping and appraisal-focused coping. There are indications that coping techniques carried out by various stakeholders (students, Lecturers, parents, and government) work synergistically and antagonistically.

#### V. ACKNOWLEDGMENT

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# The Effectiveness of Giving Temulawak Extract Against Increasing Application to Tools Aged 3-5 Years at Posyandu I Sumberejo Wetan Village Ngunut Tulungagung

Ketjuk Herminaju<sup>1</sup>, Pinggih Lubiantori<sup>2</sup>, Berlian Yuli Saputri<sup>3</sup>

*1 Lecturer, Nursing, STIKes Hutama Abdi Husada, Tulungagung  
2 Bachelor, Nursing, STIKes Hutama Abdi Husada, Tulungagung*

\*berlian.yuli.saputri@gmail.com

## ABSTRACT

*Keywords:*

Appetite,  
Toddler,  
Temulawak  
Extract

**Background:** Normal appetite in toddlers is 3 times a day or the equivalent of 1400 cal/day. But not all toddlers have a normal appetite. Signs of symptoms that can be seen if the child lacks appetite are the face looks lethargic, not excited, and weight loss. This study aims to determine the effectiveness of giving temulawak extract to increase appetite for toddlers aged 3-5 years at Posyandu I Sumberejo Wetan Village, Ngunut, Tulungagung.

**Methods:** The method used in this study is an experimental method with 30 respondents who have appetite problems. Data collection was carried out on Jul - August 2020. Data was collected by filling out a questionnaire (pre and post-giving temulawak extract) which was then processed using cross-tabulation in the form of percentages and analyzed and drawn conclusions.

**Results:** To determine the effectiveness of giving temulawak extract to toddlers aged 3-5 years, the Wilcoxon Signed Rank Test statistical test obtained p-value = 0.001 where = 0.05 so that Ho was rejected and H<sub>1</sub> was accepted, which means that there is an effect of giving temulawak extract on increasing toddler's appetite. aged 3 – 5 years at Posyandu I Sumberejo Wetan Village, Ngunut Tulungagung.

**Conclusions:** It was concluded that there was effectiveness of giving temulawak extract to increase the appetite of toddlers aged 3-5 years at Posyandu I Sumberejo Wetan Village, Ngunut District, Tulungagung Regency. After conducting this research, it is hoped that mothers who have toddlers with a poor appetite can give ginger extract so that the child's appetite increases. If the appetite increases, the child's nutritional needs can be fulfilled.

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## I. INTRODUCTION

A toddler is a child under the age of 5 years. At the age of toddlers, children are still fully dependent on parents to do important activities, such as bathing, defecating and eating. The development of talking and walking has improved. But other capabilities are still limited<sup>1</sup>. Toddlerhood is an important period in the process of human growth and development. Development and growth in that period become determinants of the success of the growth and development of children in the next period. The period of growth and development at this age is a time that lasts fast and will never be repeated, because it is called the golden age or golden. Every parent wants their child to grow up normally. Growth is related to the problem of changes in the number, size or dimensions of the level of cells, organs and individuals, which can be measured by the size (grams, pounds, kilograms) of length (cm, meter). The growth and development of the body is very dependent on the fulfillment of nutrients<sup>2</sup>.

The food needed by toddlers aged 3-5 years is 1400 cal / day. Normally the portion of toddler food is 3 times a day, or give a little food but often to meet the nutritional needs of toddlers<sup>3</sup>. 1-year-

olds begin to show desire when it comes to eating. There are times when children like one type of food only and reject other foods. At the age of 2 years children have an erratic diet and begin to have difficulty eating or choosy food. By the age of 3, children often do not eat their meals. Conditions like this that if allowed to cause weight loss and can make children become malnourished<sup>4</sup>.

Appetite is a person's response to food as a vital need for life. This behavior includes knowledge, perceptions, attitudes, and practices towards food and the elements contained in (nutrients), food processing and so on<sup>5</sup>. The main nutrients of balanced nutrition is a need and components that are needed for the growth and development of a child, as a parent will certainly be very happy if the development of a child both verbal, motor, sensory, and psychic can develop as it should. Not all children can develop as expected today in the market is very much instant food produced by factories that provide various flavors and variants but can not meet the status of nutritional needs in children, due to the number of instant foods circulating in the community many children who refuse to eat home-made food so that here arises the problem of decreased appetite in children. As for the signs of symptoms that can be seen if the child lacks appetite is the face looks lethargic, not excited, and weight loss<sup>6</sup>

A child who has a significant decrease in appetite and weight that tends to decrease can cause nutritional problems in children who are usually known for poor nutrition in the general public. The problem of malnutrition in pre-school children is a public health problem since ancient times. 4% of malnourishment cases in Latin America. In Asia, 70% of cases of malnutrition are dominated by toddlers. Riskesdes data shows that in 2013 there were 19.6% of cases of toddlers who were malnourished. This figure increases compared to Riskesdes data in 2010 of 17.9% and Riskesdes in 2007 of 18.4. This problem causes 20-30% of the impact on growth, intellectual development, and productivity, while also directly impacting pain and death<sup>7</sup>

Nutritional problems are generally caused by several factors, the first factor is a direct factor related to nutritional intake or consumption of food to certain nutrients and infectious diseases that psychologically appear as eating problems found in the form of children reluctant to eat or even picky food. The second factor is the indirect factor in the form of maternal knowledge about nutritious food, parental education, income in the family. Some of these factors will have an impact that becomes a decrease in appetite in children and malnutrition disorders in children<sup>8</sup>

One way that can be used in an effort to overcome the problem of decreased appetite in children is by giving temulawak extract, we know that this ginger contains starch, protein, fiber, curcumin salted oil, philander, and tumerol, from some of the contents of this ginger curcumin which is one of the substances found in ginger species that are believed to increase appetite in children. To facilitate the giving of ginger to children the way that can be used is to change ginger in the form of extraction so that it is easier to eat and digest by the body of a child.

Extraction is a process carried out to obtain chemical compounds from plant and animal tissues with solvents that are in accordance with standard extraction procedures<sup>9</sup>. Temulawak is one of the nine types of superior plants of the POM ditjen that has many benefits as a medicinal ingredient. This plant has been widely used by the public at large, both widely used, both used by the community in the maintenance and improvement of health or disease treatment, as well as in the traditional medicine and cosmetics industry<sup>10</sup>. Folk remedies do not use even chemistry. One natural ingredient that can be used to increase appetite is Curcuma xanthoriz. While the essential oil in temulawak efficacious as cholagogum, which is a material that can stimulate the production of bile fluid that serves as an appetite enhancer and anti spasmodicum, which calms and restores muscle spasms.

Curcuma xanthoriz which is believed in addition to those that give hepatoprotective effects can also increase appetite in people who have difficulty eating. Several therapeutic effects have been shown in the journal Turmeric and Curcumin: Biological Actions and Medicinal Application. From the journal there is a statement where Curcuma can provide a lipid digestive effect by faster lipase and increase the secretion of bile glands to remove fat so that it can indirectly accelerate the emptying of the stomach.

## II. METHOD

Research design is essentially a strategy as a guide to guide research throughout the research process. In this study using analytical methods. Analytical method is a research method conducted with the main purpose of explaining about a situation objectively where this research aims to explain important events, occur in the present <sup>11</sup>. The study used a quasi-experiment method with a non-randomized pretest-posttest design approach. This method is used to find out whether the effectiveness of giving temulawak extract to increase the appetite of toddlers aged 3-5 years in Sumberjo wetan Village, Ngunut Subdistrict, Tulungagung Regency by comparing toddlers before being treated (pre) and after being given treatment (post)<sup>11</sup>

	Pretest	Intervention	Posttest
Group	01	X	02

### Intervention

01 : Pretest on toddler appetite

X : Intervention in the administration of temulawak extract

02 : Posttest about toddler appetite.

### Sampling Design

Population is all subjects or objects with certain characteristics to be studied. not only objects or subjects studied but all characteristics or properties owned by the subject or object <sup>12</sup>. The target population is toddlers aged 3- 5 years in Sumberjo wetan Village, Ngunut Subdistrict, Tulungagung Regency. The study sample was 30 entered in Sumberjo wetan Village, Ngunut Subdistrict, Tulungagung Regency in the inclusion criteria. The sampling technique used in this study is purposive sampling and, i.e. sampling 30 who have a purpose or done intentionally but all populations that meet the criteria will be included in this study, if the sample criteria are still insufficient, so take half of the overall sample of 15 samples. In a way half of all samples were treated and the other half were not treated.

The use of this technique is based on knowledge of certain characteristics that have been obtained before. The characteristics or criteria specified in sampling follow the criteria of inclusion and exclusion. Of these criteria, a sample of 30 children was obtained, the number was considered the minimum for experimental research. Inclusions criteria: Some of it is taken from the entire object studied and considered to represent the population <sup>11</sup>. The samples used in this study were some of the toddlers registered in Sumberjo wetan Village, Ngunut Subdistrict, Tulungagung Regency which meets the inclusion and exclusion criteria as follows:

- 1) Is a toddler aged 3 - 5 years
- 2) Parents are willing to intervene which has been socialized
- 3) Toddlers given MP breast milk only
- 4) Be willing to be a respondent

Exclusion criteria where the research subjects cannot represent the sample because it does not qualify as a researcher sample <sup>11</sup>.

- 1) Toddlers who have abnormalities
- 2) Toddlers are not healthy
- 3) Toddler has a problem with the disease heart
- 4) Toddler has skin disease

Sampling techniques: It's a sampling technique. To determine the sample to be used in the study. There are various sampling techniques used <sup>13</sup>. The technique used to use purposive sampling, which is a sampling technique based on a specific purpose. Respondents selected actually have criteria as a sample

### III. RESULTS AND DISCUSSION

The results of the study are presented in two parts covering general data and specialized data. General data presents data on respondents' characteristics. In this study there were 30 toddlers with age and gender categories, while special data presented data on existing variables namely dependent variables and independent variables.

**Tabel 1. Characteristics of Respondents According to General Data**

No	Characteristics	n	%
1.	Age (Years):		
	3	2	7
	4	15	50
	5	13	43
2.	Sex:		
	Male	16	53
	Female	14	47

Observation data made by researchers to respondents is then analyzed, interpreted, and presented in tabulation form so that the following data is obtained.

**Tabel 2. Characteristics of Respondents According to Specialized Data**

Pre Test		Post Test					
		Less		Normal		More	
		n	%	n	%	n	%
Less	0	0		12	54.5	0	0
Normal	2	100		10	45.5	6	100
More	0	0		0	0	0	0
<b>Total</b>	<b>2</b>	<b>100</b>		<b>22</b>	<b>100</b>	<b>6</b>	<b>100</b>

Analysis of the Effect of Increased Appetite for Toddlers Age 3-5 Years. It shows that from 30 respondents the average appetite before and after giving temulawak extract has results with the Wilcoxon Signed Rank Test statistical test, it is obtained a value of  $p = 0.001$  where  $= 0.05$  ( $p \leq 0.05$ ) which means there is an effectiveness of giving Temulawak extract on increasing the appetite of toddlers aged 3-5 years in Posyandu I Sumberejo Wetan Village, Ngunut District, Tulungagung Regency.

Appetite for toddlers before giving temulawak extract from 30 respondents all had appetite within normal limits. For toddlers aged 3-5 years, a balanced nutritional intake is needed, because this affects the process of growth and development of a toddler. Normally the portion of food for toddlers is 3 times a day or give small portions but often and provide variations on each toddler's food, this can help in fulfilling toddler nutrition so that it is fulfilled  $\pm 1400$  cal / day 3. Appetite before treatment was carried out on 30 respondents who all had the same appetite within normal limits, namely 3 times a day. According to the researcher, this is in accordance with the existing theory. After doing research, women's appetite tends to increase more than men. According to 14 eating difficulties in children are more experienced by boys than girls. This result is because boys are more active than girls. So that more men have difficulty. Appetite after treatment was carried out on 30 respondents, it was found that the appetite for female toddlers was more than male. This is because men are more active than women, according to the researchers, this is in accordance with the existing theory. Based on data analysis to determine the effectiveness of giving temulawak extract to increase appetite for toddlers aged 3-5 years, the Wilcoxon Signed Rank Test statistical test obtained  $p$  value = 0.001 where = 0.05 so that  $H_0$  was rejected and  $H_1$  was accepted, which means that there is an effectiveness of giving the extract. Temulawak on the increase in appetite for toddlers aged 3-5 years in Posyandu I Sumberejo Wetan Village, Ngunut District, Tulungagung Regency.

In this study, giving temulawak extract proved to be effective in increasing appetite, supported by researcher Amira entitled temulawak infusion on weight gain of pre-school children. The

population of pre-school age children is 33 samples. Which states that one of the natural ingredients that can increase body weight is the essential oil in churcuma xantoris which is efficacious to stimulate bile which functions to increase appetite.

Curcuma xanthoriz is believed in addition to providing a hepatoprotective effect, it can also increase appetite in people who have difficulty eating. Some of the therapeutic effects have been demonstrated in the journal Turmeric and Curcumin: Biological Actions and Medicinal Application. From the journal there is a statement that Curcuma can provide a faster lipid digestion effect by lipase and increase bile gland secretion to emulsify fat so that it can indirectly accelerate gastric emptying. According to researchers, the use of natural ingredients in an effort to increase children's appetite, especially ginger is highly recommended because there are fewer side effects on the body when compared to processed ginger with chemicals.

#### IV. CONCLUSION

It was concluded that there was effectiveness of giving temulawak extract to increase the appetite of toddlers aged 3-5 years at Posyandu I Sumberejo Wetan Village, Ngunut District, Tulungagung Regency. After conducting this research, it is hoped that mothers who have toddlers with a poor appetite can give ginger extract so that the child's appetite increases. If the appetite increases, the child's nutritional needs can be fulfilled.

#### V. ACKNOWLEDGMENT

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# Correlation of Self-Forgiveness with Quality of Life in HIV/AIDS Patients, Tulungagung, 2020

Lasman<sup>a,1</sup>

<sup>a</sup> Lecturer, Nursing, STIKes Hutama Abdi Husada, Tulungagung \*

<sup>1</sup>lasman@stikestulungagung.ac.id\*

## ABSTRACT

**Keywords:**  
Self Forgiveness,  
Quality of life,  
HIV-AIDS

**Background:** The occurrence of HIV so far has been caused by their own behaviour and attitudes. This certainly will greatly trigger the state of the patient or [atient experiencing changes in risk behaviour both environmental changes and changes in free sex with multiple partners, the use of needles that are not sterile in turn will greatly trigger an increase in HIV-AIDS. After patients are diagnosed with HIV- AIDS, they realize that this HIV- AIDS disease attacks the immune system. In the end the psychological impact on sufferers, such as feeling guilty, helpless, useless and frustrated. This can have an impact on the quality of life both psychologically and socially. **Methods:** The purpose of this research was to determine the relationship of self forgiveness with quality of life in people with HIV-AIDS. Correlation analytic research design with cross sectional approach. The population of HIV -AIDS sufferers contained in the KPA Tulungagung District Health Office was 30 respondents. The sample in this study was taken by total sampling technique. **Results:** Retrieval of self-forgiveness date using the HFS (Heartland Forgiveness Scale) questionnaire sheet and for collecting quality of life date using the WHOQOL -HIV BREF questionnaire, Test date analysis using Spearman- rho. Showed  $p (0,000 < 0,05)$  meaning that there was a relationship between self-forgiveness and quality of life in people with HIV-AIDS with  $r = 0,629$  indicating a strong relationship and a positive correlation. **Conclusions:** It can be concluded that the higher the self- forgiveness, the better the quality of life in people with HIV- AIDS. Increased self-forgiveness can occur when the patient is able to accept his condition, changing himself into an open personality and always apply forgiveness and can forgive or forgive event that have been done by himself or other.

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## I. INTRODUCTION

The incidence of HIV has been caused by their own behavior and attitudes. This will certainly greatly trigger the state of HIV experiencing changes in risky behavior both environmental changes and changes in free sex by changing partners, the use of unsterilized syringes in turn will greatly trigger an increase in HIV-AIDS. Researchers feel interested in this phenomenon supported by the acceptance of information from ODHA itself while sitting in the 3rd semester lecture, which explains that since being exposed to or exposed to the HIV virus feels that his life is no longer useful and intimidated from the surrounding environment.

HIV-AIDS is caused by the HIV virus (Human Immunodeficiency Virus) which attacks the immune system and destroys CD4 cells, making it susceptible to fatal infections especially opportunistic infections<sup>1</sup>. This condition can have an impact on the psychological ODHA such as feeling guilty, useless, and easily frustrated. According to research conducted by<sup>2</sup> people also often feel feeling blue or burden of thoughts such as regret for contracting HIV disease, feeling guilty and helpless, feeling they have a different body shape than before and after hiv. Because they do not consume routine ARV drugs while those who routinely take ARV drugs rarely feel blue feeling and have realized that this disease is the impact of their own behavior.

Data from the United Nations Programme on HIV and AIDS (UNAIDS) found that in 2018, 37.9 million people were infected with HIV, with a calculation scale of 79% (29.9) of whom knew

their HIV status. In the same year 23.3 million people living with HIV accessed antiretroviral therapy, with a calculation scale of 62% (14.4) of whom were aged >15 years, 54% (12.6 people) of children aged 0-14 years. By the end of 2018 an estimated 79% (29.9 million) people were living with HIV, 23.3 million people (62% of 14.4 million) received ARV therapy and 53% (20 million) had achieved HIV virus suppression <sup>3</sup>

Based on data from the HIV/AIDS &STI Information System (SIHA) the number of HIV cases was reported that in December 2018 the number of cases of infected people was 13,139 people. The highest percentage of HIV infections was reported in the 25-49 age group at 69.6% (9,144), followed by the 20-24 age group at 17.0% (2,233), and the ≥ 50 age group by 13.4% (1,762). While in AIDS as many as 884 people with the highest percentage in the age group of 30-39 years 52.0% (460 people), followed by the age group 40-49 years 41.0% (362 people), and the age group 50-59 years 7.0% (62 people). According to the ministry of health 2018 the cumulative number of HIV infections is 327,282 (51.1%). East Java Province is ranked second after DKI Jakarta with a population of 48,241).

The number of HIV / AIDS cases in Tulungagung Regency, East Java, continues to grow along with the findings of VCT (Voluntary Counseling and Testing) results in dr Iskak hospital and Campurdarat Health Center and roving screening activities conducted by health workers, increasing to 2,638 people (P2PM Dinkes Tulungagung in antaranews daily news, 2019). Kasi P2PM Tulungagung District Health Office, Didik Eka revealed that every month infected patients are found about 30-50 people. He added that at the end of 2019 there were as many as 262 people infected with HIV. Transmission of HIV /AIDS is mostly due to sex with a ratio of about 95%. The rest, only a few patients who contracted the virus due to the use of syringes (pensun) carelessly. Of the thousands of people with HIV / AIDS, the majority are of productive age, with the most male sex.

HIV is a chronic disease that impacts the life of HIV such as decreased immune function, the occurrence of social deviations, and decreased life expectancy. So in this case the quality of life of ODHA is very important to note. The quality of life in HIV is very vulnerable to decrease due to physiological and psychological problems. Physiological problems in HIV include slow weight loss, swollen lymph nodes, armpits and groin, frequent muscle pain, headaches and until there is an increase in body temperature. While in psychological factors in the quality of life there are things that are often felt, such as the emotional state of HIV is unstable because of limitations that make HIV feel frustrated or disappointed and cause positive feelings, self-esteem, self-image, spiritual, cognitive and depressive problems <sup>4</sup>.

Therefore, treatment in HIV / AIDS patients not only focuses on physical condition but also psychosocial problems experienced by HIV so as not to have an impact on the decline in quality of life <sup>5</sup>, The inability of HIV to perform daily activities and even the inability to do work can indicate that HIV is experiencing a decrease in quality of life <sup>6</sup>.

Advances in HIV knowledge, detection methods, and treatment can provide great hope for HIV to have a long life. So that the government implements HIV / AIDS control programs by increasing the discovery of HIV cases early, increasing the scope of ARV therapy and chronic care, improving the quality of health services, advocating for local governments to reduce the burden of costs related to HIV / AIDS testing and treatment services <sup>7</sup>

Quality of life related to hiv health is an interesting concern and can be used as one of the indicators of the success of therapies that have been given. WHO has collaborated with UNAIDS, proposing that improving quality of life should be one of the main goals in providing care and support for HIV <sup>8</sup>. The importance of acceptance of the condition can improve the health and well-being of patients, for that ODHA must be able to release bitterness, feelings of guilt, regret, anger and hatred or turn negative feelings into positives in one way through self-forgiveness. Self-forgiveness has also been found to be beneficial in a person's physical well-being and psychological well-being, such as

depression levels, low anxiety, better life satisfaction and mental health and is associated with positive relationships such as better perception of social support<sup>9</sup>

In a way self-forgiveness ODHA will be motivated to change his behavior for the better, such as not having free sex, not using syringes alternately, not holding a grudge to transmit the disease to others, and most importantly not blaming himself. This can improve their health both physically and psychologically and improve the quality of life in HIV. Several studies have proven that self-forgiveness is very important as one of the conditions for being mentally healthy<sup>10</sup>. Based on the above problems, researchers want to find out how self-forgiveness relates to quality of life in people with HIV-AIDS in the Tulungagung Health Office working area in 2020.

## II. METHOD

This study was conducted on August 11-13, 2020 at the KPA of the Tulungagung District Health Office. Qualitative research design with a Cross Sectional approach. Populaasi research all respondents in KPA Tulungagung District Health Office as many as 30 respondents. Independent self-forgiveness variables and dependent quality of life variables. The variables analyzed are independent variables, namely self-forgiveness which has an ordinal scale and dependent variables that are quality of life that have an ordinal scale. If both variables have an ordinal scale, the bivariate analysis used is the Spearman Rho test. Decision-making criteria:

a. If p value (< 0,005) means H0 is rejected and H1 is accepted which means there is a relationship of self-forgiveness with the quality of life in PEOPLE with HIV-AIDS in the KPA Work Area of Tulungagung District Health Office in 2020. If p value (> 0,005) means H0 is accepted and H1 is rejected which means there is no self-forgiveness relationship with the quality of life in PEOPLE with HIV-AIDS in the KPA Work Area of Tulungagung Regency in 2020.

## III. RESULTS AND DISCUSSION

Table 1 Characteristics of respondents in KPA Tulungagung District Health Office

Number	Characteristic	Frequency	Percentage
1.	Age		
	20-30	6	20,0
	31-40	13	43,3
	41-50	11	36,7
2.	Gender		
	Man	13	43,3
	Woman	17	56,7
3.	Level of Education		
	Elementary School	4	13,3
	Junior High School	11	36,7
	Senior High School	14	46,7
	PT	1	3,3
4.	Marital Status		
	Married	15	50,0
	Unmarried	9	30,0
	Divorce	3	10,0
	Divorce dead	3	10,0
5.	Emotional Factors		
	Low	6	20,0
	Medium	12	40,0
	High	12	440,0
<b>Total</b>		<b>30</b>	<b>100</b>

Based on the table above it can be interpreted that a total of 30 respondents in the KPA of Tulungagung District Health Office, the majority of respondents aged 31-40 years as many as 13 respondents (43.3%), for gender dominated by women as many as 17 respondents (56.7%), with the level of high school education as many as 14 respondents (46.7%), for the status of marriage majority married as many as 15 respondents (50.0%) and supported by emotional factors dominate in high emotional factors as many as 12 (40.0%).

Table 2 distribution of self-forgiveness frequency in KPA Tulungagung District Health Office

No	<i>Self-Forgiveness</i>	Frequency	Percentage (%)
1	<i>Low Forgivrnness</i>	3	10,0%
2	<i>Moderate orgiveness</i>	11	36,7%
3	<i>High Forgiveness</i>	16	53,3%
	<b>Total</b>	<b>30</b>	<b>100%</b>

**Sumber: Data Primer 2020**

Based on the table above shows that out of 30 respondents there are 16 respondents (53.3%) experiencing High Forgiveness.

Table 3 distribution of quality of life frequency in KPA Tulungagung District Health Office

Nu mb er	Quality of Life	Frequency	Percentage (%)
1	Less	2	6,7%
2	Enough	7	23,3%
3	Good	21	70,0%
	<b>Total</b>	<b>30</b>	<b>100,0%</b>

**Source: Primary Data, 2020**

Based on the table above shows that out of 30 respondents there are 21 respondents (70.0%) who experience a good quality of life. Based on the table above shows that out of 30 respondents have High Forgiveness with a good quality of life as many as 15 respondents (50.0%). Spearman Rho statistical test results obtained significant value data or sig. (2-tailed) of 0.000, as the basis of decision-making above, it can be concluded that there is a significant (meaningful) relationship between self-forgiveness and quality of life. Furthermore, from the above output it is known that correlation coefficient (correlation coefficient) of 0.629 which means this value signifies a strong relationship between self-forgiveness and quality of life in people with HIV-AIDS.

Table 4 distribution of the frequency of self-forgiveness relationship with quality of life in PEOPLE with HIV-AIDS in the KPA Working Area of Tulungagung District Health Office in 2020.

Self-forgiveness		Quality of life			Total
		Less	Enough	Good	
Self-forgiveness	Low	1 (3,3%)	2 (6,7%)	0 (0%)	3 (10,0%)
	Moderate	1 (3,3%)	4 (13,3%)	6 (20,0%)	11 (36,7%)
	High	0 (0%)	1 (3,3%)	15 (50,0%)	16 (53,3%)
	<b>Total</b>	<b>2 (6,7%)</b>	<b>7 (23,3%)</b>	<b>21 (70,0%)</b>	<b>30 (100,0%)</b>

Based on the results of the study in the table above obtained the percentage results that respondents who have self-forgiveness with the category of high forgiveness as many as 16 respondents (53.3%) out of a total of 30 respondents. In this study showed the average of PEOPLE with HIV-AIDS in KPA Tulungagung District Health Office has high self-forgiveness (high forgiveness). Some of the factors that affect self-forgiveness are emotional factors.

Supported by cross tabulation on showed that out of 30 respondents who had self-forgiveness with the category High Forgiveness at the level of high emotional factors as many as 9 respondents (30.0%). This means that ODHA in the KPA of Tulungagung District Health Office has a level of emotion that tends to be high.

Emotions are reactions that can be positive or negative as a result of stimuli from within themselves and from outside. 11 mentions that to bring about forgiveness in individuals requires the ability to control emotions such as hatred, anger, rejection and the desire for revenge. The results of this study are supported by research by 12 that emotions play a role in demanding themselves and others to learn to acknowledge and appreciate the feelings of themselves and others and to respond to it is needed effective ways such as positive thinking in life so as to cause high respect for yourself. In line with 13 research that explains that individuals who are able to nurture emotions that are owned and able to reduce negative emotions can be said that the individual has a high personal purpose and personal growth.

In this case researchers argue that managing positive emotions can give rise to empathy and love and build positive values in the self so that an individual can achieve well-being. Based on the results of the study in the table above the distribution of quality of life frequency in people with HIV-AIDS in KPA Tulungagung District Health Office showed that out of 30 respondents who have a good quality of life as many as 21 respondents (70.0%).

One of the factors that affect quality of life is age and evidenced by the results of cross tabulation shows that of 30 respondents who have a good quality of life at the age of 31-40 years as many as 10 respondents (33.3%). With the results of this study in the KPA of the Tulungagung District Health Office showed respondents were of productive age. Shaw's theory (2016) suggests that the age of over 24 years a person is said to be able to make decisions in dealing with problems, both personal problems related to the conditions he faces.

The results of this study are in accordance with research conducted by 2 that where older age will be increasingly able in the process of maturity of a person both physically and psychologically which affects the emergence of empathy and emotional intelligence. Researchers argue it has to do with a person's mindset and maturity to assess the type of stressor that comes along, adaptability and adaptive coping mechanisms used to influence a person's behavior in making decisions.

Next one of the factors that affect quality of life is gender and evidenced by cross tabulation of 30 respondents the majority are women as many as 13 respondents (43.3%). The above data can be concluded that those exposed to the HIV virus are female, this is because they are infected housewives through husbands. This is in contrast to studies involving similar respondents showing the number of respondents dominated by men as much as 55.2%. The results of this study are also different from research conducted by 14 involving similar respondents showed the number of respondents dominated by male respondents as much as 66.29%.

Researchers argue that this is very likely to happen because researchers do data retrieval during active working days that are on Wednesdays, Thursdays and Fridays, so researchers assume HIV is working and represented by couples who do not work (wives). This happened not by chance but in the KPA of the Tulungagung District Health Office, the majority of respondents were women.

Furthermore, one of the factors that affect quality of life is the level of education and evidenced by the results of cross-tabulation at the education level, most respondents have a middle school

education level (Junior High School) as many as 11 respondents (47%). Education has been identified as determinants of quality of life. According to the results of 15 that respondents with low education are in all categories of quality of life, but education is having a good quality of life.

This proves that it is in accordance with the theory that the higher education a person tends to have a good quality of life. A person whose education is higher has a better quality of life 16. Low education will interfere in getting health education in implementing healthy living and treatment compliance 17. The results of the same study were revealed by 18 that there is an influence on the level of education with quality of life in people with HIV-AIDS.

Researchers argue that the level of education can improve the ability of HIV to perform problem solving and decision-making actively related to the disease and its handling because a person with a high level of education and long suffering from the disease already has the adaptability and adaptive coping mechanisms used to make the right decisions regarding the type of treatment so that it affects the process of self-acceptance and emotional intelligence, This will indirectly improve the quality of life of the patient.

Furthermore, the factor that affects quality of life is marital status and evidenced by the results of cross-tabulation of marital status listed shows that of 30 respondents married status as many as 12 respondents (50%). Marital status is one of the determining factors of quality of life outcomes. Marriage is related to affection, mutual help in physical and mental matters.

16 suggests marriage or marriage can create a sense of completeness and satisfaction with the support they get. Similar research results are also supported by 2 suggests that the source of support to increase the confidence of HIV comes from couples and from counselors and family support and social environment. Researchers argue that someone who is married or unmarried / divorce / divorced has an adequate source of coping, both from family, social support, counselor support from the KPA of Tulungagung District Health Office who has a role in increasing one's confidence not only from the couple.

People with HIV-AIDS understand that the disease in their body cannot be cured, but there are drugs to suppress the amount of the virus and not kill the virus. In this study it is known that some respondents have a cauldron of good living. Respondents in the KPA of Tulungagung District Health Office have rarely felt pain or fatigue when doing active activities at work because they routinely take ARV drugs every day, so they will indirectly feel the difference between taking ARV drugs or not. They also rarely feel blue feeling because they have realized that this disease comes and is in their body due to their own behavior, so they do not blame themselves and others.

Most people with HIV-AIDS in the KPA of Tulungagung District Health Office are also members of the Hope Community Peer Support Group (KDS) and are active in activities organized by health centers related to HIV-AIDS so that they can get along with fellow sufferers and they will not feel worried about their future, especially with death because they continue to draw closer to God and worship in accordance with their respective beliefs.

Based on the results of current research, self-forgiveness is known to have a significant relationship with quality of life in people with HIV-AIDS in the KPA of the Tulungagung District Health Office. Where the correlation result with the value  $p = 0.000$  and the correlation coefficient  $r = 0.629$  which means it has a strong relationship and the direction of the positive relationship.

Self-forgiveness is a form of perceived error so that the response in the form of thoughts, feelings, and motivations due to the behavior or mistakes made changed from negative to positive 19 Based on cross-tabulation on showing that the more dominant appears to be people with HIV-AIDS whose self-forgiveness is high has a good quality of life as many as 15 respondents (50.0%). This is in accordance with 20 stating that forgiveness can affect physical health and the factor that influences self-forgiveness is the emergence of emotions. When individuals who have high empathy, where they try to position themselves in other individual situations and conditions, and understand and feel the

experiences of others.

Then do not want to continue to fall and blame himself with the current health condition, accept with what happened and routinely consume ARV drugs will be able to control emotions and try to be an open person, forgiving and not revenge and continue to draw closer to God. This is what can support their health both physically and psychologically and improve their quality of life 10

Quality of life in general is an important indicator that is always used to evaluate the results of a treatment. A person's quality of life cannot be defined with certainty, only the individual is able to define it because the quality of life is subjective. They often realize that they cannot escape feelings of anger and hatred for individuals who have infected them or because of their own behavior. In this study, most respondents who had high self-forgiveness also had a good quality of life, which was 21 respondents (70.0%). This is because the respondent has been able to accept his condition and no longer blame himself, does not harbor a sense of revenge and routinely consume SRV drugs.

This can be concluded if self-forgiveness increases, the better the quality of life for people with HIV-AIDS. The results of this study are also in line with research conducted by 2, suggesting that increased self-forgiveness in HIV can occur if the patient is able to accept his condition, turn himself into an open person and always apply forgiveness and can forgive or forgive for events that have been done by himself and others, so as to neutralize negative feelings into positives that have an impact on the condition. improving the quality of life.

#### IV. CONCLUSION

1. Self-forgiveness of HIV-AIDS sufferers in the Tulungagung District Health Office KPA consisting of 30 respondents obtained results with the High Forgiveness category as many as 16 respondents (53.3%), moderate forgiveness category as many as 11 respondents (36.7%) and low forgiveness category as many as 3 respondents (10.0%).
2. Quality of life in PEOPLE with HIV-AIDS in KPA Tulungagung District Health Office obtained results with the category of good quality of life as many as 21 respondents (70.0%), the category of quality of life is enough as many as 7 respondents (23.3%), and the quality of life category is less than 2 respondents (6.7%).
3. Analyzed using spearman rho statistical tests it is found that the value of  $p$  ( $0.000 < \alpha (0.05)$ ) so that  $H_0$  is rejected and  $H_1$  is accepted. From the results of the study it was concluded that there is a relationship between self-forgiveness and quality of life in people with HIV-AIDS in the KPA Working Area of the Tulungagung District Health Office in 2020. The correlation coefficient level is 0.629 which means the level of strong relationships. In addition, spearman rho statistical test results showed the relationship had a positive direction.

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# Effect Therapeutic Touch on Anxiety Patients With Chronic Kidneys Diseases (CKD) With Hemodialysis

Purnomo<sup>a,1,\*</sup>, Maksum<sup>b,2</sup>, Devangga Darma Karingga<sup>c,3</sup>

<sup>a</sup>Program Studi Profesi Ners, STIKes Hutama Abdi Husada, Tulungagung

<sup>b</sup>Program Studi Ilmu Keperawatan, Universitas Ngudi waluyo Ungaran, Semarang

<sup>c</sup>Master Student, Universitas Airlangga, Surabaya

<sup>1</sup>purnomo@stikestulungagung.ac.id\*;

\*Corresponding Author

## ABSTRACT

**Keywords:**

Anxiety

Chronic Kidneys Disease

Therapeutic Touch

**Background:** Condition Patients with Chronic Kidney Diseases (CKD) is an kidneys are sufficiently or unable properly function which results accumulations metabolism wastes on kidneys. Condition patients causes by Chronic Kidney Diseases is undergoing which hemodialysis. Patients with Chronic Kidney Diseases is undergoing hemodialysis can be common psychological disorders, such as anxiety to changes mental health status, self acceptance, life threats, stress and depression. Intervention Therapeutic Touch is one of therapy due to reduce anxiety in patient.

**Methods:** Design in this study used pre-post test quasi experiment design without control group. Sample in this study were 45 patients selected using consecutive sampling. Data were collected in control group and intervention group with questionare Hamilton Anxiety Rating Scale (HARS), data were analyzed using Wilcoxon Paired Test.

**Purpose :** The Purpose in study was to determine effect therapeutic touch on reducing anxiety level in patsients Chronic Kidneys Diseases undergoing hemodialysis

**Results:** The result showed and decrease patients anxiety level after intervention group with therapeutic touch with  $p = 0.000 < \alpha = 0,005$  in the control group and intervention group. There was significant decrease of anxiety level stress pre test and post test intervention between pre test dan post test intervention group.

**Conclusions:** Intervetion therapeutic touch used evidence based for profesionalisme to managing problem related physical and psychological rehabilitation on diseases. Therapeutic touch is bio energy alignment activities brain structures such as sensory processing, attention, and memory, and can stimulate complex cognition and multisensory integration. Intervention therapeutic touch in every day can be increased calm.

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## I. INTRODUCTION

Chronic kidney disease (CKD) is one of health problems experienced by entire in world population<sup>1,2</sup>. Chronic kidney disease (CKD) is condition which kidneys can't function properly or sufficiently, resulting buildup of metabolic wastes marked by gradual loss of kidney function over time<sup>3</sup>. Chronic kidney disease (CKD) causes complications and increase the occurrence of cardiovascular disease (CVD), hyperlipidemia, anemia and death<sup>1,2,4</sup>. Chronic kidney disease

(CKD) to occurs slowly and uncommon for patients be unaware of their condition, will continued followed worsening of kidney function if condition to get proper care and treatment<sup>5</sup>. Reduced by morbidity and mortality on patients with Chronic kidney disease (CKD) needed avoid complications and as an optimal follow-up treatment with hemodialysis<sup>6</sup>. Chronic Kidney Disease (CKD) is a top ten and global burden of disease causes of death on developed countries<sup>1,7</sup>. Epidemiological studies in America shows that the cost of kidney failure patients in America reaches 35.4 billion US \$, while in England: 1.44 billion US\$<sup>1</sup>

World Health Organization (WHO), explained is still increased, even from 2009-2011, CKD sufferers increasing, it is estimated that causes death up to 36 million people in the world. According data from United State Renal Data System (USRDS) in the United States, prevalence of Chronic Kidney Disease (CKD) increased by 20-25% every year<sup>8,9</sup>. Prevalence of Chronic Kidney Disease (CKD) in Indonesia continues to increased every year, estimated that is approximately 2%, consisting of 0.3% in 35-44 year age group, 0.4% in the 45-54 year age group, and the 55-74 years group 0.5%, and highest in the age group  $\geq 75$  years 0.6%. Based on reported Indonesian Renal Registry (IRR) in year 2013 there were 15,128 new cases chronic kidney disease, and increased to 17,193 cases in 2014<sup>10</sup>. Highest provincial incidence in a row is Central Sulawesi 0.5% Aceh, North Sulawesi, Gorontalo 0.4%, then Central Java, West Java, Yogyakarta Special Region, East Java 0.3%, and Banten 0.2 %<sup>11</sup>. Data above patient with Chronic Kidney Disease (CKD), undergoing dialysis are final stage of the disease or End Stage Renal Diseases (ESRD)<sup>10,12</sup>. In Indonesia Chronic Kidney Disease (CKD) is more caused by diseases hemodynamic disorders (hypertension), metabolic (diabetes mellitus, dyslipidemia), infection or inflammation (pyelonephritis), congenital (polycystic), or obstruction (tumor, nephrolithiasis)<sup>13</sup>. Chronic Kidney Disease (CKD), often not realized by patient condition his experiencing, this causes patient to worsen with kidney function on condition, patient needed to received appropriate care and treatment<sup>5</sup>.

Medical management patient with Chronic Kidney Disease (CKD) is a kidney transplantation<sup>14</sup>. In addition kidney's transplantation, dialysis therapy for patients with Chronic Kidney Disease (CKD), both acute and chronic, patients with dialysis purposed treatment medical emergencies can't treatment conventionally, patient's with condition and maintainece, improve to patient's quality of life until kidney's performing transplantation<sup>14,15</sup>. Dialysis therapy lasts a long time causes changes in patient's condition. These changes are limitations in some body functions affected physical such as fatigue or fatigued, muscle cramps, limitation of motion, nausea and vomiting, decreased nutritional status, decreased body resistance, infections, etc<sup>16</sup>. Other then, patients also experience psychological changes such as anxiety about changes health status, self acceptance, life threats, stress and depression<sup>16</sup>.

Preliminary study conducted in January 2018 found total visited patients undergoing dialysis. Through direct interviews with 10 patients who are undergoing dialysis, with observation and questionnaires HARS (Hamilton Anxiety Rating Scale) to 10 pastient CKD patients who are undergoing dialysis therapy, an overview of problems experienced almost patients CKD on dialysis obtained, namely anxiety problems consisting of 3 people with severe anxiety, 5 people with moderate anxiety and 2 people with mild anxiety. Signs and symptoms that appear include feelings of sadness, disappointment, decreased motivation, easily tired, feelings of guilt, feeling tired, bored with current health conditions, and difficulty getting good quality sleep<sup>17</sup>. Anxiety can reduced motivation and lead failure of dialysis therapy.

Anxiety causes increased hormone cortisol in the body which can interfere with immune system. Anxiety at long time in patients will caused health problems related to physical and psychological problems, causing the prognosis disease<sup>17,18</sup>. Impact increasing hormone cortisol has implications for physical responses such as increased blood pressure, headaches, impaired concentration, difficulty thinking, tension, and fatigue. Vasoconstriction will increase the workload of the heart and kidneys, this will causes new problems<sup>19</sup>. Reduced anxiety problems for patients on dialysis, intervention in nursing is needed reduce anxiety patients who are on dialysis therapy. Generates intervention strategies can used reducing health problem services<sup>20</sup>. Several interventions in

nursing research can be used to reduced anxiety levels in patients with CKD who are undergoing hemodialysis are progressive muscle relaxation, murotal therapy, Touch Therapeutic (TT), music therapy, yoga, and aromatherapy which have been shown to be effective in CKD patients to reduce anxiety, stress and anxiety<sup>21-24</sup>.

Therapeutic touch is energy field alignment to achieve harmony, therapeutic touch is based on four assumptions.<sup>23,25</sup>. First, that living things (humans) an open energy system. Second, human anatomy is bilaterally symmetrical. Third, that illness or disease a condition in which an individual's energy imbalance occurs. Fourth, humans have a natural ability to change and transcend their living conditions<sup>23</sup>. Touch therapeutic (TT), in patients will get calm or relaxation in the first 2 to 5 minutes, some clients can fall sleep or feel anxiety reduced after being given Touch therapeutic<sup>26,27</sup>. In accordance with description above, researchers aimed to prove the effect of Touch Therapeutic on anxiety in CKD patients on hemodialysis.

## II. METHODE OF RESEARCH

Design this study using Quasi Experimental Design Pre-Post Test Without Control Group Design to prove the effect of Touch Therapeutic intervention on anxiety in CKD patients undergoing hemodialysis. The design in this study was to use a pre and post test of giving touch therapy intervention "Touch Therapy" for 10 minutes. The population in this study were patient CKD (Chronic Kidney Diseases) patients who underwent hemodialysis at RSUD November-December 2018. Techniques sampling using simple random sampling. After assigning the subjects according to the inclusion and exclusion criteria, the researcher ordered the attendance of the study subjects in the hemodialysis room. Anxiety measurement uses the Hamilton Anxiety Rating Scale (HARS) questionnaire which contains 14 question assessment items. Data analysis using spss for windows 22.0 using t-test and mann whitney u in CKD patients who are doing hemodialysis.

## III. RESULT AND DISCUSSION OF RESEARCH

Characteristics research subjects describe the distribution of research subjects based on age, gender, education, occupation, marital status, and length HD therapy and Wilcoxon Paired Test.

Table 1. Characteristics of research subjects, age, gender, education, Occupation, Marital Status and Length of Hemodialysis

Variable	Frequency	Percentage
<b>Age</b>		
25-34 year old	3	6,7
35-44 year old	16	35,6
45-54 year old	12	26,7
55-64 year old	14	31,1
<b>Total</b>	<b>45</b>	<b>100</b>
<b>Gender</b>		
Male	29	64,4
Female	16	35,6
<b>Total</b>	<b>45</b>	<b>100</b>
<b>Education</b>		
Primary school	15	33,3
Junior High School	13	28,9
Senior High School	16	35,6
Bachelor	1	2,2
<b>Total</b>	<b>45</b>	<b>100</b>

Variable	Frequency	Percentage
<b>Work</b>		
Civil Servant	1	2,2
Employee	12	26,7
Entrepreneur	14	31,1
Retired	3	6,7
Does Not Work	15	33,3
<b>Total</b>	<b>45</b>	<b>100</b>
<b>Marital Status</b>		
Married	41	91,1
Divorced	3	6,7
Not Married	1	2,2
<b>Total</b>	<b>45</b>	<b>100</b>
<b>Hemodialysis</b>		
<b>Duration</b>		
< 1 Year	23	51,1
1,5 – 2,5 Year	12	26,7
> 3 Year	10	22,2
<b>Total</b>	<b>45</b>	<b>100</b>

Data on table 1. Age Characteristics data obtained is most patients were aged 35-44 years as many as 16 (35.6%) respondents. Results research showed that age patients with CKD greater at age of 35-44 years. CKD not related to gender, but results of study show that male has a lower quality of life than female. Patients undergoing hemodialysis have a low quality of life. Men have a free life and social intercourse than women have a heavy type work, causing them to vulnerable disease and unhealthy lifestyle patterns with lack of rest and high stressors causing decreased endurance and causing diseases, such as hypertension, diabetes and others that can cause the risk of CKD in addition to other habits such as consuming alcohol, energy supplements and smoking<sup>28,29</sup>.

Data on characteristics sex patient obtained most data of patients with male sex, namely 29 (64.4%). Results research showed most of CKD patients were productive age where in productive age they often ignore things that are not good health, individual productivity will require individuals to work harder at work. Health awareness is not initial priority for kidney failure. In productive age, illness is considered normal early CKD patients before chronic symptoms appear, the sufferer is not aware because complaints have not shown specific signs and symptoms<sup>30-32</sup>. Young people with CKD will show better quality of life because their physical condition is better than older people. Age is closely related to the prognosis of disease patient's life expectancy, age 55 years, complications tend to occur can aggravate performance of kidney function compared to those aged 45 years<sup>33-35</sup>.

Data on characteristics respondents based an education obtained data as many as 16 (35.6%) respondents with a high school education level. Education is a factor affected person's level of knowledge, level education possessed is closely related to patient's knowledge and understanding of CKD disease, order to maintain his life always obeying hemodialysis therapy<sup>36-40</sup>. Has been carried out and with good knowledge will be able more rational being effective carrying out hemodialysis therapy programs.

Data on characteristics respondents based on work obtained data as many as 14 (31.1%) respondents work as entrepreneurs. On characteristics work, there is no relationship to incidence of kidney failure, but some respondents said that previously work which quite heavy will affected

stressor which is quite high. Research respondents stated that reason patient stopped working because he was diagnosed with CKD and had undergoing hemodialysis therapy program twice a week. This condition causes patient not work hard enough because will affected quality of work he decides quit his job and focus on hemodialysis therapy program<sup>41-46</sup>.

Data characteristics respondents based on marital status data obtained that most respondents were married 41 (91.1%) respondents. The condition of patients with hemodialysis requires family support, especially the head of the family to family members who have a higher psychological burden with CKD conditions experienced by the patient. Positive support will be able to help patients in increasing motivation to always think positively to reduce the level of stressors of patients that cause anxiety<sup>47-49</sup>. Patients with divorced status, responsibility lies with themselves so that stressors experienced patients will being higher<sup>18,46</sup>.

While the data on characteristics respondents based on length of HD obtained at most is less than 1 year 23 (51.1%) respondents. Psychological changes can seen from physical conditions and behavioral changes including: patients always feel confused, feel insecure, dependent and become passive individuals. Two thirds patients undergoing dialysis therapy never return activities or work before undergoing hemodialysis. Patients often experience problems such as: loss of work, income, freedom, decreased life expectancy and sexual function so that it can cause anger and will lead to a state of anxiety as a result of the systemic disease that preceded it<sup>50</sup>. Anxiety hemodialysis patients also related to length hemodialysis because longer patient undergoes hemodialysis, more able patient to adaptation hemodialysis machine<sup>51-53</sup>.

Table 2. Characteristics Respondents on Pre-test and Post-Test Therapeutic Touch Intervention

Variabel	Frekuensi Pre Test	Per센 Pre Test	Frekuensi PostTest	Per센 Post Test
Tidak Cemas	2	4,4	30	66,7
Cemas Ringan	12	26,7	11	24,4
Cemas Sedang	25	55,6	3	6,7
Cemas Berat	6	13,3	1	2,2
Jumlah	45	100	45	100

Data on table 2. shows respondent's data on pre-test and post-test Therapeutic Touch intervention as follows, data pre-test respondents obtained most experienced moderate levels anxiety 25 (55.6%), mild anxiety 12 (26.7%), anxiety weight 6 (13.3%), and not anxious 2 (4.4) respondents. Meanwhil, effect after being Therapeutic Touch intervention, most data obtained were not anxious, namely 30 (66.7%), mild anxiety 11 (24.4%), moderate anxiety 3 (6.7%) and severe anxiety 1 (2.2% ) respondents. In the pre- and post-test research data according to Therapeutic Touch theory, there are differences where the Therapeutic Touch intervention is an alignment of bio-energy that can activate the structure of the brain so that it will enable sensory processing, attention, and memory, and can stimulate complex cognition and memory<sup>23,54-56</sup>

Table 3. Effect characteristics of the pre-test and post-test Therapeutic Touch Intervention

	Paired Differences						Sig. (2-tailed)	
				95% Confidence Interval of the Difference				
	Mean	Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1 PRE TEST - TEST	POST	1,333	1,066	,159	1,013	1,654	8,390	44 ,000

Data on table 3. obtained by pre-test and post-test patients Therapeutic Touch intervention on anxiety level patients undergoing hemodialysis using the Wilcoxon Paired Test obtained  $p\text{-value} = 0.000 <= 0.05$  so can be concluded that there is an effect Therapeutic Touch intervention on patients undergoing hemodialysis reduces patient's anxiety level, so this proved that Therapeutic Touch intervention can reduce the anxiety level patients undergoing hemodialysis. Therapeutic Touch is technique using professional structure nursing interventions which can be used as an intervention in nursing reduced anxiety levels in patients with hemodialysis<sup>23,54-56</sup>. Therapeutic Touch can be used in emergency conditions or in conditions allow it used by patients reducing anxiety level patients undergoing hemodialysis, intervention Therapeutic Touch reducing stress and anxiety levels in patients on hemodialysis.

#### IV. CONCLUSION

Based on results research and analysis has been carried out in this study, it can be concluded as:

- This study showed a significant effect of giving Touch Therapeutic on reducing anxiety in the intervention room hemodialysis at RSUD.
- Anxiety influenced by several factors including; Age, education, gender, marital status, occupation and duration of therapy.
- Psychological problems that often arise in CKD (Chronic Kidney Diseases) patients with hemodialysis are anxiety with varying levels from not anxious, mild, moderate to severe.
- Touch Therapeutic an independent nursing intervention
- Touch Therapeutic a complementary nursing intervention form harmonizing the bio-energy field that can provide physiological and psychological effects, namely natural calm and produce a decreased in anxiety level.

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# The Effectiveness of Counseling on the Characteristics of Cerebro Vascular Accident Attack in Golden Period Stage to Quick Attitude to Family Response With Hypertension

Ria Anggraini <sup>a,1\*</sup>, Nyoto Nursani <sup>b,2</sup>, Dwi Retnowati <sup>c,3</sup>

<sup>a</sup> STIKes Hutama Abdi Husada Tulungagung, Indonesia

<sup>b</sup> Nursing STIKes Hutama Abdi Husada Tulungagung, Indonesia

<sup>c</sup> STIKes Hutama Abdi Husada Tulungagung, Indonesia

<sup>1</sup> riaanggraini118@gmail.com ; <sup>3</sup> retnoilona@gmail.com

## ABSTRACT

**Keywords:**  
hypertension  
golden period  
attitude  
counseling on the  
characteristics of  
CVA attacks

**Background:** Hypertension or high blood pressure is a silent killer disease. Uncontrolled hypertension can damage blood vessels so that they lose elasticity of blood vessels which one of the complications of hypertension is CVA (Cerebro Vascular Accident). Paralysis and even death can occur if late in handling CVA. Families need to know the attitude of response to family members with a history of hypertension who are at risk for CVA attacks. This study aims to determine the effectiveness of counseling about the characteristics of the Golden Period stage of the attack on the attitude of family emergency response with hypertension.

**Methods:** This study used a one-group pretest-posttest design. The population of this study was families with hypertension who lived in the work area of Boyolangu Community Health Center as many as 125 people by using quota sampling techniques so that a sample of 30 respondents was obtained. Data were collected by giving questionnaires before and after the counseling was carried out and then processed and tested using the Mc Nemar test.

**Results:** The results showed an increase in attitudes between before and after counseling where  $p$ -value  $(0.003) < \alpha (0.05)$ .

**Conclusion:** Counseling about the characteristics of the CVA attacks in the Golden Period stage affects the attitude of the family emergency response with hypertension. It is recommended that counseling on the characteristics of CVA attacks can be given to family members who have hypertension so that health improvements can be achieved.

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## I. INTRODUCTION

Hypertension or high blood pressure is a condition where systolic blood pressure is 160 mmHg or more and diastolic blood pressure is 90 mmHg or more and is chronic <sup>1</sup>. Uncontrolled hypertension can damage blood vessels so that they lose elasticity of blood vessels. One of the complications of Hypertension is CVA (Cerebro Vascular Accident) or commonly known as Stroke.

One of the important factors in handling CVA (Cerebro Vascular Accident) or common people call it a stroke is to provide fast and appropriate treatment. Later the treatment of CVA will worsen the patient's condition. Most patients who are delayed in receiving early treatment after a CVA attack will experience death or paralysis that is difficult to cure. This delay is due to the wrong attitude of the patient's family in responding to a CVA attack when the first signs of a CVA attack appear <sup>2</sup>.

Currently, there are still many people who underestimate CVA or Stroke. Most failures in CVA treatment are delays in CVA treatment. Commonly, patients with CVA experience CVA attacks when

the patient is at home, therefore the family has an important role in making decisions to choose the initial treatment, care, and health maintenance of CVA sufferers<sup>3</sup>.

The most recommended time in handling CVA is 3-4,5 hours after the attack, this time is then called the Golden Period. Immediately after a person is suspected of having a stroke, a simple check must be carried out immediately with FAST (Face, Arms, Speech, Time). Pay attention to the patient's face whether there is a sideways pull or asymmetrical, ask the patient to raise his hand, speak, and when the attack started. If you find an asymmetrical face, speech impediment, immobile hands or feet, the next thing to do is to contact a health worker or send the patient to the nearest health facility.

There are many people who die and suffer from strokes every year around the world. It is recorded that there are 130,000 people who die due to stroke in the United States each year. On average, 1 person dies every 4 minutes. Every year, more than 795,000 and 610,000 people are new sufferers and 87% of the data are ischemic types in which blood flow to the brain is blocked. Stroke has been named the fourth leading cause of death in the USA<sup>4</sup>. There was an increase in the prevalence of CVA sufferers at Riskesdas 2007 - 2013 from the initial 8.3 per thousand population to 12.1 per thousand population. Patients with CVA are dominated by male patients compared to women, i.e. male sufferers have a prevalence of 7.1 per thousand population while women have a prevalence of 6.8 per thousand population<sup>5</sup>.

Wrong views, wrong perceptions about the signs of CVA symptoms that are still underestimated, some wait until the symptoms disappear or subside, some think they are affected by spirits or evil spirits so they are taken to a supernatural expert shaman. There are also those who think it is a muscle disorder, so they are taken to a nerve masseur. The time that should be used to examine and provide initial treatment will be wasted due to misperceptions in recognizing the symptoms of CVA on the part of the patient's family. If CVA treatment is given beyond the Golden Period, it will result in brain damage in CVA patients which will be permanent and can even result in death<sup>6</sup>.

From the description above, the researcher intends to conduct counseling about the characteristics of CVA attacks at an early stage to add insight to families with a history of hypertension who have a greater risk of CVA attacks. In addition to adding insight, it is also expected to increase the family's preparedness in dealing with patients who are affected by early CVA attacks. Therefore, it can prevent death and permanent disability or paralysis. The purpose of this study is to determine the effect of counseling about the characteristics of CVA (Cerebro Vascular Accident) attacks in Golden Period stage on the responsiveness of families with hypertension in the work area of Boyolangu Public Health Center, Tulungagung

## II. METHOD

The population in this study was all families with hypertension who lived in the working area of the Boyolangu Public Health Center, amounting to 125 people. The sample in this study was taken using quota sampling so that 30 people from all families with hypertension lived in the working area of the Boyolangu Public Health Center. Collecting data by giving questionnaires before and after counseling is then processed by editing, coding, scoring, and tabulating.

This study was conducted on 16-23 Juli 2020 in the Work Area of the Boyolangu Public Health Center, Tulungagung. Data analysis of the effect of counseling on the characteristics of the CVA (Cerebro Vascular Accident) attacks in the Golden Period stage on the responsiveness of families with hypertension in the work area of the Boyolangu Public Health Center, Tulungagung Regency, using Mc Nemar statistical test. If  $p \leq \alpha$  (0.05) then  $H_0$  is rejected and  $H_1$  is accepted, it means that there is an effect of counseling on the characteristics of CVA (Cerebro Vascular Accident) Attacks in the Golden Period Stage on the Quick Response Attitude of Families with Hypertension in the Work Area of the Boyolangu Public Health Center, Tulungagung Regency. If  $> \alpha$  (0.05) then  $H_0$  is accepted and  $H_1$  is rejected, meaning that there is no effect of counseling on the characteristics of CVA (Cerebro Vascular Accident) Attacks in the Golden Period Stage on the Quick Response Attitude of Families with Hypertension in the Work Area of the Boyolangu Public Health Center, Tulungagung Regency.

### III. RESULTS AND DISCUSSION

#### A. Families' Attitudes With Hypertension Before Counseling About the Characteristics of CVA Attacks

**Table 1 Frequency distribution of respondents' attitudes before counseling**

Attitudes	Number	Percentage (%)
Positive	13	43.3
Negative	17	56.7
Total Number	30	100

According to the data in table 1, it is known that from 30 respondents before counseling about the characteristics of CVA attacks, almost half of the respondents had a negative attitude, i.e. 17 respondents or 56.7% of all respondents.

#### B. Families' Attitudes With Hypertension After Counseling About the Characteristics of CVA Attacks

**Table 2 Frequency distribution of respondents' attitudes after counseling**

Attitudes	Number	Percentage (%)
Positive	24	80
Negative	6	20
Total Number	30	100

Based on table 4.2, it is known that from 30 respondents after counseling about the characteristics of CVA attacks, almost all respondents had a positive attitude, i.e. 24 respondents or 80% of all respondents.

Data were collected by giving questionnaires before and after the counseling was carried out and then processed and tested using the Mc Nemar test. The results showed an increase in attitudes between before and after counseling where  $p$ -value ( $0.003 < \alpha (0.05)$ ) it means that there is an effect of counseling on the characteristics of CVA (Cerebro Vascular Accident) Attacks in the Golden Period Stage on the Quick Response Attitude of Families with Hypertension in the Work Area of the Boyolang Public Health Center, Tulungagung Regency.

#### A. Respondents' Attitude Before Treatment

According to the results of the study in table 4.1, it is known that of the 30 respondents, before being given counseling about the characteristics of CVA attacks, almost half of the respondents had a positive attitude, i.e. 13 respondents (43.3%) and 17 respondents (56.7%) had a negative attitude. Knowledge is something that is received by an individual that has been stored in his brain as capital in dealing with various problems and problems in his life<sup>7</sup>. One of the factors that can affect knowledge is a person's age. According to Astutik (2013), the older a person is, the better his mindset will be. By improving a person's mindset, people's knowledge will get better and his attitude will also be good. So the older a person is, the better a person's attitude will be.

Based on the results of the cross-tabulation of age in Appendix 16, table 16.2, it is known that from the 30 respondents before being given counseling, some of the respondents aged 20-30 years as many as 5 respondents had a positive attitude (100%). While respondents who are more than 50 years old as many as 13 respondents have a negative attitude as many as 9 respondents (69%).

From the results of the description above, there is no match between theory and the fact that the higher the age, the better a person's attitude will be in making decisions and responding to various situations in life. Based on the facts, respondents aged 20-30 years have a positive attitude, while the respondents aged more than 50 years mostly have a negative attitude. Most of the respondents aged more than 50 years have negative attitudes, the possible factors that influence this are memory decline

and education history. Education is the guidance given by someone to the development of others towards a certain goal. The higher a person's education, the easier it is to receive information and the more knowledge he has. Conversely, the lower a person's education level, the less knowledge they have<sup>8</sup>.

Based on the results of the cross-tabulation of education in Appendix 16 of table 16.3, it is known that from the 30 respondents before being given counseling, some of the respondents with the latest education in junior high school has a negative attitude, 12 respondents (86%). Meanwhile, respondents who have a high school education have a negative attitude as much as 2 respondents (17%). From the results of the description above, there is a match between theory and the fact that the higher a person's education level, the better in making decisions. Based on the facts, it was found that almost all of the respondents with the last education in junior high school had a negative attitude, this was due to the inability to make decisions due to lack of knowledge in dealing with various situations or problems in life.

According to the results of the cross-tabulation of information in Annex 16 table 16.5, it is known that from 30 respondents before being given counseling, there were 2 respondents (50%) who had received information about CVA being positive and 11 respondents (42%) who had never received information about CVA being positive. Information that a person gets either from social media or from other people greatly influences his attitude. Because in dealing with various problems, we will ask someone we trust, or in modern times, we can look for information through social media. The more information obtained, the better a person's attitude will be<sup>7</sup>. The information obtained must be sorted out which one is good and which one is bad, which one is right and which one is wrong. From the results of the description above, there is a match between theory and the fact that the more information obtained the better a person's attitude. Based on the fact that half of the respondents who have received information are positive, the more someone searches for information and can digest the information properly and correctly, it will be able to change a person's attitude to be better.

#### B. Respondents' Attitude After Treatment

According to the results of the study in table 4.2, it is known that of the 30 respondents, before being given counseling about the characteristics of CVA attacks, almost half of the respondents had a positive attitude, namely 24 respondents (80%) and 6 respondents (20%) having a negative attitude. In Indonesia, health education is regulated in Law no. 36 of 2009, health education was held to increase the knowledge, awareness, willingness, and ability of the community to live a healthy life and actively participate in health efforts<sup>9</sup>. Health education is an important process in efforts to improve health, increasing public knowledge about health, in fact, plays an important role in maintaining public health and welfare. There are several factors that can influence a person's attitude including internal and external factors. Internal factors are personality, motivation, integrity, interests and talents, needs, and knowledge. Meanwhile, external factors are personal experience, the influence of other people who are considered important, culture, mass media, and education.

A person's age can affect a person's attitude in dealing with various life problems. A person's ability to absorb new information is also influenced by a person's age. According to Astutik (2013), the higher the age of a person, the better the grasping power of new information. When given counseling, in this case, is health education about the characteristics of CVA attacks in the Golden Period stage, the higher the age of the respondent, the better the attitude of the respondent after being given counseling, and vice versa. Based on the results of the cross-tabulation of education in appendix 16 table 16.2, it is known that of the 30 respondents after being given counseling, some of the respondents aged more than 50 years had a positive attitude of 10 respondents (77%) and there were respondents who had a negative attitude as many as 3 respondents (23%). Meanwhile, respondents aged 20-30 years, there are a total of 5 respondents and all have a positive attitude (100%).

Based on the results of the description above, there is no match between theory and fact, that the higher a person's age, the better his attitude. Based on the facts on respondents who are more than 50 years old, 3 respondents have a negative attitude (23%). The possible cause of the discrepancy between the age and attitude of the respondent after being given counseling is a decrease in memory and or a decrease in hearing so that it affects the respondents' attitude after the counseling and causes the respondent's attitude to be negative.

Following the data from the cross-tabulation of education in Appendix 16 of table 16.3, it is known that of the 30 respondents after being given counseling, most of the respondents with the latest junior high school education had a positive attitude, 11 respondents (79%). Meanwhile, respondents who are graduated from a high school education have a positive attitude as many as 12 respondents (100%).

Health education is the provision of information to the public. An individual's ability to absorb this information can be influenced by his educational history. According to Astutik (2013), the higher a person's education, the better the comprehension or ability to absorb one's information.

From the results of the above description, there is a match between theory and fact, that the higher a person's education level, the higher a person's ability to absorb information. Based on the facts, all respondents (100%) who had their last education in high school after being given counseling had a positive attitude, while respondents who had the last education of junior high school almost all respondents (79%) had a positive attitude. This proves that respondents with high school education are better able to absorb the information provided than respondents with junior high school education. High education makes a person more capable and mature in absorbing information, thinking, acting, and making better decisions than someone with low education.

According to the results of the cross-tabulation of information in Appendix 16 of table 16.5, it is known that of the 30 respondents after being given counseling about the characteristics of CVA attacks, most of the respondents who had previously received information after being given counseling, there were 3 respondents (75%) who had a positive attitude. Meanwhile, the respondents who previously had not received the information, there were 21 respondents (81%) who had a positive attitude.

Health education is a way to provide important health information to increase public awareness to pay more attention to their health. For recipients of the information who have previously received information, especially here, the initial stage of CVA attacks is certainly easier to accept because they just need to repeat what they have obtained before. The more information obtained, the better a person's attitude will be<sup>7</sup>.

From the results of the description above, it can be concluded that there is no compatibility between theory and facts. After being given counseling, respondents who had previously received information about CVA, there were 3 respondents (75%) while respondents who had never previously received information about CVA, after being given counseling there were 21 respondents (81%) had a positive attitude. Possibly, this is because the information received by the respondent is wrong but the respondent is more confident with the information obtained previously, the respondent has decreased memory, the respondent's inability to process the information obtained. To change the beliefs of respondents who have a wrong understanding of CVA, it is hoped that health workers will pay more attention to these respondents so that respondents are not wrong in choosing the wrong treatment.

### C. Analysis of Effects After Giving Treatment

Following the data from the results of a simple comparative analysis using the Mc Nemar statistical test (SPSS 16.0 for Windows) in which the level of significance or  $\alpha=0,05$  obtained P-value = 0.003 so that  $P\text{-value} < \alpha$  or  $0.003 < 0.05$  it can be concluded that  $H_0$  is rejected and  $H_1$  is accepted, which means that there is an effect of counseling on the characteristics of the Golden Period stage of CVA attacks on the fast attitude of families with Hypertension in the work area of the Boyolangu Public Health Center, Tulungagung.

According to Walgito (2001) quoted in Sunaryo (2015), attitude is a form of a person's opinions and beliefs about a permanent situation, and accompanied by certain feelings and provides a basis for that person to behave in the way he chooses. Public health counseling is an educational activity by spreading messages, instilling confidence, so that people are not only aware, know and understand but are also willing and able to make recommendations that have to do with everyday life Ali (2011).

According to<sup>7</sup>, several things can affect attitude change, including personality, motivation, integrity, interests, talents, needs, knowledge, personal experience, culture, mass media, education, and emotional factors.

Based on table 4.1 and table 4.2, it is known that before being given counseling, there were 17 respondents or 56.7% who had a negative attitude and after being given counseling there were 6 respondents or 20% who had a negative attitude.

Based on facts and theory, there was an increase in respondents' attitudes before being given counseling about the characteristics of CVA attacks and after being given counseling about the characteristics of CVA attacks. According to the researcher, this is evidenced by the increase in the value of the questionnaire before being given counseling about the characteristics of the CVA attack in the Golden Period stage, in which at first, most of the respondents had a negative attitude then after being given counseling about the characteristics of the CVA attack in the Golden Period stage, almost all respondents had a positive attitude. Therefore, it can be concluded that counseling can affect people's attitudes which were initially negative to positive.

#### IV. CONCLUSION

1. The respondents' attitude before being given counseling about the characteristics of the CVA attacks in the Golden Period stage from 30 respondents who had a negative attitude as many as 17 respondents (56.7%).
2. The respondents' attitude after being given counseling about the characteristics of the CVA attacks in the Golden Period stage from 30 respondents who had a positive attitude as many as 24 respondents (80%).
3. There is an effect of counseling about the characteristics of the CVA (Cerebro Vascular Accident) attacks in the Golden Period stage on the responsiveness of families with Hypertension in the working area of the Boyolangu Health Center, Tulungagung with a value obtained  $p = 0.003$  with  $\alpha = 0.05$ .

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# Early Contingency Training of Disaster Mitigation Influenced Community Preparedness of Disaster Earthquake in Nggeger, Sendang, Tulungagung

Siti Nurhasanah<sup>1</sup>, Poppy Farasari<sup>2</sup>

<sup>1</sup> Lecturer, Nursing, STIKes Hutama Abdi Husada, Tulungagung \*

<sup>a2</sup> Bachelor, Nursing, STIKes Hutama Abdi Husada, Tulungagung

<sup>a</sup>popfarsar5@gmail.com

## ABSTRACT

**Keywords:**

Early  
Contingency  
Training  
  
Preparedness  
  
Disaster  
  
Mitigation

**Background:** Indonesia was one of the countries with high seismic activity and a long history of powerful earthquakes. Therefore Indonesian must have good knowledge in dealing with disasters especially earthquake. The purpose of the study was to analyse the effect of providing counselling on community preparedness on knowledge of earthquake disaster in Nggeger, Sendang, Tulungagung

**Methods:** : This study used a quasi experimental research design with one group pretest-posttest. The research was carried out on January 2021. Samples were taken by purposive sampling technique of 63 people. Data were analyzed by Wilcoxon Signed Ranks Test.

**Results:** The results showed that the most respondents (76%) had less knowledge level before training but after training, the level of knowledge increased. Wilcoxon Test indicated that P Value = 0.000 <0.05 so H1 is accepted. It meant that early contingency training of disaster mitigation influenced community preparedness of disaster earthquake in Nggeger, Sendang, Tulungagung 2021.

**Conclusions:** Training was very useful to increase the level of community knowledge especially about disaster mitigation. By increasing the level of community preparedness in dealing with earthquake disasters, it was hoped that the material and non-material impacts of disasters can be minimized.

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## I. INTRODUCTION

Indonesia is a supermarket disaster, because all disasters exist in Indonesia. Geographically Indonesia lies in a series of rings of fire that stretches along the most active tectonic plates in the world. Indonesia is an archipelago that has the longest mountain arc in the world (Rosyida, 2017). The high potential for natural disasters is basically nothing more than just reflection of natural phenomena that are geographically very typical for soil regions Our water. Indonesia is an archipelago where three plates are The world's great meets, namely the Indo-Australian Plate, the Eurasian Plate, and Pacific Plate (Rahman, 2015)

Disasters are events or series of events that threaten and disrupt people's lives / livelihoods caused by both nature and / or non-natural and human factors resulting in human fatalities, environmental damage, property losses and psychological impacts (Disaster, 2007). It can disrupt the life and livelihood of the people and threaten the safety of the population that could lead to disruption of National Security and Defense and State, because disaster is non military threats (Adiwijaya, 2017).

Landslide is a movement of rock and / or soil period in a graphitacional manner that can occur slowly or suddenly. The dimensions of avalanches vary widely, ranging from just a few meters to thousands (kilo) meters. Avalanches can occur naturally or are triggered by human

activities. This type of natural disaster due to avalanches is a type of disaster that is quite important because of its equitable distribution in almost all regions of the country, and on the basis of the record of its occurrence, avalanches in general always keep the intensity of the most events, and can occur simultaneously with other geological natural disasters, such as earthquakes and volcanic eruptions (Imam A. Sadisun, 2004).

Landslide disasters are often triggered due to a combination of high rainfall, steep slopes, less dense and thick soil, erosion, reduced vegetation cover and vibrations. Landslides usually occur so quickly that they cause limited time to conduct self-evacuation (Yanuarto, 2017)

Early contingency training to improve community preparedness is very important for everyone. In January 2021 landslides in East Java Province as many as 31 locations and in Tulungagung Regency as many as 1 location (BNPB, 2021)

## II. METHOD

The design of the study used in this study was pre-experimental with the advantage of being easy to do despite weaknesses in terms of internal validity and external validity.

The population in this study is the entire community of Geger village sendang district of Tulungagung regency that fits the criteria that have not received counseling about early contingency training as many as 63 people.

The sample in this study is the total sample or equal to the study population. The sampling technique used by researchers is total sampling which means the determination of samples by selecting all samples that fit the criteria Free variable: early contingency training. Dependent variables: preparedness for landslide hazards.

## III. RESULTS AND DISCUSSION

### RESULTS

The results of the recapitulation of respondents' research based on the results of questionnaires distributed before and after receiving training on early contingencies in the community to improve preparedness for landslide hazards in the village of Geger Sendang District of Tulungagung Regency can be presented in the frequency distribution table as follows:

#### 1. Preparedness For Landslide Hazards Before Training

The results of a descriptive analysis of preparedness for landslide hazards respondents before being given training.

#### Distribution of respondents' frequency based on Preparedness For Landslide Hazards Before Training.

Preparedness	Sum	%
Less	46	76,0
Enough	14	18,0
Good	3	6,0
Total	63	100,0

Based on the data in the table above, it turns out that the preparedness of respondents before being given the most training is in the lesser category, which is as many as 46 (76.0%) respondents.

**2. Preparedness For Landslide Hazards After Training Results of descriptive analysis of preparedness for landslide hazards respondents after being given training.**  
**Distribution of respondents' frequency based on Preparedness For Landslide Hazards After Training**

Preparedness	Sum	%
Less	0	0,0
Enough	2	3,0
Good	61	97,0
Total	63	100

Based on the table above, the preparedness of respondents after being given the most training is in good categories, which is as many as 61 (97.0%) respondents. If compared to the largest frequency before and after being given training there is an increase that is from a sufficient category to a good category. However, it is necessary to further analyze whether statistically there is a meaningful increase

## DISCUSSION

Respondents from the community of Geger Village Sendang District Tulungagung regency were selected as many as 63 people and given questionnaires before training. The result was that 46 (76.0%) respondents had less preparedness in the category of preparedness for landslide hazards, 14 (18.0%) respondents had preparedness in the category sufficient in the category of preparedness for landslide hazards and only 3 (6.0%) respondents had preparedness in the category of good in preparedness for landslide hazards.

Many respondents to this study do not understand about knowing the cause of landslides and how to save themselves in the event of a landslide. The results of the questionnaire showed that the study respondents only knew that when there were signs of danger should immediately save themselves. How to deal with the danger of landslides properly and correctly is not yet understood by respondents as a whole.

After the training was given a questionnaire with no results responden Those with less preparedness in the category of preparedness for landslide hazards, 2 (3.0%) respondents had preparedness in the category sufficient in the category of preparedness for landslide hazards and the number of respondents who had preparedness in the category of good in preparedness for landslide hazards, which is 61 (97%) respondents.

Statistical test results with the Wilcoxon Signed Rank Test obtained a significant value of 0.000 which means less than the value of  $\alpha$  (0.05). This shows that the research hypothesis is accepted which means there is a difference in preparedness for landslide hazards in the village of Geger Sendang District of Tulungagung Regency before and after training on the respondents of this study.

Early Contingency Training of Diasaster disasters looks that the need to obtaining information and maps of disaster-prone areas for each type of disaster is very big. The biggest challenge is how to get information or maps. as soon as possible, then informed to the public to evacuate and another rescue action. In such circumstances, the presence of technology is based on Geographic Information Systems (GIS) are very meaningful and play a role (Sulistyo, 2016).

Changes in preparedness for landslide hazards are evident in the age group < 30 years - 60 years with a significant value of 0.005. These results show young people are easier to understand contingency training than > 60 years. While based on education the significant value is 0.031 with higher education it is easier to understand contingency training than respondents who have elementary education. Based on the work has no significance with changes in the understanding of contingency training, where the statistical test result > 0.05, which is 0.773 which means that education has no influence in the change in the understanding of contingency training. While in the job as a self-employed has a good improvement, because the self-employed have a lot of knowledge and experience, so they understand more the signs and symptoms of landslides compared to other jobs of respondents.

#### IV. CONCLUSION

Prior to contingency training there were 46 (76.0%) respondents had preparedness in the lesser category, 14 (18.0%) respondents had preparedness in the sufficient category and only 3 (10.0%) respondents had preparedness in the good category.

After contingency training no respondents had preparedness in the lesser category, 2 (3.0%) respondents had preparedness in sufficient categories and almost all respondents had preparedness in the good category, which is 61 (97%) respondents

#### V. ACKNOWLEDGMENT

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# The Effectiveness Of Diabetes Exercise With Ergonomic Exercise On Blood Sugar Levels In Diabetes Mellitus Clients At The Indonesian Diabetes Unit Clinic (Persadia) Tulungagung

Yitno<sup>a,1,\*</sup>, Yayuk Wahyuti<sup>b,2</sup>

<sup>a</sup>Lecturer, Nursing, STIKes Hutama Abdi Husada, Tulungagung

<sup>b</sup>Bachelor, Nursing, STIKes Hutama Abdi Husada, Tulungagung

<sup>1</sup>yitnostikes@gmail.com\_\*;

## ABSTRACT

**Keywords:**

Diabetes  
Mellitus

Diabetic  
gymnastic

Ergonomic  
gymnastic

Blood  
Sugar  
Content

**Background :** Diabetes mellitus (DM) is group of heterogeneous disorders characterized by abnormalities of blood glucose levels or hyperglycemia. Four main pillars of hyperglycemia control is one of them is physical exercise such as diabetes gymnastic that is physical gymnastics designed according to age physical status. Beside that there is also ergonomic gymnastic is a technique of gymnastics to maximize the burning system of uric acid, cholesterol, blood glucose, lactic acid, chrystral oxalate. This study aims to determine the effectiveness of diabetes gymnastics with ergonomic gymnastics against blood glucose levels of DM client at the clinic PERSADIA Tulungagung.

**Method :** Research design used is pre experimental design, with a shortcut of two pre-post groups. The populations of all clients of diabetes mellitus PERSADIA. Using Quota sampling technique with 36 respondent. Retrieval of independent variable data using SOP diabetes gymnastics and gymnastics ergonomic, variable dependent using glucotest. Then the data in the analysis using Independen t-tes. The study was conducted on July 2020.

**Result :** The results obtained by the average blood glucose level after diabetes gymnastics intervention is 259,33 mg/dl and average blood glucose levels after the ergonomic gymnastics intervention of 231,33 mg/gl. From the statistical test results obtained there effectiveness diabetes gymnastics with ergonomic gymnastics with ergonomic gymnastics on blood glucose levels on the client DM indicated by p value 0,029 while for alpha value 0,05, it means p value < alpha then H0 is rejected.

**Conclusion :** Research results show diabetes gymnastics is more effective in deteriorating blood glucose levels client DM than ergonomic gymnastics because diabetic exercise causes increased blood flow, capillary meshes are more exposed resulting in more insulin receptors that effect the decrease in blood glucose.

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## I. INTRODUCTION

The development of disease in the current era of globalization is a shift from infectious to non-communicable diseases and more and more degenerative diseases appear (Suyono, 2006). Degenerative disease is a chronic disease that affects a person's quality of life and productivity, the disease will increase as the patient ages. From several degenerative diseases, diabetes mellitus is one of the diseases that has a high number of sufferers. Based on data from the International Diabetes Federation (IDF) in 2014 there were 415 million people with DM in the world and that number will increase in 2040 to reach 642 million people. Diabetes Mellitus (DM) is a heterogeneous disorder characterized by an increase in blood glucose levels [1]

Based on WHO data in 2013 the number of diabetes mellitus patients in Indonesia was 8,554,155 people. Based on a survey conducted by the Indonesian Ministry of Health [1] it was found that the prevalence of diabetes in Indonesia increased by 2.1% in 2013, this figure is

higher than compared to 2007 at 1.1%. East Java province ranks ninth in the number of diabetes mellitus patients in Indonesia. In East Java as many as 222,430 suffer from diabetes mellitus. Tulungagung District Health Office in December 2015 there were 10,578 cases of diabetes mellitus from various hospitals in Tulungagung Regency. While the secondary data obtained in January 2020 there were 36,451 cases of DM in Tulungagung. Based on a preliminary study, there are 125 members of PERSADIA Tulungagung who have DM [2].

DM if not managed properly can lead to various chronic diseases, such as cerebrovascular disease, coronary heart disease, leg blood vessel disease, eye, kidney and nerve complications. And if DM patients do not get proper therapy or treatment, the disease will worsen the patient's condition. For example, DM can cause death if the patient has complications or comorbidities with DM. Some complications in people with diabetes mellitus are decreased sexual ability, symptomatic neuropathy (nerve complications in diabetes mellitus), diabetic retinopathy (narrowing of blood vessels in the eye), cataracts (clouding of the lens of the eye), coronary heart disease, gangrene and kidney failure.

Patients with diabetes mellitus should carry out 4 pillars of diabetes mellitus management, namely education, medical nutrition therapy, physical exercise, and pharmacology [3]. One of the recommended physical exercises is diabetes gymnastics. According to PERSADIA (Indonesian Diabetes Association) [4] diabetes exercise is a physical exercise designed according to age and physical status and is part of the treatment of diabetes mellitus. Physical exercise causes an increase in blood flow, more capillary nets open so that more insulin receptors are available and receptors become more active which will affect the decrease in blood glucose in diabetic patients [5]. The frequency of diabetes exercise is carried out once on Saturday in a guided manner with a duration of 30-60 minutes. The results showed that pre-test blood sugar levels were above normal and post-test results decreased [6].

In addition to diabetes exercise, ergonomic exercise can also reduce blood sugar levels in DM patients. The frequency of ergonomic exercise is carried out once a week in a guided manner with a duration of 15-40 minutes. The results showed that pre-test blood sugar levels were above normal and post-test results decreased [7].

The purpose of this study was to identify blood sugar levels in diabetes mellitus clients before being treated with diabetes and ergonomic exercise, identify blood sugar levels in diabetes mellitus clients after being treated with diabetes and ergonomic exercise, to analyze the effectiveness of Diabetes Exercises with Ergonomic Exercises on blood sugar levels. in patients with diabetes mellitus.

The hypothesis in this study is that there is a difference in the effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels of Diabetes Mellitus clients at the Indonesian Diabetes Association (PERSADIA) clinic, [2]

## II. METHOD

The design of this study used a two-group pretest-posttest design without a control group, namely a research design that was carried out with a pretest before treatment and posttest after being given treatment, and to determine the effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels in diabetic clients who had diabetes mellitus. given exercise treatment. The population of this study were all DM clients registered at PERSADIA Tulungagung in November 2017 as many as 125 members.

The sample used in this study were some members of PERSADIA Tulungagung who met the research criteria.

Data was collected using an Easy Thouch glucometer, alcohol, gauze/cotton, lancet and lancing device and test strips, patient characteristic identity sheets and observation of blood sugar levels.

The data collection technique was that before the exercise, blood sugar levels were measured (pretest). After that, the diabetes exercise treatment was once again observed (posttest) by measuring blood sugar levels in each group.

This research was conducted on 3 and 24 July 2020 at the PERSADIA Tulungagung clinic page.

Data analysis of the effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels of Diabetes Mellitus clients at the PERSADIA Tulungagung Clinic, using the Independent t Test statistical test. If value  $< 0.05$  is said to be significant, namely  $H_0$  is rejected, then  $H_1$  is accepted which means that there is a difference in the effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels in Diabetes Mellitus clients, while value  $> 0.05$  then  $H_0$  is accepted, and  $H_1$  is rejected. which means that there is no difference in the effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels in Diabetes Mellitus clients.

The ethics of this research are the Consent to Become a Respondent (Informed Consent, Anonymity, Confidentiality and Justice).

### III. RESULTS AND DISCUSSION

Table 1. Frequency distribution of respondents' blood sugar levels before diabetes exercise at PERSADIA Tulungagung Clinic

NO	Category	Frequency	Percentage
1	Hipoglikemi : <60 mg/Dl	0	0
2	Normal : 60-200 mg/Dl	0	0
3	Hiperglikemi : >200 mg/Dl	18	100
	Total	18	100

Based on table 1, it can be seen that all respondents at the PERSADIA Tulungagung Clinic before the diabetes exercise had hyperglycemic blood sugar levels ( $> 200$  mg/dL) as many as 18 people (100.0%).

Table 2. Results of the Blood Sugar Level Examination of the Diabetes Exercise Group Before Diabetes Exercise

Blood Sugar Level	Lowest	Highest	Mean	SD
Pre	219	433	269,94	55,874

Based on the value of blood sugar levels before diabetes exercise, the lowest was 219mg/dL, the highest was 433 mg/dL and the average blood sugar level was 269.94 mg/dL.

Table 3. Frequency distribution of blood sugar levels of respondents in the ergonomic exercise group

NO	Category	Frequency	Percentage
1	Hipoglikemi : <60 mg/Dl	0	0
2	Normal : 60-200 mg/Dl	0	0
3	Hiperglikemi : >200 mg/Dl	18	100
	Total	18	100

Based on table 3, it can be seen that all respondents at PERSADIA Clinic Tulungagung before ergonomic exercise had hyperglycemic blood sugar levels ( $> 200$  mg/dL) as many as 18 people (100%).

Table 4. Results of Examination of Blood Sugar Levels in the Diabetes Exercise Group Before Ergonomic Gymnastics

Blood Sugar Level	Lowest	Highest	Mean	SD
Pre	219	433	269,94	55,874

Based on table 4 the value of blood sugar levels before ergonomic exercise was the lowest 223mg/dL, the highest was 265 mg/dL and the average blood sugar level was 234.83 mg/dL.

Table 5 Frequency distribution of respondents' blood sugar levels after diabetes exercise at PERSADIA Tulungagung Clinic.

NO	Category	Frequency	Percentage
1	Hipoglikemi : <60 mg/Dl	0	0
2	Normal : 60-200 mg/Dl	2	11,1
3	Hiperlikemi : >200 mg/Dl	16	88,9
	Total	18	100

Based on table 5, it can be seen that after diabetes exercise, 18 respondents at the PERSADIA Tulungagung Clinic who had hyperglycemic blood sugar levels (> 200 mg/dL) were 16 respondents (88.9%).

Table 6 Results of examination of blood sugar levels after diabetes exercise

Blood Sugar Level	Lowest	Highest	Mean	SD
Pre	195	393	259,33	50,366

The value of blood sugar levels after diabetes exercise treatment was the lowest 195 mg/dL, the highest was 393mg/dL and the average blood sugar level was 259.33 mg/dL

Table 7 Distribution of the frequency of respondents' blood sugar levels after ergonomic exercise at PERSADIA Clinic Tulungagung.

NO	Category	Frequency	Percentage
1	Hipoglikemi : <60 mg/Dl	0	0
2	Normal : 60-200 mg/Dl	1	5,6
3	Hiperlikemi : >200 mg/Dl	17	94,4
	Total	18	100

Based on table 7, it can be seen that after doing ergonomic exercises from 18 respondents at the PERSADIA Tulungagung Clinic who had hyperglycemic blood sugar levels (> 200 mg/dL) as many as 17 respondents (94.4%).

Table 8 Results of examination of blood sugar levels after ergonomic exercise.

Blood Sugar Level	Lowest	Highest	Mean	SD
Pre	199	265	231,33	13,797

The value of blood sugar levels after diabetes exercise treatment was the lowest 199 mg/dL, the highest was 265 mg/dL and the average blood sugar level was 231.33 mg/dL.

Table 9 Analysis of the effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels of clients with diabetes mellitus at the Indonesian Diabetes Association Clinic (PERSADIA) Tulungagung.

	Diabetes Exercise			ergonomic exercise		
	Pre	Post	Difference	Pre	Post	Difference
Low	219	195		223	199	
High	433	393		265	265	
Mean	269	259,33	9,67	234,83	231,33	3,5
SD	55,874	50,366		11,547	13,797	
	$\alpha = 0,029$			$\alpha = 0,05$		

Based on table 9 above, the average blood sugar level after diabetes exercise changed by 9.67 mg/dL. Meanwhile, for ergonomic exercise, there has been an average change of 3.5 mg/dL. The data illustrates the difference in blood sugar levels of Diabetes Mellitus clients after doing diabetes and ergonomic exercise which can be seen from the value of = 0.029.

Testing the research hypothesis, namely the effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels of Diabetes Mellitus clients at the PERSADIA Tulungagung Clinic using Independent T Test test data analysis. The research data is a comparison of changes in blood sugar levels between the diabetes exercise group and the ergonomic exercise group which was analyzed using the SPSS 16.00 for windows program.

The results of the Independent T Test statistical test obtained = 0.029, while = 0.05 because < then H<sub>0</sub> is rejected and H<sub>1</sub> is accepted, meaning that there is an effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels of Diabetes Mellitus clients at PERSADIA Tulungagung Clinic.

Based on table 1 of the diabetes exercise group before the diabetes exercise intervention at the Indonesian Diabetes Association Clinic (PERSADIA) Tulungagung, out of 18 respondents, all respondents had hyperglycemic blood sugar levels (> 200 mg/dL). Meanwhile, the lowest blood sugar level is 219 mg/dL, the highest is 433 mg/dl and the average is 269.94 mg/dL.

This is in accordance with the theory expressed by [8] that Diabetes Mellitus (DM) is a heterogeneous group of disorders characterized by an increase in blood glucose levels or hyperglycemia (> 200 mg/dL). Processed sugar in the body is used as energy. In the process of energy formation, sugar will be processed in the cells with the help of insulin, while insulin in the body is produced in the pancreas. Weakened body organs will experience decreased function, including pancreatic cells in charge of producing insulin. Pancreatic cells can degenerate, causing too little insulin to be produced so that blood glucose levels rise [8]

Based on the facts and theories that blood sugar levels that are too high can interfere with health, the body's organs will weaken and experience decreased function, including a decrease in the function of pancreatic cells as a place for insulin production. DM patients find it difficult to control their lifestyle and do not care about their health so that blood sugar levels can increase. Factors that affect DM include age and gender, factors that affect blood sugar levels include diet and drug consumption.

Based on the cross tabulation of the age of respondents in the diabetes exercise group with blood sugar levels before diabetes exercise, 11 respondents (61.1%) had hyperglycemic blood sugar levels (> 200 mg/dL).

This is in accordance with the theory expressed [9] that the age for Type 2 Diabetes Mellitus sufferers appears at the age of over 45 years, because at this age there have been many changes, especially in the pancreas which produces insulin in the blood. Age above 45 years is a period that can be classified into old age, when a person's age increases, the insulin produced in the body will decrease so that it will experience progressive cell shrinkage.

Based on facts and theories, researchers argue that a person's organs that are weakened will experience decreased function, including pancreatic cells which are in charge of producing insulin in the body. Pancreatic cells can degenerate, causing the hormone insulin to be produced too little so that blood glucose levels can increase. The older you get, the higher your blood sugar levels. This is in line with the research of Hardiman where age has an influence on increasing blood sugar levels [10].

Based on the cross tabulation of respondents' gender with blood sugar levels before diabetes exercise, 15 respondents (83.3%) female respondents had hyperglycemic blood sugar levels (> 200 mg/dL).

These data are in accordance with the theory expressed by Brunner and Suddart (2014) that cases of diabetes mellitus are more common in women than men. This is because women have higher bad fats than men. This is also in accordance with the research of Indriyani which states that

diabetes mellitus at the age of 40-70 years is more common in women, while in men it occurs more at a younger age. This is triggered by hormonal fluctuations during the monthly cycle syndrome (pre-menstrual syndrome) and post-menopausal in women which makes fat distribution easy to accumulate in the body [11].

Based on facts and theories, there are more female respondents than male respondents. In addition to cases of diabetes mellitus, there are more women than men, the proportion who follow diabetes exercise at the PERSADIA clinic is also more women than men. However, there was no significant difference in the value of blood sugar levels before exercise in the male and female groups, so it can be seen that gender is not associated with changes in blood sugar levels.

Based on the cross tabulation of the respondent's diet program with blood sugar levels before diabetes exercise, it showed that of the 18 respondents at the PERSADIA Tulungagung Clinic following the diet program, 13 respondents (72.2%) had hyperglycemic blood sugar levels ( $> 200 \text{ mg/dL}$ ).

This is in accordance with the theory expressed by Novitasari (2012) which states that dietary regulation usually improves short-term glycemic levels and has the potential to improve long-term metabolic control. According to PERKENI diet and weight control are the basis of DM management, nutritional management in DM patients is directed to prevent daily fluctuations in blood glucose levels by seeking blood glucose levels to approach normal through safe and practical ways [12].

Based on facts and theory, respondents follow a diet program to limit the consumption of foods containing sugar. Reducing consumption of foods that contain lots of sugar and reducing fat consumption can play a role in regulating blood glucose. The implementation of the diet is very important so that DM patients can get nutritional intake according to their body needs and do not experience excess or deficiency in nutritional adequacy.

Based on table no. 4 cross tabulation of respondents' drug consumption with blood sugar levels before diabetes exercise in appendix 14 shows that of the 18 respondents at the PERSADIA Tulungagung Clinic who took DM (OAD) drugs, 14 respondents (77.8%) had hyperglycemic blood sugar levels ( $> 200 \text{ mg/day}$ ). dL).

According to PERKENI (2011), one of the ways Anti-Diabetes Drugs (OAD) work is to increase the hormone insulin. Insulin is a hormone that functions to help the entry of sugar into muscle cells so that muscles can use it as a source of energy. In people with diabetes, there is a lack of insulin or there is no insulin functioning, so OAD is needed.

Based on facts and theory, insulin can be increased by consuming OAD so that the sugar that is in it can enter the muscle cells and be used as energy for activities. Respondents in this study have full awareness of treatment so that respondents routinely consume drugs from a doctor's prescription.

Based on table 3 of the ergonomic exercise group before the intervention of ergonomic exercise at the Indonesian Diabetes Association Clinic (PERSADIA) Tulungagung of 18 respondents, all respondents had hyperglycemic blood sugar levels ( $> 200 \text{ mg/dL}$ ). Meanwhile, the lowest blood sugar level was 223 mg/dL, the highest was 265 mg/dL and the average was 234.83 mg/dL.

This is in accordance with the theory expressed by PERKENI that a person is said to have diabetes if he has fasting blood sugar levels  $> 126 \text{ mg/dL}$  and on a blood sugar test when  $> 200 \text{ mg/dL}$ . Blood sugar levels vary throughout the day which will increase after eating and return to normal within 2 hours [12].

Based on facts and theories, a person suffering from diabetes has blood sugar levels when  $> 200 \text{ mg/dL}$  (hyperglycemia) and blood sugar levels will increase after eating. Diabetic patients who find it difficult to control their lifestyle such as their diet will experience an increase in blood sugar levels.

Based on the cross tabulation of the respondent's age with blood sugar levels before ergonomic exercise, 11 respondents (61.1%) had hyperglycemic blood sugar levels ( $> 200 \text{ mg/dL}$ ).

This is in accordance with the theory expressed by Price & Wilson that Type II Diabetes Mellitus usually occurs after the age of 45 years and then continues to increase in the elderly. Age is very closely related to the occurrence of an increase in blood glucose levels, so the increasing age, the higher the prevalence of diabetes and impaired glucose tolerance [13].

Based on facts and theories, the increasing age of a person causes a decrease in several organ functions, one of which is the weakening of the function of the pancreas organ which is in charge of producing insulin in the body. Pancreatic cells can degenerate, causing the hormone insulin to be produced too little so that blood glucose levels can increase. This is in accordance with the theory of Price & Wilson that age affects the increase in blood sugar levels [13].

Based on the cross tabulation of sex with blood sugar levels before diabetes exercise, 15 respondents (83.3%) had hyperglycemic blood sugar levels ( $> 200 \text{ mg/dL}$ ).

Based on facts and theories, there are more female respondents than male respondents. In addition to cases of diabetes mellitus, which were more common in women than men, the proportion who took part in diabetes and ergonomic exercise at the PERSADIA clinic was also more women than men. However, there was no significant difference in the value of blood sugar levels before exercise in the male and female groups, so it can be seen that gender is not associated with changes in blood sugar levels.

Based on the table of cross tabulation of the respondent's diet program with blood sugar levels before ergonomic exercise, it shows that of the 18 respondents at the PERSADIA Tulungagung Clinic following the diet program, 15 respondents (83.3%) had hyperglycemic blood sugar levels ( $> 200 \text{ mg/dL}$ ).

This is in accordance with the theory expressed by Kilvert (2010) that food intake, especially high-energy foods or rich in carbohydrates and low fiber can interfere with the stimulation of pancreatic beta cells in producing insulin. Fat intake in the body also needs to be considered because it greatly affects insulin sensitivity.

Based on facts and theory, respondents follow a diet program to limit the consumption of foods containing sugar. Reducing consumption of foods that contain lots of sugar and reducing fat consumption can play a role in regulating blood glucose. Respondents who carry out the diet experience a decrease in blood sugar levels and can maintain a balance in their blood sugar levels.

Based on the cross tabulation of respondents' drug consumption with blood sugar levels before ergonomic exercise, it shows that of the 18 respondents at the PERSADIA Tulungagung Clinic who took DM (OAD) drugs, 14 respondents (77.8%) had hyperglycemic blood sugar levels ( $> 200 \text{ mg/dL}$ ).

Based on the theory expressed by PERKENI (2011) that oral anti-diabetic drugs or Oral Hypoglycemic Agents (OH) are effective in type 2 Diabetes Mellitus if diet (nutritional management) and physical exercise (exercise) are unable to control sugar levels. Meanwhile, patients with type 1 diabetes are unable to produce insulin in their bodies, so they are highly dependent on insulin administration. In contrast to type 2 diabetes, which is not dependent on insulin, but requires it as a support to lower blood glucose in maintaining life. The purpose of insulin administration is to increase glucose transport into cells and inhibit glycogen and amino acids to become glucose.

Based on facts and theory, insulin can be increased by consuming OAD so that the sugar that is in it can enter the muscle cells and be used as energy for activities. Respondents in this study have full awareness of treatment so that respondents routinely consume drugs from a doctor's prescription.

Based on research table 5 in the diabetes exercise group after the diabetes exercise intervention at the Indonesian Diabetes Association Clinic (PERSADIA) Tulungagung of 18 respondents there were 16 respondents (88.9%) who had hyperglycemic blood sugar levels ( $> 200 \text{ mg/dL}$ ). Meanwhile, the lowest blood sugar level was 198 mg/dL, the highest was 331 mg/dL and the average was 259.33 mg/dL [4].

Physical exercise causes an increase in blood flow, more capillary nets open so that more insulin receptors are available and receptors become more active which will affect the decrease in blood glucose in diabetic patients [14]. One of the recommended physical exercises is diabetes gymnastics. Diabetic exercise in DM patients plays a role in regulating blood glucose levels. Exercise can increase the body's fuel needs by the muscles, stored glucose will be broken down and will be used as an energy source, so that glucose uptake by muscles increases and can reduce blood glucose levels.

Based on facts and theories that someone who has high blood sugar levels can decrease by doing physical activity. In the cross-distribution of blood sugar levels after diabetes exercise with factors that affect DM and blood sugar, there are 2 respondents who experienced a decrease in blood sugar levels from the hyperglycemic category to the normal category, namely 219 to 198 mg/dL and 222 to 195 mg/dL. During physical activity, energy needs increase so that muscles become more active and an increase in glucose usage causes a decrease in blood glucose.

Based on research table 7 in the ergonomic exercise group after the ergonomic exercise intervention at the Indonesian Diabetes Association Clinic (PERSADIA) Tulungagung of 18 respondents there were 17 respondents (96.4%) who had hyperglycemic blood sugar levels ( $> 200$  mg/dl). Meanwhile, the lowest blood sugar level was 199 mg/dl, the highest was 265 mg/dl and the average was 231.33 mg/dl.

Based on the theory expressed by Kilvert that regular exercise can reduce insulin resistance so that insulin can be used better by the body's cells. Exercise can also be used as an effort to burn fat in the body so that it can reduce weight for obese people [14]. One of the recommended physical exercises is ergonomic exercise. In the sitting movement, it is beneficial to activate the burning button which is located at the base of the foot, between the thumb and forefinger. If this button is pressed for a long time and a bit hard, preferably on the tile if it is not sensitive, there will be a polarization of the magnetic field on the soles of our feet and there will be a conversion of negative energy into burning energy which is useful for burning uric acid, blood sugar, cholesterol, lactic acid, crystals, oxalate, a body toxin in the tissues of the soles of our feet [6]

Based on facts and theories that someone who has high blood sugar levels can decrease by doing physical activity. In the results of cross-distribution of blood sugar levels after ergonomic exercise with factors that affect DM and blood sugar, there is 1 respondent who experienced a decrease in blood sugar levels from the hyperglycemic category to the normal category, namely 239 to 199 mg/dL. During physical activity, energy needs increase so that muscles become more active and an increase in glucose usage causes a decrease in blood glucose.

Based on table 9, it can be seen that the level of effectiveness of diabetes exercise and ergonomic exercise on changes in blood sugar levels in diabetes mellitus clients is diabetes exercise. This is evidenced by the cross tabulation test which states that there is a change in blood sugar levels after the diabetes exercise intervention with an average of 259.33 mg/dL and the difference between before the intervention and after the diabetes exercise intervention is 9.67 mg/dL. 2 respondents experienced a decrease in blood sugar levels from hyperglycemia to normal, namely from 219 mg/dl to 198 mg/dl and from 222 mg/dL to 195 mg/dL. While in the Ergonomic exercise intervention group, after the ergonomic exercise treatment there was a change with an average of 231.3 mg/dL and the difference between before and after the intervention was 3.5 mg/dL, and there was only 1 respondent who experienced decreased blood sugar levels from hyperglycemia to normal from 239 mg/dL to 199 mg/dL. So, the average change in blood sugar levels after giving diabetes exercise intervention was more effective than the average after giving Ergonomic exercise intervention.

In this study, it can be seen that the level of effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels of clients with diabetes mellitus is the treatment of diabetes exercise. This is evidenced by the Independent T-Test test which shows the value of  $= 0.029$  where  $< 0.05$  so  $H_0$  is rejected and  $H_1$  is accepted which means that there is an effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels of Diabetes Mellitus clients at PERSADIA Clinic Tulungagung.

Diabetes gymnastics physical exercise causes an increase in blood flow, more capillary nets open so that more insulin receptors are available and receptors become more active which will affect the decrease in blood glucose in diabetic patients [15]. Diabetic exercise in DM patients plays a role in regulating blood glucose levels. Exercise can increase the body's fuel needs by the muscles, stored glucose will be broken down and will be used as an energy source, so that glucose uptake by muscles increases and can reduce blood glucose levels.

The results of this study are in accordance with previous research conducted by Nirwanto K. Rahim in with the title "The Effect of Diabetes Mellitus Gymnastics on Reducing Blood Sugar Levels in Diabetes Mellitus Patients in the Global Health Center Work Area, Limboto District, Gorontalo Regency" before doing diabetes exercise on average. the average blood glucose level of the respondents was 198.67 mg/dl with std. deviation of 28.987 and after doing diabetes exercise the average blood sugar level is 163.27 mg/dl with std. with a deviation of 32.575, there was a decrease in the average blood sugar level after exercise of 35.4.

Based on the facts and theory according to the researcher that respondents who were given intervention or treatment for diabetes exercise were more effective in reducing blood sugar levels in the body than ergonomic exercise because diabetes exercise caused an increase in blood flow, more capillary nets opened so that more insulin receptors affected decrease in blood sugar. If physical exercise continues to be increased or routinely carried out, the source of energy and muscle glycogen is reduced, subsequently the use of blood glucose and free fatty acids will occur. The more routine exercise, the more the use of glucose derived from liver glycogen reserves is used for energy. To reduce high blood sugar levels, alternative solutions can be given, namely diabetes exercise which can improve blood sugar levels and maintain stable blood sugar levels.

#### IV. CONCLUSION

From the results of the study, the following conclusions can be drawn:

Based on the results of the research "The Effectiveness of Diabetes Exercise with Ergonomic Gymnastics on Blood Sugar Levels of Diabetes Mellitus Clients at the Indonesian Diabetes Association Clinic (PERSADIA) Tulungagung" on July 3 to 24 2020.

- Blood sugar levels in the Diabetes Exercise group before diabetes exercise had an average blood sugar level of 269.94 mg/dL. Blood sugar levels in the Ergonomic Gymnastics group before ergonomic exercise had an average blood sugar level of 234.83 mg/dL.
- Blood sugar levels in the Diabetes Exercise group after diabetes exercise average blood sugar levels were 259.33 mg/dL. Blood sugar levels in the Ergonomic Gymnastics group after Ergonomic Exercises average blood sugar levels are 231.33 mg/dL.
- Analysis of the effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels of clients with diabetes mellitus at the PERSADIA Tulungagung clinic, there was a change in blood sugar levels after diabetes exercise treatment with an average value of 259.33 mg/dL with a difference between before intervention and after diabetes exercise intervention of 9.67 mg/dL. Meanwhile, in the ergonomic exercise intervention group, there was a change in blood sugar levels after the ergonomic exercise treatment with an average value of 231.33 mg/dL with the difference between before and after the ergonomic exercise intervention was 3.5 mg/dL. Based on these data, it can be seen that the effectiveness of ergonomic diabetes exercise on blood sugar levels in DM clients is the provision of diabetes exercise intervention. This is evidenced by performing a statistical test of Independent t-test with an alpha significance value of 0.05 and the results obtained value of 0.029. It means that value < alpha value, which means H0 is rejected, which means that there is an effectiveness of diabetes exercise with ergonomic exercise on blood sugar levels.

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# Correlation of Knowledge and Health Behaviour about Covid-19 Protocol of Patient's Families at Irna Shafa, RSUI ORPEHA, Tulungagung, 2020

\* Farida<sup>a,1</sup>, Rischa Hermawati<sup>b,2</sup>

<sup>a</sup> Lecturer, Nursing, STIKes Hutama Abdi Husada, Tulungagung

<sup>b</sup> Bachelor, Nursing, STIKes Hutama Abdi Husada, Tulungagung

<sup>1</sup>poprimf@gmail.com\*, <sup>2</sup>rischahermawat89@gmail.com

## ABSTRACT

**Keywords:**  
Covid-19,  
Knowledge,  
Community Behavior

**Background:** Covid-19 is very dangerous disease because it could be transmitted very quickly. Its transmission was 10 times faster than other infectious diseases such as tuberculosis. The purpose of this study was to analyse correlation of knowledge and health behavior about Covid-19 Protocol of Patient's Families at Irna Shafa RSUI Orpeha Tulungagung.

**Methods:** Cross sectional design was used to describe the correlation. Sampel's study was one of patient's families at Irna Shafa RSUI Orpeha Tulungagung. Sampels size were 30 respondents who were selected by convenience sampling method. To analized the correlation, we used Spearman rho test.

**Results:** The results showed that respondents who had moderate level of knowledge are 17 respondents (57%), another had good (27%), and poor (16%). According to behaviours level, the most of respondents had good behavior (77%). Based on statistical tests using Spearman rho, it was obtained  $\rho$  value (0.006) with  $\alpha$  (0.05).

**Conclusions:** It was concluded that there were correlation between knowledge and health behavior about Covid-19 Protocol of Patient's Family at Irna Shafa RSUI Orpeha Tulungagung. Finally, this Recomendation were to improve health education about Covid-19 Protocol in communities and communities must comply with health protocols

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## I. INTRODUCTION

Covid-19 is a global pandemic case set since August 11, 2020. Covid-19 is a disease caused by the corona virus. Coronaviruse (CoV) is part of a family of viruses that cause illnesses ranging from flu to more severe illnesses such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV)<sup>1</sup>. The coronavirus-induced disease, otherwise known as Covid-19, is a new type discovered in 2019 and has never been identified as attacking humans before<sup>2</sup>. Cases of coronavirus appeared and attacked humans for the first time in Wuhan province, China. The beginning of its appearance is suspected to be pneumonia, with similar symptoms of flu in general<sup>3</sup>.

Covid-19 disease is a very dangerous disease because it is one of the diseases that are transmitted very quickly even in some research journals mentioned transmission 10 times faster than other infectious diseases such as tuberculosis<sup>4</sup>. The rapid transmission of covid in Indonesia that in some other developed countries such as Italy, Russia, america is one of them is the lack of public order in implementing behavior in accordance with the Covid-19 preventive health protocol made by the central government and WHO<sup>5</sup>.

Prevalence of Covid-19 in the world until September 7, 2020 mentioned that 27,358,786 people were confirmed positive through swab results. The prevalence of mortality globally

currently stands at 893,021 which places the United States as the country with the highest mortality of 189,226 people. The Global Case Fatality Rate (CFR) currently stands at more than 6% with the trend increasing every day. The number of countries infected with 215 countries in various parts of the world with 195 is transmission from local transmission<sup>6</sup>. The prevalence of Covid-19 in Indonesia since its inception came in on March 2, 2020 with the first cluster being transmission from Japanese people living in Malaysia at this time from data quoted on the official website of the ministry of health dated September 7, 2020 mentioning that nationally 200,035 cases were confirmed positive Covid-19 with the number of patients recovering 142,958 cases and cases died 8230 cases. Case Fatality Rate in Indonesia is very high when compared to CFR Global which is more than 7%<sup>7</sup>.

Based on data from the East Java Provincial Government, Covid-19 cases were confirmed positive until September 7, 2020, there were 36,342 cases with the number of patients cured 28731 cases with mortality of 2608 cases (Infocovid19.jatimpemprov.go.id, 2020).

On September 7, 2020 in Tulungagung recorded 321 positive cases where isolated 18 people, treated 7 cured 284 and died 3 with the number of suspects 31 people. Based on the accumulation of PDP recorded 735 prang cured 545 people and died 190 people. Based on the sub-district, it is known that 18 sub-districts are affected by Covid-19 from 19 sub-districts with the highest number of districts in kedungwaru sub-districts with 45 cases and identified all sub-districts there are positive cases of covid-19. The addition of Covid-19 cases in Tulungagung is quite stable where the addition of cases from day to day does not show a significant increase (Infocovid19.Jatimpemprov.go.id, 2020).

According to survey data conducted by the Faculty of Public Health (FKM) Universitas Airlangga where the level of compliance of the people of Greater Surabaya in places of worship is still low. Data found that 70% of them were still reluctant to wear masks, and did not keep a distance of 84%. Then in traditional markets, people who do not use masks 84%, not physical distancing 89%, there are also in hangouts, 88% do not pack, 89% do not keep their distance (Republika, 2020). Based on the results of a preliminary survey conducted on 10 families of patients in IRNA Syafa RSUI ORPEHA Tulungagung mentioned that most respondents follow health protocols if only in a hospital environment with a total of 9 respondents (90%).

The increase in cases of the Covid-19 pandemic in various countries is a result of the non-compliance of citizens in complying with health protocols issued by the central government. Deviant community behavior and not in accordance with health protocols causes various problems including the increasing prevalence of covid-19. Covid-19 disease is a dangerous disease and causes various complaints including cough, fever, fatigue, shortness of breath, and no appetite. But unlike influenza, the coronavirus can develop quickly to cause more severe infections and organ failure and death<sup>8</sup>. This emergency especially occurs in patients with previous health problems<sup>2</sup>. Covid-19 pandemic deaths are also very high with CFR of more than 5%. Patients who experience death are mostly accompanied by comorbidities such as lung disease, heart disease, kidney disease and metabolic disorders such as diabetes mellitus<sup>9</sup>. The increase in uncontrolled cases in some of the main areas of East Java which is currently the area with the highest prevalence in Indonesia causes some problems including unbalanced number of cases that require optimal treatment such as ventilator installation and observation in intensive rooms with the availability of hospital facilities and infrastructure that are still lacking. If this condition continues it will cause high mortality, health crisis, food crisis, economic crisis and social crisis (Surabaya.kompas.com /21/06/20).

The increase in cases of Covid-19 infection is one of them due to the disorderly behavior of the community in carrying out health protocols to prevent Covid-19 so that the transmission of coronavirus in the community is still very high. Lack of compliance with people's behavior in following Covid-19 prevention health protocols is influenced by many things, one of which can be caused by lack of knowledge possessed by the public about health protocols as an effort to prevent and transmit Covid-19<sup>10</sup>. Therefore, the author is interested in conducting research on "Knowledge Relationship with Health Behavior In Accordance with Covid-19 Protocol in The Families of Patients in Irna Shafa RSUI Orpeha Tulungagung Year 2020.

## II. METHOD

This research is analytical with a Corelational Analytic research design with a crosssectional approach. The purpose of this study analyzed the Relationship of Knowledge With Health Behavior In Accordance with the Covid-19 Protocol in The Families of Patients in Irna Shafa RSUI Orpeha Tulungagung in 2020. The study was conducted from October 26 to November 4, 2020. The population in this study was all the families of patients at Irna Shafa RSUI Orpeha Tulungagung. Some of the families of patients at Irna Shafa RSUI Orpeha Tulungagung were there at the time of the study. A number of 30 were selected using the Convenience Sampling technique.

The research instrument used in the study was a questionnaire sheet of respondents' knowledge and behavior levels supplemented with age, education and employment data.

## III. RESULTS AND DISCUSSION

The results of the study included the characteristics of respondents based on age, previous information, education and birth of children displayed in the form of the following tables:

Table 1 Distribution Characteristics of general data of research respondents

General Data	F	%
<u>Age</u>		
20-32 years	10	33
33-45 years	14	47
46-58 years	6	20
Total	30	100
<u>Education</u>		
Elementary School	5	16
Junior High School	8	27
Senior High School	9	30
Diploma 3/ Scholars	8	27
Total	30	100
<u>Work</u>		
Day Job	8	27
Private	18	60
Civil Servants	4	13
Total	30	100

Source: Research Primary Data, 2020

Based on research data can be seen the characteristics of respondents based on the age of 30 respondents studied, almost half of the age of respondents in the range of 33-45 years with the number of 14 respondents (47%). Based on the education level of 30 respondents studied, the majority had a high school education level with a total of 9 respondents (30%). Based on employment shows that most of the respondents have a private job with a total of 18 respondents (60%).

This section is presented about the analysis of Relationship data

Knowledge with Health Behavior In Accordance with the Covid-19 Protocol in The Families of Patients in Irna Shafa RSUI Orpeha Tulungagung Year 2020, which consists of univariate analysis and bivariate analysis as follows:

Table 2 Distribution of knowledge frequency about Covid-19 to patients' families at Irna Shafa RSUI Orpeha Tulungagung Year 2020

Knowledge	Frequency	Percentage
Good	8	27%
Medium	17	57%
Less	5	16%
Total	30	100%

Source: Research Primary Data, 2020

Based on table 2 showing that of the 30 respondents studied, it is known that most respondents have a moderate level of knowledge, with the number of 17 respondents (57%).

Table 3 Cross-tabulation of general data with Knowledge of Covid-19 Protocol in Patient Families In Irna Shafa RSUI Orpeha Tulungagung Year 2020,

General Data	Knowledge					
	Good		Medium		Less	
	F	%	F	%	F	%
<b>Education</b>						
Elementary School	0	0	0	0	5	17
Junior High School	0	0	8	27	0	0
Senior High School	0	0	9	30	0	0
Diploma 3/ Scholars	8	27	0	0	0	0
Total	8	27	17	57	5	17
<b>Age</b>						
20-32 Years	3	10	7	23	0	0
33-45 Years	5	17	7	23	2	7
46-58 Years	0	0	3	11	3	10
Total	8	27	17	57	5	17
<b>Work</b>						
Day Job	0	0	4	13	4	13
Private	5	17	12	40	1	3
Civil Servants	3	10	1	3	0	0
Total	8	27	17	57	5	17

From table 3 it was found that most respondents aged 33-45 years have moderate knowledge with the number of 7 respondents (50%) while only 2 respondents have less knowledge (14%).

Based on research data obtained that respondents who have a level of education D3 / S1 all have good knowledge with the number of 8 respondents (100%).

Based on research data from 18 respondents, most respondents who work as self-employed have a moderate level of education with a total of 12 respondents (67%).

Table 4 Distribution of behavioral frequency of Covid-19 prevention protocol in families of patients at Irna Shafa RSUI Orpeha Tulungagung Year 2020

Behaviour	Frequency	Percentage
Good	23	77%
Less	7	23%
Total	30	100%

Based on table 4 showing that out of 30 respondents studied, almost all of the respondents had good behavior with a total of 23 respondents (77%).

Table 5 Cross-tabulation of general data with Health Behaviors In Accordance with Covid-19 Protocol in Families of Patients In Irna Shafa RSUI Orpeha Tulungagung Year 2020

<b>General Data</b>	<b>Behaviour</b>			
	<b>Good</b>		<b>Less</b>	
	<b>F</b>	<b>%</b>	<b>F</b>	<b>%</b>
<b>Education</b>				
Elementary School	1	3	4	13
Junior High School	5	17	3	10
Senior High School	9	30	0	0
Diploma 3/Scholar	8	27	0	0
Total	23	77	7	23
<b>Age</b>				
20-32 years	10	33	0	0
33-45 years	11	37	3	10
46-58 years	2	7	4	13
Total	23	77	7	23
<b>Work</b>				
Day Job	4	13	4	13
Private	15	50	3	10
Civil Servants	4	13	0	0
Total	23	77	7	23

Based on table 5, it was found that of the 24 respondents aged 20-45 years, most of them had good behavior towards the implementation of health protocols to prevent Covid-19 transmission, all had good behavior with numbers (100%). Based on education, it was found that of the 17 respondents who had high school education levels and D3 / S1 all had good behavior with a total of 17 respondents (100%). Based on the work obtained that of the 22 respondents who worked as self-employed and civil servants mostly had good behavior with a total of 19 respondents (63%).

Table 6 Cross-Tabulation of Knowledge Relationships With Health Behaviors In Accordance with the Covid-19 Protocol in The Families of Patients In Irna Shafa RSUI Orpeha Tulungagung Year 2020,

Level Knowledge	Behaviour				Total	
	Good		Less		F	%
	F	%	F	%		
Good	8	100	0	0	8	100
Medium	14	82	3	18	17	100
Less	1	20	4	80	5	100
Total	23	77	7	23	30	100

Table 6 shows that out of 8 respondents who have good knowledge all behave well (100%) and from 5 respondents who have less knowledge almost all have less behavior with the number of 4 respondents (80%).

In determining the statistical test, the results of the study were tested using a normality test so that the distribution of data can be known using the Kolmogorov Smirnov test. Smirnov's kolmogorov test on the results of this study found 0,000 results so it can be said that the distribution of data is not normal. Due to normal data distribution then use spearman rho statistical test to find out Knowledge Relationship with Health Behavior In Accordance with Covid-19 Protocol in Families of Patients in Irna Shafa RSUI Orpeha Tulungagung Year 2020. Here are the results of statistical tests using spearman rho obtained  $\rho$  value (0.006) with  $\alpha$  (0.05), because  $\rho < \alpha$  then  $H_0$  is rejected and  $H_1$  is accepted so that there is a Knowledge Relationship With Health Behavior In Accordance with the Covid-19 Protocol in the Family of Patients in Irna Shafa RSUI Orpeha Tulungagung Year 2020.

In this section contains about the interpretation and discussion of research results related to theoretical reviews or literature studies and related research, namely the Relationship of Knowledge with Health Behaviors in Accordance with the Covid-19 Protocol in the Families of Patients in Irna Shafa RSUI Orpeha Tulungagung Year 2020.

Based on table 6 showing that of the 30 respondents studied, it is known that most

respondents have a moderate level of knowledge, with the number of respondents (57%), respondents who have good knowledge 8 respondents (27%) and respondents who have less than 5 respondents (16%).

Knowledge is influenced by several things including the level of education and previous sources of information. Knowledge can be defined as perception that occurs after people sensing a particular object, knowledge occurs through the five human senses, namely the sense of sight, hearing, smell, taste, and groping. According to 11 knowledge is one of the important aspects behind a person's behavior in his life.

It is in line between the facts and the research theory that many factors influence the respondent's knowledge level. According to researchers, this is because knowledge is one of the outputs of a learning process, where the learning process is also influenced by education, age, and environmental conditions of respondents such as one of the work environment.

Based on research data found that most respondents aged 33-45 years have moderate knowledge with the number of 7 respondents (50%) while only 2 respondents have less knowledge (14%). Based on research conducted by 12 mentions that knowledge is also influenced by factors of a person's age. Technological developments and the advancement of the times due to globalization can be followed very easily by the productive age group. Research conducted by 13 gained good knowledge among many research respondents based on age distribution it turns out that productive age dominates with the number of 78% of the proportion of respondents who have good knowledge based on age level. In line between facts and theories that researchers found that in respondents who are productive in the range (20-45 years) obtained mostly have good and moderate knowledge. According to the researchers, this is because in respondents aged 20-45 years is a reflection of the active generation of internet users who can get and access information widely. This may cause why productive respondents have a lot of insight or knowledge in accordance with current updates based on the development of existing information. This, according to the researchers, requires further research.

Based on research data obtained that respondents who have a level of education D3 / S1 all have good knowledge with the number of 8 respondents (100%). According to the theory presented by 14 mentions that the level of education is correlated to one's insight and knowledge. So that the higher a person's level of education, the better the level of knowledge of the person. Research conducted by 3 also mentioned that the group of respondents with higher education (D3 and S1) had more ability and understanding when compared to the education group below. This is because the ability of reason and intellectuality that is awakened is also influenced by the educational process taken by someone.

In line with the theory and facts obtained by researchers that at the higher education level (D3 / S1) all respondents have a good level of knowledge. According to researchers, this is because in respondents with higher education levels have a better foundation and provision of insight. In addition, respondents with higher education are also easier to receive and process information so that it is easier to understand the information provided.

Based on research data from 18 respondents, most respondents who work as self-employed have a moderate level of education with a total of 12 respondents (67%). One's environment becomes one of the important factors in shaping one's personality, attitude and knowledge 12. The individual environment is a reflection of the dominant interaction patterns experienced by the individual. A good environment, will form a good individual person anyway and vice versa. Based on research conducted by 13 it was found that in most groups of menial workers such as workers, farmers, parking workers, and other manual laborers obtained a poor distribution of knowledge levels, while in educated work environments such as teachers, police, tni and other skill-based workers obtained a good proportion of knowledge levels.

In line between the theory and the research facts above that some respondents who have private jobs and civil servants have a good and moderate level of knowledge. According to the researchers, this is because in the work group, most respondents already have a good educational strata as a basis in understanding and developing information into a complete knowledge. This is one of the reasons why in the private work environment and civil servants most respondents have good and moderate knowledge.

Based on table 6 shows that out of 30 respondents studied, almost all of the respondents had good behavior with a total of 23 respondents (77%) while respondents who had bad behavior amounted to 7 respondents (23%). According to the theory described by 14 mentions that in the formation of behavior there are several influential factors including predisposing, enabling and reinforcing factors. One of the predisposing factors is the level of knowledge. The higher a person's level of knowledge, the better the behavior of the person. While according to research conducted by 3 many aspects behind the formation of a person's behavior, including the intentions, attitudes of trust, values and beliefs of individuals.

In line with the facts and theories that researchers found that the level of behavior of study respondents varied. Each respondent has different characteristics and a different background. The level of knowledge, education, age and work of research respondents became the basis and one of the factors that initiated the formation of respondents' behavior in carrying out Covid-19 preventive health protocols.

Based on research data obtained that of 24 respondents aged 20-45 years mostly have good behavior towards the implementation of health protocols to prevent Covid-19 transmission all have good behavior with the number (100%). The formation of a person's behavior is based on the level of knowledge and insight of the individual where the age of the respondent also affects the level of information of a person. In line with research conducted by 11 conducted on groups of employees in marble mining areas, that in productive age respondents mostly have adaptive behavior in efforts to prevent occupational diseases that can be caused by marble waste and pollutants. This is because in the productive age a person is active in social networks and cyberspace so that exposure to information can be widely accessed and obtained by the individual.

In line with the facts and theories in this study that in respondents of productive age have good behavior in efforts to implement health protocols to prevent Covid-19. According to researchers, this is because at that age respondents have enough knowledge and information by getting from various sources both virtually and directly through the community. So that respondents have enough consideration to choose and sort out good behavior and bad behavior.

Based on research data obtained that of 17 respondents who have high school education levels and D3 / S1 all have good behavior with a total of 17 respondents (100%).

12 that the predisposition factor of behavior is knowledge. The knowledge possessed by a person will reflect the level of education that has been taken. A person with a good level of knowledge will show good behavior and vice versa. In line with research conducted by 15 that most of the study respondents who have good behavior and adaptive have a good educational background. This is because mature individual perception and reasoning will influence the decision to act and behave.

In line between the theory and the fact found by researchers that respondents with good behavior are almost entirely at the level of high school education and D3 / S1 when compared to education below. According to researchers, this is because respondents with higher education already have a lot of information in addition to respondents with higher education easily receive and understand the information provided, so that little information obtained can be developed to be more widespread.

Based on research data obtained that of 22 respondents who work as self-employed and civil servants mostly have good behavior with a total of 19 respondents (63%).

Research conducted by 16 mentions that the work environment of research respondents affects the habits and behavior patterns of the person. This is because most behaviors and habits are formed through the process of learning and observing from the surrounding environment. Individuals who grow and thrive in an educated environment will behave and act more wisely. Research conducted by 2 said that work in the private sector and civil servants is one form of skills-based and educational work where employees and workers already have special grades and qualifications so that they have good knowledge.

According to the researchers the facts and theories that researchers find based on the results of the study are appropriate. This is because most of the research respondents who work in the formal skills sector with an educated work environment have good behavior when compared to respondents who work in the daily labor sector.

Based on table 6 shows that out of 8 respondents who have good knowledge all behave well (100%) and from 5 respondents who have less knowledge almost all have less behavior with the number of 4 respondents (80%). Based on the results of a simple comparative analysis using spearman rho statistical test where the level of meaning or  $\alpha$  (0.05) obtained the value of P 0.006 so that the value of  $P < \alpha$  therefore it can be concluded that there is a Knowledge Relationship With Health Behavior In accordance with the Covid-19 Protocol in the Family of Patients In Irna Shafa RSUI Orpeha Tulungagung Year 2020. According to research conducted by 17 it was found that individuals who have good knowledge will influence their behavior. This means that the better the level of knowledge, the better the behavior carried out by the person. Another study conducted by 3 mentions that the dominant factors that influence human behavior are knowledge, insight and experience. Good knowledge will encourage a person to behave adaptively whereas one's lack of knowledge will lead to inappropriate behavior.

In line with the theory and research facts that almost all respondents who have knowledge in a good level have good behavior. This is according to researchers because respondents who have good knowledge already have a basis and provision in every behavior. Respondents with good knowledge will understand the importance of implementing health protocols for prevention and countermeasures of covid-19.

The results of this study are supported by previous research conducted by 18 explaining that the level of knowledge is positively correlated to parental behavior in the provision of basic immunizations in children of pre-school age. Research conducted by 14 mentions that knowledge is a predisposition factor behind the onset of behavior (behavior) from individuals.

In line between the theory and the fact that researchers found that the better the respondent's knowledge, the better the behavior. One's knowledge becomes the basis for making decisions in any form. The decision-making that underlies an individual's behavior will be very influential from the level of knowledge possessed.

The recommendations of the results of this study need to be made efforts to raise awareness of behavior in the importance of complying with health protocols for prevention and countermeasures of Covid-19, especially those that must be done by ordinary people and the general public. The selection of language, means of communication and the affordability of information will also affect the perception and responsiveness of the layers of society. Government and health facilities must be aware of the dynamics that exist in the community if viewed from the level of education, type of work and age structure. Each of these characteristics will affect the type of health education that is right to provide, the method of giving and using language so that it is easily absorbed and transformed by all levels of society.

#### IV.CONCLUSION

Based on the results of research on The Relationship of Knowledge with Health Behavior in Accordance with the Covid-19 Protocol in the Families of Patients in Irna Shafa RSUI Orpeha Tulungagung in 2020: Based on research data shows that of the 30 respondents known most respondents have a moderate level of knowledge, namely with the number of 17 respondents (57%) while others have a good level of knowledge, namely 8 respondents (27%), and less than 5 respondents (16%). Based on research data obtained that from 30 respondents almost all of the respondents had good behavior with a total of 23 respondents (77%), while the rest had bad behavior, namely 7 respondents (23%). Based on cross-tabulation of knowledge with behavior found that from 8 respondents who have good knowledge all behave well (100%) and from 5 respondents who have less knowledge almost all have less behavior with the number of 4 respondents (80%). So that there is a Knowledge Relationship With Health Behavior In Accordance with the Covid-19 Protocol in the Families of Patients in Irna Shafa RSUI Orpeha Tulungagung year 2020 (P: 0.006).

## V. ACKNOWLEDGMENT

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# The Effect Of Relaxation Techniques And Warm Compresses On Reducing Disminorore Pain In Adolescents

\*Nurhidayati<sup>1</sup>, Fiki Hesti Eni<sup>2</sup>

<sup>a</sup> Lecturer, Nursing, STIKes Hutama Abdi Husada, Tulungagung

<sup>b</sup> Bachelor, Nursing, STIKes Hutama Abdi Husada, Tulungagung

[\\*nurhidayati966@gmail.com](mailto:nurhidayati966@gmail.com)

## ABSTRACT

*Keywords:*  
Relaxation,  
Warm Compresses,  
Disminorore Pain

**Background:** Dysmenorrhea is defined as a symptom of recurrence or in medical terms it is called catmenial pelvic pain, is a condition in which a woman experiences pain during menstruation which has a bad effect causing disturbances in carrying out daily activities because of the pain. Dysmenorrhea pain management is divided into 2 categories, namely non-pharmacological and pharmacological approaches. The purpose of this study was to determine the effect of relaxation techniques and warm compresses on reducing dysmenorrhea pain in adolescents in Pucangan Village, Kauman District, Tulungagung.

**Methods:** The research design uses an experimental method (one grub pre test – post test). The research location is in Pucangan village, Kauman sub-district, Tulungagung, population of 70 members, sample of 30 respondents. Using wilcoxon signed ranks statistical test. Measurement and assessment using observation sheets.

**Results:** The results of observations and research found 30 respondents who experienced a decrease in dysmenorrhea pain after relaxation techniques and warm compresses were 21 respondents. The results of the Wilcoxon signed ranks test statistical test obtained p value <a or 0.000 <0.05 Then H0 is rejected and H1 is accepted, that is, there is an effect of relaxation techniques and warm compresses on reducing dysmenorrhea pain on reducing dysmenorrhea pain.

**Conclusions:** Based on the results above, it can be concluded that there is an effect of relaxation and compression techniques on reducing dysmenorrhea pain in adolescents in Pucangan village, Kauman sub-district, Tulungagung in 2021. Therefore, it is recommended that teenagers if they experience dysmenorrhea pain can do non- pharmacological therapy in the form of relaxation techniques and independent warm compresses. at home.

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## I. INTRODUCTION

Humans are creatures that grow and develop, one of the stages of growth and development is adolescence. Adolescence is a period of transition from childhood to adulthood, usually from the age of 10-19 years. Adolescents experience changes in three aspects, namely psychosocial development which states that adolescents are trying to find identity, cognitive development which is the ability to think and physical changes [1]. According to the World Health Organization (WHO), adolescence is a period of transition from childhood to adulthood, at which time there is rapid growth including reproductive function that affects developmental changes, both physical, mental, and social roles. is a natural and physiological process in a woman. In early adolescence, menstruation sometimes causes fear and concern, because when menstruation comes it is usually accompanied by

several complaints, one of which is menstrual pain (dysmenorrhea) [2].

Dysmenorrhea is defined as a symptom of recurrence or in medical terms it is called catmenial pelvic pain, which is a condition in which a woman experiences pain during menstruation which has a bad effect causing disturbances in carrying out daily activities because of the pain. This condition can last 2 days or more than the length of menstrual days experienced every month [3].

The incidence of primary dysmenorrhea is quite high. According to Lacovides et al (2015) around 45% - 95% of menstruating women experience primary dysmenorrhea [4]. In Indonesia, the incidence of primary dysmenorrhea is quite large, according to Ramadani (2014) the incidence of primary dysmenorrhea reaches around 50% - 70% of women in Indonesia. In East Java [5], research conducted by Ammar (2016) showed the incidence of primary dysmenorrhea was 71.3% [6]

Dysmenorrhea can have an impact on the activities or activities of women, especially teenagers. If a student experiences dysmenorrhea, their learning activities at school are disrupted and do not attend school. For example, a student who experiences dysmenorrhea cannot concentrate on studying and learning motivation will decrease because of the dysmenorrhea that is felt in the teaching and learning process and sometimes someone asks for permission to go home because they cannot stand the dysmenorrhea they feel [7].

The problem of menstrual pain is the problem that most women complain about. Menstrual pain can attack women who experience menstruation at any age, there is no age limit and is accompanied by aggravating conditions such as: dizziness, cold sweats, and even fainting. If this is the case, of course, menstrual pain should not be ignored. Menstrual pain must be handled properly [8].

In general, the management of dysmenorrhea pain is divided into two categories, namely pharmacological treatment with the administration of NSAID drugs that can relieve pain by blocking prostaglandins that cause pain, while non-pharmacological treatments include relaxation techniques, aromatherapy, yoga, acupressure, and warm or cold compresses on the skin. painful areas [9]. In this case the nurse plays a role in non-pharmacological treatment.

Relaxation is a technique of loosening or releasing tension, for example: breathing slowly. Besides being able to reduce pain intensity, deep breathing relaxation techniques can also increase blood oxygen [10]. The principle underlying pain reduction by deep breathing relaxation techniques lies in the physiology of the autonomic nervous system which is part of the peripheral nervous system which maintains homeostasis of the individual's internal environment.

The use of warm compresses is expected to increase muscle relaxation and reduce pain due to spasm or stiffness and provide a local feeling of warmth. In general, heat is quite useful for treatment. Heat relieves ischemia by decreasing contraction and increasing circulation. Warm compresses can cause the body to release endorphins, thereby blocking the transmission of painful stimulation.

Based on the above background, the authors are interested in researching "The effect of relaxation techniques and warm compresses on dysmenorrhea pain in adolescents in Pucangan Village, Kauman District, Tulungagung Regency 2021".

## II. METHOD

The research method that will be used is an experimental research method with the type of "One-Group Pre-test-Post-test Design" which reveals a causal relationship by involving two

groups of subjects. The subject group was observed before the intervention, then observed again after the intervention. This research was conducted on April 1 – June 10, 2021. The population in this study were all young women in Pucangan Village, Kauman Tulungagung District, totaling 70 teenagers. The sample in this study was mostly teenagers who experienced dysmenorrhea in Pucangan Village, Kauman Tulungagung District, totaling 30 teenagers who met the inclusion criteria who were selected using purposive sampling technique.

The research instrument used in this study is the SOP for Relaxation Techniques and Warm Compresses and contains general data on respondents such as adolescent age.

### III. RESULTS AND DISCUSSION

This section presents data analysis on the effect of relaxation techniques and warm compresses on reducing dysmenorrhea pain in adolescents in Pucangan village, Kauman district, Tulungagung 2021, which consists of the following:

#### 1. General date

Characteristics of respondents by age

General date	F	%
<b>Age</b>		
14 – 16	12	40
17 – 19	10	33
20 – 23	8	27
Total	30	100
<b>Age</b>		
<b>Respondent</b>		

Source: Research 2021

Based on the research data, it can be seen that the characteristics of respondents based on age who experienced dysmenorrhea during menstruation were the age of 14-16 years as many as 40% (12 respondents) then the age of 17-19 years as many as 33% (10 respondents) and the age of 20-23 years as many as 27 % (8 respondents).

#### 2. Special data

##### a. Pain level before doing relaxation techniques and warm compresses

Table 4.1 Dysmenorrhea pain before doing relaxation techniques and warm compresses

Code	Pain level	Frequency	Percent
1.	Light	0	0
2.	Medium	13	43,33
3.	Heavy	17	56,67
Total		30	100%

(Source: Research Primary Data 2021)

Based on table 4.1 above, it can be explained that adolescents, totaling 30 respondents who experienced dysmenorrhea with a percentage of 56.67% severe pain, were 17 respondents while 43.33% experienced moderate pain with a total of 13 respondents.

- b. The level of pain after doing relaxation techniques and warm compresses

Table 4.2 Dysmenorrhea pain after doing relaxation techniques and warm compresses

Code	Pain level	Frequency	Percent
1.	Light	21	70
2.	Medium	7	23,33
3.	Heavy	2	6,67
	Total	30	100%

(Source: Research Primary Data 2021)

Based on table 4.2 above, it can be explained that 30 respondents who experienced dysmenorrhea with a percentage of 70% mild pain were 21 respondents and 23.33% had moderate pain with 7 respondents and 6.67% severe pain 2 respondents.

### 3. Statistical Test Results

In determining the statistical test of the effect of relaxation techniques and warm compresses on reducing dysmenorrhea pain in adolescents in Pucangan village, Kauman sub-district, Tulungagung from April 1 to June 10, 2021. Using the Wilcoxon Signed Ranks statistical test, p value  $>= 0.05$ , which means H<sub>0</sub> is accepted and H<sub>1</sub> is rejected meaning that there is no effect of relaxation techniques and warm compresses on reducing dysmenorrhea pain in adolescents and if p value  $<= 0.05$ , H<sub>0</sub> is rejected, H<sub>1</sub> is accepted meaning that there is an effect of relaxation techniques and warm compresses on reducing dysmenorrhea pain in adolescents.

The results of the Wilcoxon Signed Ranks statistical test obtained p value < or 0.00 < 0.05, this indicates that H<sub>0</sub> is rejected, H<sub>1</sub> is accepted, which means that there is an effect of relaxation techniques and warm compresses on reducing dysmenorrhea pain in adolescents in Pucangan village, Kauman district, Tulungagung.

This section contains the interpretation and discussion of research results related to theoretical reviews or literature studies and related research on the effect of relaxation techniques and warm compresses on reducing dysmenorrhea pain in adolescents in Pucangan Village, Kauman District, Tulungagung.

#### A. Dysmenorrhea Pain Levels Before Relaxation Techniques And Warm Compresses In Pucangan Village, Kauman Tulungagung District

Based on table 4.1 about dysmenorrhea pain before technique relaxation and warm compresses from 30 respondents, who experienced mild pain 0 respondents or none experienced mild pain, moderate pain was 13 respondents (43.33%), severe pain was 17 respondents (56.67%) in adolescents in Pucangan village District of Tulungagung.

According to Anurogo and Wulandari, (2011) stated that dysmenorrhea is abdominal pain caused by uterine muscle spasms due to an imbalance of the hormone progesterone in the blood [8]. Pain is something that hurts the body that is subjectively expressed by the individual who experiences it [11]. According to Smeltzer, S.C Bare B.G (2008) the level of pain can be measured using a numerical scale with criteria for mild pain on a scale of 1-3, moderate pain on a scale of 4-6, and severe pain on a scale of 7-10 [12]. According to Abedia, (2011) states that dysmenorrhea often occurs in adolescents aged 14-24 years who are emotionally unstable.

Based on the facts and theories as shown in diagram 4.1, the distribution of respondents' characteristics based on the age of adolescents who experienced dysmenorrhea, namely 12 respondents aged 14-16, 10 respondents aged 17-19, and 8 respondents aged 20-24. Prior to the relaxation technique and warm compresses, respondents who felt dysmenorrhea pain can be seen in table 4.1, namely respondents with moderate pain levels 13 respondents 43.33% and severe pain 17 respondents 56.67%.

This happens because in adolescence, especially women aged 14- 24 years there is a hormonal imbalance so that adolescents often experience emotional instability due to psychological factors and natural menstruation which can cause dysmenorrhea pain. This is in accordance with the research of Proverawati & Misroh (2009), that the supporting factors as a trigger for the occurrence of menstrual pain are psychological that occurs in adolescents and mothers whose emotions are unstable, it is easier to experience dysmenorrhea pain [13].

#### B. Dysmenorrhea pain level after relaxation technique and warm compress

Based on table 4.2 about pain after relaxation techniques and warm compresses from 30 respondents, most of the respondents felt mild pain as many as 21 respondents (70%), moderate pain in 7 respondents (23.33%), severe pain in 2 respondents (6.67% ), in adolescents in Pucangan Village, Kauman District, Tulungagung.

According to Handerson (2005) states that the decrease in pain by deep breathing relaxation techniques is caused when a person performs deep breathing relaxation to control the pain felt, the body will increase the parasympathetic nervous component stimulants, then this causes a decrease in the hormones cortisol and adrenaline in the body which affects a person's stress level so that it can increase concentration and make the client feel calm to regulate the rhythm of breathing to be regular. This will encourage an increase in PaCO<sub>2</sub> levels and decrease Ph levels, resulting in an increase in oxygen (O<sub>2</sub>) levels [14].

According to Bobak (2012), warm compresses serve to overcome or reduce pain, where heat can relieve ischemia by reducing uterine contractions and smoothing blood vessels so that it can relieve pain by reducing tension and increasing feelings of well-being, increasing menstrual flow, and relieving pelvic vasocongestion. Warmth is a very effective method of reducing muscle pain or spasms [15].

Based on facts and theory, it shows that respondents feel dysmenorrhea pain after relaxation techniques and warm compresses have decreased pain, this is evidenced by the results of research after relaxation techniques and warm compresses are in table 4.2 with the results of mild pain 70% (21 respondents), moderate pain 23.33% (7 respondents), and severe pain 6.67% (2 respondents).

#### C. The Effect of Relaxation Techniques and Warm Compresses on Reducing Dysmenorrhea Pain in Adolescents in Pucangan Village, Kauman District

Based on table 4.3 it can be explained that as many as 30 respondents who experienced dysmenorrhea pain before relaxation techniques and warm compresses, mild pain 0, and 13 respondents (43.33%) who experienced moderate pain, 17 respondents (56.67%) who experienced severe pain, and after the relaxation technique and warm compresses, 21 respondents (70%), moderate pain (23.33%) and 2 respondents (6.67%) experienced mild pain.

From these results it can be concluded that of the 30 respondents who experienced a decrease in dysmenorrhea pain after relaxation techniques and warm compresses there were as many as 21 respondents. The results of the Wilcoxon signed ranks test statistic obtained p value <a or 0.000 <0.05, indicating that there is an effect of relaxation techniques and warm compresses on reducing dysmenorrhea pain in adolescents.

According to Potter & Perry (2005) in general the management of dysmenorrhea pain is divided into 2 categories, namely non-pharmacological and pharmacological treatment. Pharmacologically, pain can be treated with analgesic therapy which is the most commonly used method for pain relief. Although analgesics can relieve pain effectively, but the use of analgesics will have an addictive effect and will provide drug side effects that are dangerous for the patient. Non-pharmacological methods include warm compresses, relaxation techniques such as deep breathing and yoga [11].

Based on facts and theory, relaxation techniques and warm compresses can reduce dysmenorrhea pain levels because relaxation techniques and warm compresses are one of the non-pharmacological treatments. because relaxation will make a person able to reduce physiological tension, the body will increase the parasympathetic nervous component stimulants, so that it can cause a decrease in cortisol

and adrenaline hormone levels in the body which can affect a person's stress level and can increase concentration. With regular breathing and the body in a relaxed state a person can control the pain that is felt. Warm compresses can also be used in the treatment of pain and relax tense muscles, warm compresses are carried out with a bottle filled with warm water by conduction where heat is transferred from the bottle to the stomach so that the stomach is compressed into warm this causes dilation of blood vessels in the affected area. experience pain and increase blood flow to the area. Warmth in the abdomen can increase psychological relaxation and a sense of comfort, so that the presence of comfort can reduce the response to pain that was originally felt. The results of the study are in line with research conducted by Nisa Nur Cahyawati (2017) who examined the effectiveness of relaxation techniques and warm compresses on reducing dysmenorrhea pain in adolescents in Sumberingin village, ngunut district, Tulungagung in 2017. The results showed that relaxation techniques and warm compresses were effective in reducing Dysmenorrhea pain in adolescents is evidenced by a p value of  $0.001 < 0.05$ . From the explanation above, it can be concluded that there is an effect of relaxation and compression techniques on reducing dysmenorrhea pain in adolescents in Pucangan village, Kauman sub-district, Tulungagung in 2021. Therefore, it is recommended that teenagers if they experience dysmenorrhea pain can do non-pharmacological therapy in the form of relaxation techniques and independent warm compresses. at home.

#### IV. CONCLUSION

Based on the results of the research that has been done, the following conclusions can be drawn:

1. The level of pain before the treatment of relaxation techniques and warm compresses all respondents felt dysmenorrhea pain as many as 30 respondents (100%) mild pain 0 respondents or none experienced mild pain, moderate pain 13 respondents (43.33%), severe pain 17 respondents (56.67%) in Pucangan village, Kauman sub-district, Tulungagung 2021.
2. The level of pain after treatment with relaxation techniques and warm compresses mild pain 21 respondents (70%), moderate pain 7 respondents (23.33%), severe 2 respondents (6.67%), in Pucangan village, Kauman district, Tulungagung.
3. The results of the Wilcoxon signed ranks test statistic that p value  $< a$  or  $0.000 < 0.05$  indicates that there is an effect of relaxation techniques and warm compresses on reducing dysmenorrhea pain in adolescents in Pucangan village, Kauman district, Tulungagung.

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# The Influence of Education Health on The Handling of Address The Crisis Fracture Spina servikal in Accidents Traffic with The Methods Roleplay to Knowledge Member of The Club a Motor

\*Suciati<sup>1</sup>, Evania Dyita Hastuti<sup>2</sup>

<sup>a</sup> Lecturer, Nursing, STIKes Hutama Abdi Husada, Tulungagung

<sup>b</sup> Bachelor, Nursing, STIKes Hutama Abdi Husada, Tulungagung

[suciati@stikestulungagung.ac.id](mailto:suciati@stikestulungagung.ac.id)

## AB STRAC T

*Keywords:*  
Spinaservikal  
Fraktur,  
Knowledge,  
Health Education

**Background:** Traffic accidents are an unexpected street event involving a vehicle with other road users, occurring in a community that has many highway activities, one of which is a motorcycle club. According to RISKESDAS, 2013 accidents caused by cervical fractures are about 28 (12.96%). The further impact of spinaservikal fractures is death. This is due to a lack of information and understanding of what a spineservikal fracture is and how it is treated initially. The purpose of this study was to determine the influence of health education on the knowledge of motor club members and expected members of the motor club to get the right information about the handling of sprayservikal fracture

**Methods:** The design of this study is One-Group Pre-post Test Design by comparing the results of pre test and post test without doing comparison with the influence imposed in other groups. This study was conducted on May 14, 2018. The population of this study were all members of motorcycle clubs using total sampling technique with a total of 40 respondents. Data collection using questionnaire sheets. Then the data is processed with Editing, Coding, Scoring and Tabulating techniques Further analyzed by wilcoxon statistic test

**Results:** From the result of research indicate that there is influence of health education to the knowledge of motor club members which is shown with  $p = 0,000 \leq 0,05$ .

**Conclusions:** Therefore, researchers believe that the provision of health information is very important, including members of the motor club and other related parties can work together to provide health education on the handling of cervical spine fracture to prevent preventive defects continue

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## I. INTRODUCTION

Address the crisis is state of being life threatening who need help right, fast, is careful and accurate, when causing not resulting in death and disability [1]. Traffic accidents be a thing in a way that is not suspected and involving vehicles with or without other road users resulting in human sacrifices or loss of wealth [2]. It generally occurs in the society that has a lot of activity in highway, one is. motor club. According to the primary health [3] From the data an accident with servikal fracture of the bone .As for the prevalence of fracture about 28 pounds (12,96%) Patients in awareness because of traffic accident always suffers injury servikal, either injury to the cervical spine, supporting tissues, or injury to the cervical spine [4].

Management of the emergency cervical spine fracture is an emergency that requires immediate treatment. Spinal trauma is associated with spinal cord injury and can result in paralysis, so it is very important to protect the neck [5].

A cervical dislocation is the detachment of one of the structures from the cervical spine. Cervical subluxation is a condition where part of the cervical bone is detached. A cervical fracture is a disconnection from the body of the cervical vertebrae and is marked by compression of the spinal cord in the cervical region. Health education is health behavior, or behavior to maintain and improve health that is conducive to the goals of health promotion [6].

Health education in the sense of education, in general, is all planned efforts to influence other people, whether individuals, groups, or communities, so that they do what is expected by the perpetrators of education or health promotion. And this limitation implies the elements of input (targets and educators of education), process (planned efforts to influence others), and outputs (doing what is expected). Expected results of a health promotion or education.

According to Notoatmodjo (2007), the method of health education is one of the factors that influence the achievement of an optimal counseling outcome. The methods proposed include individual (individual) education methods, guidance and education, interviews, group education methods, mass education methods [7].

From the description above, the researcher decided to use it as a study material in the form of research writing with the title The Effect of Health Education About Handling Cervical Spinal Fractures in Traffic Accidents Using the Role Play Method on Knowledge of Motorcycle Club Members at Sembung Tulungagung Basecamp in 2018.

## II. METHOD

Research design is a general pattern or guide that can be applied in several studies. With a clear research problem, conceptual framework and clear definition of variables, a design can be used as a description of the researcher's planning in detail in terms of data collection and analysis [8].

The design used in this research is One Group Pre-test-posttest Design using pre-test and post-test methods. The method of this type of research is to reveal a causal relationship by involving a group of subjects. The subject group was observed before the intervention, then observed again after the intervention [9].

In this research, a person is given treatment in the form of health education. The assessment was carried out before and after being given treatment to the respondents. In this study, the samples used were all members of the motorcycle club who were at the Sembung Tulungagung basecamp. Instruments are facility tools used by researchers in collecting data so that work is easier and the results are better in the sense of being more accurate, complete, and systematic so that they are easy to process [10]. In this study, the instrument used was a questionnaire sheet.

The data collection tool in this study uses a questionnaire with the following indicators: True : 1 False : 0. Time This research was conducted on May 14, 2018. Data analysis is a data processing from the collected data [11]. Then the data is analyzed using the Wilcoxon test which will show whether or not health education has an effect on the knowledge of motorcycle club members. This Wilcoxon test is used to test the significance of the comparative hypothesis of two correlated samples if the data is in ordinal form.

To determine whether the effect of health education on handling emergency cervical spine fractures in traffic accidents using the role play method on the knowledge of motorcycle club members at Sembung Tulungagaung Basecamp using a computer with SPSS (Statistical Product and Service Solution Version 13 Windows) technique. To find out the the significant level between the variables in the measurement of significant influence with the level of significance is  $p < 0.05$ , meaning that  $H_0$  is rejected,  $H_1$  is accepted, meaning that there is an influence between the variables being measured, if  $p \geq 0.05$ , it means that  $H_0$  is accepted and  $H_1$  is rejected, it means that there is no influence between the variables.

From the results of the Wilcoxon statistical test on the effect of providing health education on handling emergency cervical spine fractures in traffic accidents with the role play method on the knowledge of motorcycle club members, it was found that  $p = 0.00$  where  $p < 0.05$  so  $H_0$  was rejected, which means that there is an effect of providing health education on knowledge of motorcycle club members at Sembung Tulungagung Basecamp 2018.

### III. RESULTS AND DISCUSSION

Table 1. Frequency distribution of respondents' knowledge about the emergency treatment of cervical spine fractures in traffic accidents using the role play method after being given health education.

Knowledge	Total	Percentage
Good	25	62,5%
Enough	13	32,5%
Less	2	5%
<b>Total</b>	<b>40</b>	<b>100%</b>

Table 2. Distribution of the frequency of respondents' knowledge about the emergency treatment of cervical spine fractures in traffic accidents using the role play method before and after being given health education.

Knowledge	Before		After	
	Total	%	Total	%
Good	7	17,5%	25	62,5%
Enough	20	50%	13	32,5%
Less	13	32,5%	2	5%
<b>Total</b>	<b>40</b>	<b>100</b>	<b>40</b>	<b>100</b>

## DISCUSSION

### A. Knowledge of motorcycle club members before being given health education about the emergency treatment of cervical spine fractures in traffic accidents using the role play method.

Based on table 1, it can be seen that the knowledge of motorcycle club members from 40 respondents before being given health education about handling emergency spinal fractures in traffic accidents with the role play method half of the respondents had less knowledge, namely 20 respondents (50%). Knowledge before being given health education is the result of knowing that occurs after people sense a certain object [12]. According to Wawan and Dewi (2011) factors that influence a person's knowledge include age, education, and sources of information [13]. It is known that of the 40 respondents who were 23-28 years old before being given health education, most of the respondents had sufficient knowledge on average, with a total of 24 people (60%).

From the results of the facts and theories above, the researcher argues that the theory about age is in accordance with the existing facts, where a person's age of 26-35 years in obtaining knowledge is acceptable. The researcher also believes that the age of the respondents who are adults receives a lot of information about the emergency treatment of cervical spine fractures so that the knowledge they get is sufficient.

### B. Respondent's knowledge about cervical spine trauma after being given health education.

Based on table 2, it can be concluded that of the 40 respondents after being given health education about handling emergency spinal fractures in traffic accidents with the role play method, most of them had good knowledge as much as 25 (62.5%). more than most of the respondents knowledge turned out to be good. Knowledge after being given health education is a result of knowing that occurs after people sense a certain object [12].

Based on the cross tabulation in Appendix 10.5, it can be seen that of the 40 respondents after being given health education about the emergency treatment of cervical spine fractures with high school education, almost half of the respondents had good knowledge, namely 13 (32.5%). In junior high school education, a small part of the respondents have less knowledge of 1 (5%) Likewise with higher education (D3/S1) almost half of the respondents have good knowledge, namely 12 people (30%) in this education people should already have the ability to start reasoning logically logically, and draw conclusions from the available information, but the information obtained is not entirely complete. This education has

high level of academic or professional ability so that it can apply and develop the knowledge gained.

According to Notoadmojo (2012) education is all planned efforts to influence other people, whether individuals, groups, or communities, so that they do what is expected by the perpetrators of education or health promotion [6]. The education level is categorized into basic or low education (SD-SMP/MTS), secondary education (SMA/SMK) and higher education (D3/S1). The higher a person's education, the better knowledge he has. So, someone will be easier to accept and absorb new things. In addition, it can help them in completing new things. Likewise, the lower the level of education of a person, the knowledge and information obtained is also increasingly limited.

Based on the cross tabulation in Appendix 10.6, it is known that of the 40 respondents after being given health education who had received information, a small portion of the respondents had good knowledge 10 (25%). Meanwhile, those who have never received information have good knowledge, almost half of respondents 15 (37.5%). This is because someone's knowledge will increase if someone gets information.

The theory put forward by Wawan and Dewi in 2010 above is one of the most important sources of information and knowledge about health.

From the results of the facts and theories above about education and sources of information, the researcher believes that a high level of education obtained will increase the information that is known. This is because a person's knowledge after being given health education will be better because his knowledge will increase and someone will understand something better.

### C. The effect of health education on the emergency treatment of cervical spine fractures in traffic accidents using the roleplay method before and after being given health education.

Based on the results of the comparative analysis in (Appendix 8) using the Wilcoxon statistical test (SPSS 16.0 For Windows) where the level of significance or = 0.05 obtained P-value = 0.000 so that P-value < value or 0.000 < 0.05, it can be concluded that H0 is rejected , H1 is accepted which means that there is an effect of health education on handling emergency spinacervical fractures in traffic accidents with the role play method on the knowledge of motorcycle club members at Sembung Tulungagung Basecamp 2018. Knowledge is the result of knowing and this occurs after people sense a certain object. [12]. Sensing occurs through the five human senses, namely the senses of sight, hearing, smell, taste, and touch. Most of human knowledge is obtained through the eyes and ears [7]. Knowledge or cognitive is a very important dominant for the formation of one's actions.

Knowledge is information or information that is known or realized by someone. In another sense, knowledge is a variety of symptoms encountered and obtained by humans through sensory observations. Knowledge arises when a person uses his senses or mind to recognize certain objects or events that have never been seen or felt before [7]. So it can be concluded that knowledge is the result of sensing or sensory observation of an object that has never been seen, heard, or felt before which is realized by a person using his senses or reason to recognize certain objects or events and knowledge is very important in shaping one's actions.

A person's knowledge can be obtained by various efforts, either intentionally or by chance. Deliberate efforts include various methods and concepts both through the educational process and through experience. Likewise, in this study, people in motorcycle clubs who do not experience or receive health education will of course result in a lack of knowledge about the right to handle cervical spine fractures in carrying out the role play method.

According to Muliadi (2007) in his research on the effect of health education on the treatment of emergency cervical fractures on knowledge at Wahidin Hospital, concluded that there was a significant effect on training participants. The researcher showed the effect of health education on the management of cervical spine fractures in traffic accidents using the roleplay method. This proves that the information obtained through the

provision of health education affects a person's knowledge that at first the respondent has a poor attitude, then after being given health education about handling the emergency of spinal fractures in traffic accidents with the role play method, it can affect the respondent's knowledge to be good. This means that the provision of health education will affect the knowledge of someone who was previously not good enough to become good.

#### IV. CONCLUSION

Based on the results of research conducted by researchers regarding "The effect of health education on handling emergency spinacervical fractures in traffic accidents using the roleplay method on the knowledge of motorcycle club members at Sembung Tulungagung Basecamp in 2018" on May 14, 2018 as follows :

1. Knowledge of motorcycle club members before being given health education about handling emergency spinacervical fractures in traffic accidents using the roleplay method from 40 respondents who had sufficient knowledge as many as 20 motorcycle club members (50%).
2. Knowledge of motorcycle club members after being given health education about handling emergency spinacervical fractures in traffic accidents using the roleplay method who have good knowledge as many as 25 motorcycle club members (62.5%).
3. Based on the Wilcoxon Signed Rank Test statistical test, p value = 0.000 where = 0.05 so that H0 is rejected Hi is accepted, so the results of the study can be concluded that there is an effect of health education on handling emergency spinacervical fractures in traffic accidents with the roleplay method on knowledge motorcycle club member at Sembung Tulungagung Basecamp in 2018.

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Thanks to Member Of The Club A Motor

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# Correlation of Repeat Cooking Oil Use to Increasing Cholesterol Levels in Community, Gandong Village, Bandung District, Tulungagung Regency in 2021

Surtini <sup>1</sup>, Zainatul Badriyah <sup>2</sup>

<sup>a</sup> Lecturer, Nursing, STIKes Hutama Abdi Husada, Tulungagung

<sup>b</sup> Bachelor, Nursing, STIKes Hutama Abdi Husada, Tulungagung

\*surtinis34@gmail.com

## AB STRAC T

*Keywords:*

Repeated cooking oil

cholesterol levels

**Background:** The use of recurrent cooking oil is very difficult to separate from people's lives, because food that is processed fried is much favored by the community. And if you use cooking oil repeatedly continuously can cause cholesterol levels to increase. The purpose of this study was to determine the relationship between the use of recurrent cooking oil to increase cholesterol levels in the community in Gandong Village, Bandung District, Tulungagung Regency in 2021.

**Methods:** This study uses an analytical research design with a cross sectional approach. The population is housewives in RT 02 and RT 03 / RW 02 in Gandong Village, Bandung District, Tulungagung Regency, in 2021 as many as 55 families using simple random sampling technique and obtained a sample of 35 respondents. Data was collected by observing the use of cooking oil and checking cholesterol levels and then processed by editing, coding, scoring, and tabulating, and using Pearson test with an error rate ( $\alpha$ ) of 0.05.

**Results:** The results of the study showed that 25 respondents (71.4%) used recurrent cooking oil. While respondents who had high cholesterol levels were 23 respondents (65.7%). There is a relationship between the use of recurrent cooking oil to increase cholesterol levels in the community in Gandong Village, Bandung District, Tulungagung Regency in 2021 with a value of  $p < 0.000$ .

**Conclusions:** Repeated cooking oil contains saturated fatty acids and free radicals which can increase cholesterol levels which can eventually cause constriction of blood vessels. For this reason, it is necessary to conduct health education or counseling on the dangers of using recurrent cooking oil.

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## I. INTRODUCTION

Cooking oil is very difficult to separate from people's lives, because fried foods are much loved by the community. Consumption of cooking oil in the community, especially in the elderly is quite high, fried foods tend to be preferred over boiled, because it tastes more savory and crunchy (1).

Consumption of fried foods using cooking oil used repeatedly is not safe for health because the repeated heating process using oil will produce harmful compounds, such as saturated fatty acids and free radicals (peroxides) that are believed to affect the metabolism of blood lipid profiles namely HDL cholesterol, LDL cholesterol and total cholesterol which then cause blockage in blood vessels or called atherosclerosis (2)

When the frying process takes place, cooking oil will enter the food and fill the empty spaces in the food so that the frying process contains 5-40% oil, thus the oil will be consumed and enter the body. However, many people do not know and use cooking oil many times.

About 35 percent of the Indonesian population has cholesterol levels higher than normal limits, because Indonesians are accustomed to unhealthy lifestyles such as eating fast food, repeated use of cooking oil that results in high cholesterol. Coronary heart events are more than 50% caused by hypercholeolemia. Hypercholeolemia is a disorder that occurs at levels of fat in the form of an increase in total blood cholesterol levels. Who estimates the incidence of berkatian

hypercholeolemia with more than 4 million deaths each year.

The results of the preliminary study of many housewives in Gandong Village, Kec. Bandung, Kab. Tulungagung who use cooking oil repeatedly more than three times in their daily lives and do not know the losses and dangers caused by the use of heated cooking oil over and over again. Of the 10 housewives, 8 housewives used cooking oil repeatedly and 2 housewives did not use oil. Fried repeated and out of 10 housewives obtained 7 housewives who have high cholesterol levels. They deliberately use the repeated cooking oil with the reason to downsize and there is a presumption if frying something with repeated cooking oil produced more savory. In the process of repeated use will leave high saturated fat, high saturated fatty acids can cause the formation of cholesterol.

Recurrent cooking oil contains free radicals and saturated fatty acids that are quite high. Therefore, repeated consumption of cooking oil that contains many saturated fatty acids and free radicals and other harmful substances will lead to various disorders such as endothelial dysfunction of blood vessels, deposition of fat in blood vessels or atherosclerosis, coronary heart disease, fatty liver, cancer, and others (3)

Damage to cooking oil occurs during frying with repeated use and high temperature, this will result in the accumulation of components that are not beneficial for health. In general the frying temperature is 177-221°C (4). While oil damage due to the frying process at high temperatures (200-250°C) which damages the double bonds in unsaturated fatty acids and the oil used to fry repeatedly, then unsaturated fatty acids will turn into saturated fatty acids / trans fatty acids. This risks making blood cholesterol higher.

Blood cholesterol levels are < 200 mg / dl, ≥ 200 mg / dl means the risk of heart disease increases. Riskesdas data in 2013 showed that the highest prevalence for cardiovascular disease in Indonesia was CHD, which was 1.5%. According to the age group, CHD is most common in the age group of 65-74 years (3.6%) followed by the age group 75 years and above (3.2%), the age group 55-64 years (2.1%) and the age group 35-44 years (1.3%).

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## **II. METHOD**

Research design is something that is very important in research, allowing maximum control of several factors that can affect the accuracy of an outcome (5). This study uses an analytic research design with a cross sectional approach that researchers conduct simultaneous steaming or observations at a certain period between free variables (between those who use cooking oil repeatedly and those who do not use cooking oil repeatedly) with bound variables (increased cholesterol levels) (6).

## **III. RESULTS AND DISCUSSION**

### **RESULTS**

#### **1. Use of cooking oil in RT 02 and RT 03/RW 02 Gandong Village Bandung District Tulungagung.**

Table 41 Distribution of the average frequency of cooking oil use in 7 days at RT 02 and RT 03/RW 02 Gandong Village, Bandung District, Tulungagung Regency

No	Use of cooking oil	Frequency	Percentage
1	1x use	0	0
2	2x use	10	28,6
3	≥ 3x use	25	71,4
	Sum	35	100

Based on table 1 it can be known that out of a total of 35 respondents who use cooking oil in one fry  $\geq 3x$  use amounted to 25 respondents (71.4%).

## 2. Cholesterol levels in RT 02 and RT 03/RW 02 Gandong Village Bandung District Tulungagung Regency.

Table 2 Distribution of frequency of cholesterol levels in RT 02 and RT 03/RW 02 Gandong Village Bandung District Tulungagung Regency.

No	Cholesterol levels	Frequency	Percentage
1	Usual	5	14,3
2	keep	7	20
3	High	23	65,7
	Sum	35	100

Based on table 2 it can be known that out of a total of 35 respondents there are 23 respondents (65.7%) who have high cholesterol.

## 3. Cross-tabulation of repeated cooking oil use relationships against increased cholesterol levels in the community in RT 02 and RT 03/RW 02 Gandong Village Bandung District Tulungagung

Tabel 3 Cross-tabulation of the relationship of repeated use of cooking oil against the increase in cholesterol levels in the community in RT 02 and RT 03/RW 02 Gandong Village, Bandung District, Tulungagung Regency

N o	Age	Cholesterol levels						Total	
		Usual		Keep		High			
		F	%	F	%	F	%	F	%
1	1x use	0	0	0	0	0	0	0	100
2	2x use	5	50	4	40	1	10	10	100
3	$\geq 3x$ use	0	0	3	12	22	88	25	100
	Total	5	14,3	7	20	23	65, 7	35	100
<i>Pearson Test</i>		<i>P Value = 0,000</i>				<i><math>\alpha = 0,05</math></i>			

From the results of the study in table 3 it can be known that out of 35 respondents, as many as 22 respondents (88%) have high cholesterol levels who use cooking oil  $\geq 3x$  use. The results of quantitative data analysis with Pearson statistical tests with the help of SPSS computers can be interpreted pearson statistical test results with a significant 0.05 resulting in a value of P Value = 0.000, so that it is smaller than the value of  $\alpha = 0.05$  ( $0.000 < 0.05$ ) where H0 is rejected and H1 is accepted, which means there is a relationship of repeated use of cooking oil to increase cholesterol levels in the community in RT 02 and RT 03/RW 02 Gandong Village Bandung District Tulungagung Regency in 2021.

Repeated use of cooking oil can be influenced by several predisposing factors, including education level and income level. Based on table 4.2 it can be known that out of a total of 35 respondents educated elementary school using

cooking oil  $\geq 3x$  use amounted to 11 respondents (78.6%). Education is any planned attempt to influence others, whether individuals, groups, or communities, so that they do what is expected by the educational (Notoatmodjo, 2012). The more a person obtains information or education the better the level of knowledge. Education makes a person driven to want to know, seek experience so that the information received will become knowledge.

The results of this study are in line with or similar to the theory above that the last education of respondents has an effect on the use of cooking oil repeatedly. Someone who is poorly educated they lack understanding about the use of cooking oil.

A low-educated person does not know the impact of using cooking oil too often. So they deliberately use used cooking oil with the reason to save money and there is a presumption if frying something with the resulting flavored oil is more savory. Because they do not understand about the impact caused by the repeated use of cooking oil.

## DISCUSSION

### A. Repeated use of cooking oil in RT 02 and RT 03/RW 02 Gandong Village Bandung District Tulungagung Regency.

Based on table 4.1 it can be known that out of a total of 35 respondents who use cooking oil in one frying  $\geq 3x$  use amounted to 25 respondents (71.4%).

The use of cooking oil in the community among housewives who have a tendency to spend by using it repeatedly that has a negative impact on health because the oil used repeatedly can potentially cause a buildup of free fat in the blood vessels that can cause narrowing of blood vessels that can trigger coronary heart disease (Amalia, 2010)

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### B. Cholesterol levels in RT 02 and RT 03/RW 02 Gandong Village, Bandung District, Tulungagung Regency

Berdasarkan tabel 4.3 dapat diketahui bahwa dari total 35 responden terdapat 23 responden (65,7%) yang memiliki kolesterol tinggi.

Cholesterol is a component of fats or lipids. Fat is one of the sources of energy

that provides the highest calories. In addition to being one of the sources of energy, actually fat or especially cholesterol is indeed a substance that is needed by our body and has an important role in human life (8).

Total cholesterol, LDL cholesterol, and HDL cholesterol levels are affected by exogenous and endogenous factors. Included in the exogenous factors are diet, lifestyle and physical activity, while endogenous factors include age, genetics and gender (8).

Based on table 4.4 it can be known that out of a total of 35 respondents, as many as 8 respondents (88.9%) aged 46-55 years have high cholesterol levels and 8 respondents (61.5%) aged 56-65 years also have high cholesterol levels. Age can affect cholesterol metabolism because with age there is a decrease in the physiological functions of the body's organs. This is in accordance with the opinion (9) that at an increasingly old age, total cholesterol is higher in levels.

The results of this study are in line with the theory above that respondents who have the most high cholesterol levels in the early elderly and the elderly end, which is due to frequent narrowing of blood vessels, one of which is caused by fried foods using repeated cooking oil. Because fried foods using cooking oil repeatedly contain saturated fatty acids that cause the deposition of fat in the blood vessels. Fat that settles cannot be digested properly, causing narrowing of blood vessels. So that fat that settles in blood vessels will cause cholesterol levels to rise. This suggests that age can affect a person's total cholesterol levels. In the elderly, total cholesterol levels are relatively higher than total cholesterol levels at a young age, this is because the older a person's LDL receptor activity is reduced

#### C. Cross-tabulation of repeated cooking oil use relationships against increasing cholesterol levels in the community in RT 02 and RT 03/RW 02 Gandong Village Bandung District Tulungagung Regency

Based on table 4.6 it can be known that of the 35 respondents, as many as 17 respondents (48.6%) have high cholesterol levels who use cooking oil  $\geq 3x$  use.

The results of quantitative data analysis with Pearson statistical tests with the help of SPSS computers can be interpreted pearson statistical test results with a significant 0.05 resulting in a value of P Value = 0.001, so that it is smaller than the value of  $\alpha = 0.05$  ( $0.001 < 0.05$ ) where  $H_0$  is rejected and  $H_1$  is accepted, which means there is a relationship of repeated cooking oil use to increase cholesterol levels in the community in RT 02 and RT 03/RW 02 Gandong Village Bandung District Tulungagung Regency.

Cholesterol is a component of fats or lipids. As we know, fat is one of the nutrients that are needed by our body in addition to other nutrients, such as carbohydrates, proteins, vitamins, and minerals. Fat is one of the sources of energy that provides the highest calories. In addition to being one of the sources of energy, actually fat or especially cholesterol is indeed a substance that is needed by our body and has an important role in human life (8).

According to a nutritionist and food safety expert IPB (Bogor Agricultural Institute), cooking oil should only be used as much as three times. When used many times, cooking oil will produce toxins that are harmful to the body. Generally after three uses, there will be a change in color and aroma in the oil that is not good when used. However, it should not be after 3 times used, if after 1 time used the oil has shown a dark color, thick, and rancid smell then the oil should not be used again.

In its use, if cooking oil is heated repeatedly at high temperatures (200-250 °C) it can cause damage to the oil or fat until it becomes unfit for use. Oil damage that occurs in the form of changes in chemical structure and discoloration, changes in levels of free fatty acids and peroxide numbers (10)

Therefore, repeated consumption of cooking oil that contains many saturated fatty acids and free radicals and other harmful substances will lead to various disorders such as endothelial dysfunction of blood vessels, deposition of fat in blood vessels or

atherosclerosis, coronary heart disease, fatty liver, cancer, and others (10).

From the results of research and theory above states that people often use cooking oil repeatedly, because people are more fond of fried foods because it tastes more savory. In addition to the taste is more savory, people consider using repeated cooking oil more economically. People who prefer to use cooking oil repeatedly do not know the negative impact that will occur. From the results of research many people who have high cholesterol levels, because of the frequent use of cooking oil repeatedly. Then saturated fatty acids and free radicals and other harmful substances contained in cooking oil repeatedly will cause the deposition of fat in the blood vessels causing high cholesterol levels. The results of this study showed that there is an association of repeated use of cooking oil with increased cholesterol levels.

#### IV. CONCLUSION

Based on the results of research that has been conducted on "The Relationship of Repeated Use of Cooking Oil Against Increased Cholesterol Levels in the Community in RT 02 and RT 03/RW 02 Gandong Village, Bandung District of Tulungagung Regency in 2021" in 35 respondents can be mentioned as follows:

1. The use of cooking oil in the community, especially in housewives in RT 02 and RT 03/RW 02 Gandong Village, Bandung District, Tulungagung Regency out of a total of 35 respondents who used repeated cooking oil as many as 25 respondents (71.4%).
2. Cholesterol levels in the community, especially in housewives in RT 02 and RT 03/RW 02 Gandong Village, Bandung District, Tulungagung Regency out of a total of 35 respondents who had high cholesterol levels as many as 23 respondents (65.7%).
3. Pearson statistical test results obtained a value of  $\rho = 0.000$  while the value of  $\alpha = 0.05$  because  $\rho < \alpha$  ( $0.000 < 0.05$ ) then  $H_0$  was rejected and  $H_1$  accepted. Then there is a relationship in the use of cooking oil repeatedly to increase cholesterol levels in the community in RT 02 and RT 03/RW 02 Gandong Village, Bandung District, Tulungagung Regency.

#### V. ACKNOWLEDGMENT

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# Complementary Therapy For Treatment of Post Traumatic Stress Disorder (PTSD) : A Literature Review

Fitrio Deviantony<sup>1</sup>, Ayunda Putri Rizanti<sup>1</sup>, Ilany Nadia Chandra<sup>1</sup>, Rahma Maratus<sup>1</sup>

<sup>1</sup>Mental Health Department, Faculty of Nursing, Universitas Jember, Jember, Indonesia

\*Corresponding Author E-mail: [fitrio.psik@unej.ac.id](mailto:fitrio.psik@unej.ac.id)

## ABSTRACT

*Keywords:*

*Complementary Therapy;  
PTSD Rehabilitation  
Alternative therapy*

**Background:** Post Traumatic Stress Disorder (PTSD) is a group of symptoms that occur when a person repeatedly relives a traumatic incident through recurring thoughts, nightmares, and flashbacks. There are various complementary therapy options for PTSD. Mind-body therapies, art, music, meditation, and yoga, have shown potential in treating PTSD symptoms. This study aims to find out what kinds of complementary therapies can be given to PTSD patients and how different effective types of therapeutic interventions are for PTSD patients.

**Methods:** This literature review focuses on complementary therapy and its effects for rehabilitation intervention in PTSD patients spiritual intervention by nurses with databases in the form PubMed, Willey, Proquest published in 2015-2020 using keywords: complementary therapy, post-traumatic stress disorder, PTSD. Articles obtained are analyzed descriptively

**Results:** The therapy Based on a review of the nine selected articles, it was discovered that complementary therapies such as yoga, art therapy, music therapy, Emotional Freedom Techniques (EFT), and others have positive effects on PTSD patients, such as improving concentration sleep, and hyperarousal. These complementary practices were also linked to positive psychological attitudes, vitality, good health, and relaxation

**Conclusions:** These findings suggest that complementary therapy can be an effective and convenient alternative treatment that, being used regularly, can improve participants' quality of life (QoL) and their mental and physical health.

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## I. INTRODUCTION

Post-Traumatic Stress Disorder (PTSD) is a severe mental health condition caused by horrific events outside the normal range of the usual human experience (1). The condition attacks a person after experiencing a traumatic event that can cause disruption to self-integrity, such as the individual experiencing excessive fear, anxiety, helplessness, and even potentially serious physical damage (2). A person with PTSD constantly relives traumatic events, through nightmares, repetitive thoughts, and flashbacks for at least 1 month or more(3).

World Health Organization (WHO) data recorded out of a total of 68,894 respondents, found 70.4% of respondents experienced lifelong trauma, PTSD symptoms lasted an average of six years, and the prevalence of PTSD in women was higher than men(4).Here are some of the causes of PTSD,

among others: Natural disasters that have a psychological impact in the form of trauma to the victims of disasters(5) ; sad accident for example women who have experienced stillbirth are seven times more likely to have symptoms of post-traumatic stress disorder (PTSD)(6) ; Military combat for example military veterans affected by trauma and injuries in the line of duty(7) ; Violence for example women who have been exposed to physical, psychological and/or sexual abuse frequently suffer from PTSD(8).

The following are the main characteristics of PTSD, according to the National Institute of Mental Health (2020): (1) symptoms of re-experience, such as feeling scared, having nightmares, or having thoughts about experiencing a trauma event again; (2) avoidance symptoms, such as avoiding or avoiding places, objects, events, thoughts, or feelings that trigger memories of the traumatic event; (3) Symptoms of reactivity, such as restlessness, easy surprise, difficulty sleeping, tenseness, and irritability; (4) Symptoms of cognition and mood, such as constant negative thinking, guilt, and difficulty concentrating. If not treated properly, PTSD symptoms can progress to depression and eventually suicide behavior (9) As a result, appropriate intervention is required

Complementary therapy is a type of holistic medicine that impacts an individual by uniting the mind, body, and soul (10). In recent years, alternative treatment for psychological and physical illnesses has advanced significantly (11). Several nonrandomized pilot studies have proven the feasibility and acceptability of supplementary treatment therapies for PTSD symptoms in recent years. Giving 150 minutes of online yoga interventions per week, for example, dramatically reduces depression and PTSD symptoms in women who have had a stillbirth (6). Other research conducted by (12) in TI-MBSR (Trauma-Informed Model of Mindfulness-Based Stress Reduction) intervention for women with a history of interpersonal violence, the results show statistically and clinically significant decreases in symptoms of PTSD and depression. A music therapy intervention also has an impact on patients suffering from PTSD; there was a significant difference in PTSD symptom severity between pre- and post-intervention (13)

The development of a complementary intervention between two therapies, i.e traditional therapy and modern therapy, that affect individuals in a variety of physical, psychological, and spiritual ways (10). Based on this, researchers conducted a literature review to determine the types of complementary therapies that can be administered to PTSD patients and the efficacy of therapeutic interventions for the management of PTSD patients.

## II. METHOD

### ***Search Strategy***

This literature search uses searching methods from journals or original research, databases in the form of PubMed, Willey, Proquest and Google Scholar that relates to Complementary therapy and its function for rehabilitation intervention in PTSD patients using keywords: PTSD, complementary, therapy, rehabilitation. There are inclusion and exclusion criteria in the literature used. The inclusion criteria used are: (1) Journals published in 2015-2020, (2) Journals in English and Indonesian (3) using kind of complementary intervention (4) show the physical and psychological outcomes, while the exclusion criteria used are: (1) using the conventional and pharmacological therapy (2) not focused on mental health in PTSD patient. The PICOS question (P =population, I = intervention, C = comparators, O = outcomes, S = study type) format was used for formulating the research question (Table 1).

### ***Study selection***

Revealed 805 studies in total, 94 manuscripts from the PubMed database, 335 manuscripts from the ProQuest database, 190 manuscripts from the science direct research database and 186 manuscripts from Wiley Journal. We screened the abstracts of the remaining 47 papers according to our inclusion

and exclusion criteria, and 9 papers were found to be eligible. After reading the full text of the papers, the authors agreed to conduct 11 papers for systematic review.

**Table 1. The PICOS Format of this study**

Criteria	Inclusion	Exclusion
Population	PTSD Patients	Non PTSD
Intervention	Various of Complementary Therapy	Conventional Rehabilitation
Comparation Outcomes	- Physical and Psychological effects on PTSD symptoms	Not focus at the effect of the intervention (in physical and psychological)
Study Design	Cohort studies, randomized control trials and crossectional studies	Non original research, systematic review
Publication Years	2015-2021	Before 2015
Language	English, Indonesian	Language other than English and Indonesian

### III. RESULTS AND DISCUSSION

Our last search in August 2021 revealed 805 studies in total, 94 manuscripts from the PubMed database, 335 manuscripts from the ProQuest database, 190 manuscripts from the science direct research database and 186 manuscripts from Wiley Journal. We screened the abstracts of the remaining 47 papers according to our inclusion and exclusion criteria, and 9 papers were found to be eligible. After reading the full text of the papers, the authors agreed to include 9 papers. The review included 9 studies carried out in the United States (7), Israel (1), Swedia (1) with collectively 579 participants at baseline. Of which, 5 studies were randomised control trial, two is pilot study, one mix method study and one case series. 9 studies included PTSD patients with varoious symptoms. The duration of the intervention was from 6 weeks to 20 week with varying intensity. The 9 included studies in this review had sample sizes ranging from 3 to 214 participants at an average (mean) age of > 18 years old

8 of the 9 studies showing that complementary therapy menyediakan berbagai jenis intervensi yang dapat dilakukan secara maniri oleh pasien PTSD. This intervention allows the ability to assess and overcome mobility limitations such as reduced. Compelementary therapy using music and art can be explained by the increased self-acceptance and ability to maintain and protect their own barriers, and by the fact that the participants learned new ways to regulate arousal by using music or doing art at home after the termination of treatment. The intervention led to decreased PTSD symptoms with large to very large effect sizes. It also resulted in favourable changes in symptoms of dissociation, anxiety and depression, and an improvement in quality of life. Several experimental studies in this study was discovered that complementary therapies such as yoga, Emotional Freedom Techniques (EFT), and others have positive effects on PTSD patients such as improving concentration, sleep, and hyperarousal. These complementary practices were also linked to positive psychological attitudes, vitality, good health, and relaxation.

**Table 2. A comparison of study design and structure of the research.**

Author	Study design	N	Participants Criteria	Intervention	Follow-up Duration (study duration)	Outcomes & Result
(14)	Participants were asked to compile lists of traumatic emotional events, and use EFT on each. Participants received six 1-hour sessions, one session per week.	21	Participants were 21 veterans who scored below the < 50 cutoff on the PCL-M.	Emotional Freedom Techniques (EFT).	6 months	EFT treatment has been associated with reductions in subclinical PTSD symptoms. EFT is a simple self-help technique that could aid in the development of resilience and protect against the subsequent development of PTSD.
(3)	Three military veterans with PTSD participated in a standardized 5-day course designed to teach them controlled rhythmic yogic breathing exercises.	3	The participants were all military veterans who either: (1) were referred by physicians or counselors at the VA or (2) signed up on their own through their local veterans' service locations.	During the training, participants will: (1) learn light stretching/yoga; (2) participate in group talks on self-care and self-empowerment; and (3) learn SKY—called Power Breath.	The course is a total of 15–18 hours. Each day's session lasts 3–4 hours.	Following the training, the subjects' concentration, sleep, and hyperarousal levels improved. These enhancements may have a positive impact on the participants' QoL as well as their mental and physical health.
(15)	The study was designed as a prospective, delayed-entry randomized pilot trial.	68	The study population consisted of veterans receiving routine care for PTSD symptoms at the Zablocki VA Medical Center in Milwaukee, WI. Eligible Veterans were those who (i) had at least one visit for mental health treatment in the prior six months with a primary diagnosis of PTSD (ICD9CM 309.81–83) and (ii) exhibited moderate to severe PTSD symptoms at the time of enrollment (Posttraumatic Stress Disorder Checklist $\geq 50$ )	music-instruction intervention	6-week intervention period.	Guitars for Vets is a safe and potentially effective intervention for improving PTSD and depressive symptoms in veterans with moderate to severe PTSD.
(16)	military veterans	214	Veterans of any combat or noncombat	mindfulness-based	eight weekly,	Both MBSR and PCGT appear to be

Author	Study design	N	Participants Criteria	Intervention	Follow-up Duration (study duration)	Outcomes & Result
	diagnosed as having PTSD were randomly assigned to receive eight weeks of either MBSR or present-centered group therapy (PCGT) at three clinical research sites in VA Medical Centers located in the southeastern United States.		era were included if they were able to provide informed consent; were 19 to 65 years of age (inclusive); had a diagnosis of PTSD; had a CAPS-IV score of \$45 for the week prior to randomization; had no substance use disorders (except nicotine and/or caffeine) for two weeks prior to randomization; had no diagnosis of bipolar I disorder, schizophrenia, or a schizo-affective disorder; and were not actively considering suicide or homicide.	stress reduction (MBSR)	90-minute sessions and a six-hour retreat prior to week 6.	effective in treating PTSD in veterans, with the MBSR group showing significant improvements in self-reported PTSD symptoms.
(8)	a mixed-method study in a Convergent Parallel design was applied (Creswell 2014). The pilot study recruited two therapy groups (ten participants, five in each group) to test the feasibility of trauma-focused GrpMI	10	participants should: (1) be suffering from PTSD/CPTSD, (2) be sufficiently stabilised to tolerate being exposed to trauma treatment and listen to other subjects' stories, (3) be able to speak good enough Swedish to express themselves without an interpreter, (4) have an interest in working with their problems using artistic languages, and (5) have an ability to work with symbolism and inner images.	trauma-focused Group Music and Imagery (GrpMI).	The group met weekly for 12 sessions of 2½ hours' duration.	The result shows there was a decrease in PTSD and dissociative symptoms, as well as an increase in quality of life. This pattern was maintained at the follow-up.
(17)	The objective of this study was to improve the results of a therapy regimen tested in a recent randomized controlled trial by making it shorter and not assigning or monitoring home practice.	9	Participants were aged between 25 and 55 years ( $M = 40.7$ years) and were primarily white ( $n = 5$ ), followed by black ( $n = 2$ ), Asian ( $n = 1$ ), and Latina ( $n = 1$ ). Participants also had to meet a PTSD diagnosis based on the Frequency $>1$ /Intensity $\pm 2$ (F1/I2), Total Severity $\pm 45$ (TSEV45),	trauma-sensitive yoga treatment	20-week	Participants experienced more significant reductions in PTSD severity, which include loss of diagnosis and attainment of asymptomatic status, as well as clinically massive reduction in dissociation symptoms.

Author	Study design	N	Participants Criteria	Intervention	Follow-up Duration (study duration)	Outcomes & Result
(18)	In this RCT, 51 participants (female = 11.8 percent, Mage = 47.76, SD = 13.77) were randomly allocated to one of two research conditions: the intervention (yoga group) or the assessment-only control condition.	51	The following were the eligibility criteria: 18 years of age or older; PTSD diagnosis (per Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders [DSM-IV-TR] Axis I Disorders, no more than one hour of current weekly mind-body practice; and physical and psychological capability to participate in the yoga intervention.	Kripalu Yoga Intervention which combines physical postures, breathing, and meditation, emphasizing moving meditation.	10 week, Twice weekly 90-minute group yoga sessions over 10 consecutive weeks	Participants in both the yoga and control groups reported reduced PTSD symptoms.
(19)	Twenty-six OEF/OIF combat veterans with PTSD who had recently returned from a combat zone were block randomized to receive eight sessions of MBSR or present-centered group therapy (PCGT).	26	Participants were male veterans aged 18–65 years returning from a combat deployment in Iraq or Afghanistan as part of OEF and OIF-OEF/OIF.	Participants were randomly assigned to either MBSR or PCGT treatment for 8 weeks (by an outside researcher). Through formal meditation and mindful hatha yoga movements, the 8-week, 9-session MBSR intervention provides systematic and intense mindfulness training.	8 weeks	In response to traumatic reminders, MBSR-treated patients had increased anterior cingulate and inferior parietal lobule function and decreased insula and precuneus function compared to the PCGT group.
(20)	This is a randomized controlled trial that compares Hatha yoga to a nonaerobic exercise control condition.	192	Veterans with PTSD or sub-syndromal PTSD accompanied by distress and impairment, aged 18 or older, who are able to consent and want to engage, will be eligible to enroll.	Participants will be randomly assigned to either hatha yoga or nonaerobic physical activity control groups	groups will participate in 12 weekly 60-minute group or online training sessions with 15–20 minutes of daily at-home practice.	Yoga increases discomfort tolerance, which improves coping and, as a result, reduces PTSD symptoms.

### ***PTSD caused diseases***

Posttraumatic stress disorder (PTSD) is a psychiatric disorder that can occur in individuals who have experienced or witnessed a traumatic tragedy such as natural disasters, serious events, terrorist attacks, wars, rape incidents, death threats, and sexual violence or serious injury. PTSD can appear in various individuals from various ethnicities, cultures, countries, and in various age ranges. PTSD is a disturbing condition followed by a traumatic event. Many of the symptoms of PTSD include hyperarousal, numbness, avoidance, overlap with other mental disorders such as anxiety disorders, panic, depression, severe trauma. PTSD is also a physical and emotional response to thinking about and remembering a traumatic event. Symptoms of PTSD are divided into three categories, namely reviving, avoidance, and increased arousal (brooks dan dunn,2015).Symptoms come back to life such as nightmares, flashbacks, and emotional reactions to traumatic. Emotional reactions include conditions that are easy to feel guilty, restless, anxious. Physical reactions include physical conditions such as palpitations, rapid pulse, uncontrollable shaking, chills, sweating, headaches, and tension (21).

Individuals who are psychologically depressed tend to engage in negative coping strategies that will eventually lead to PTSD, besides traumatic events causing people to experience more negative emotions tend to choose negative behaviors such as blaming themselves or avoiding problems. These actions can further weaken a person's ability to deal with psychological stress which will eventually lead to mental illnesses such as PTSD(22).The PTSD prognosis shows that people benefit from treatment even from the symptoms they experience for years. Patient choice and psychological availability will affect the treatment given(23).In terms of treatment, psychological and pharmacological interventions can relieve PTSD symptoms to different levels, but it is necessary to develop systemic treatments and therapeutic methods for specific symptom management.

### ***Benefits of Complementary therapy for PTSD***

Complementary Therapy (Complementary Therapy) is a type of alternative therapy as a modality that can affect the harmony of individuals from the biological-psychological-social-spiritual aspects. The use of Complementary Alternative Medicine (CAM) specifically for the management and treatment of overall mental health problems is increasing(3).There are various forms of complementary therapy, so it is called therapy that is holistic (whole), affects health, and positive behavior. Types of complementary therapy are invasive and non-invasive. Examples of invasive complementary therapies are acupuncture and wet cupping using needles for treatment, while non-invasive ones are biological therapies (herbs, nutrition, food combining, acupressure, reflection) energy therapy (reiki, qikung, prana, music therapy). The benefits of complementary therapy for PTSD from various physical, psychological, and spiritual aspects include:

#### ***a. Physical***

Complementary therapies to treat individuals with PTSD are widely used. Complementary therapy can modulate the body's response to stress through 3 different physiological systems, namely the autonomic system, the hypothalamic-pituitary-adrenal system, and the gamma-aminobutyric acid system. The use of complementary therapies to improve physical health performance falls into the categories of complementary herbal therapies, supplements or diets, and physical manipulations such as massage and yoga. Several studies have shown that yoga can improve sports performance and functional performance(24).

#### ***b. Psychologists***

PTSD is a chronic disorder that is difficult to eliminate and treat by pharmacological means alone. Complementary therapies are also relevant to psychologists and the care they provide in the context of evidence-based practice. Complementary therapies to treat PTSD psychologically rapidly and permanently reduce maladaptive fear responses to traumatic memories and cues that occur(14). Pada pasien dengan PTSD manfaat terapi komplementer dari segi psikis adalah dapat mengalami perubahan respon fungsional(16).The polyvagal theory states that the human nervous system consists of three branches, namely the sympathetic branch, the vagal parasympathetic branch, and the dorsal vagal parasympathetic branch. The vertical vagal complex is active when we are socially engaged and feel safe. The sympathetic branch stimulates mobilization to fight. The dorsal vagal complex helps shut off the system to use immobilization as a defense. Clients need help to

reduce dorsal vagal influence with feelings of helplessness and need help to release active defenses such as fighting and erasing traumatic memories. So that it can understand that what happened in the past and not now. To facilitate this process, complementary therapies, for example music, have the potential to create psychological self-reinforcement for PTSD patients(8) .

c. *Spiritual*

Based on the United States Religious Landscape survey, 56% of them say that religion is very important and 26% consider it unimportant. The power forum on religion & Public Life 2008 shows that the use of complementary therapies in terms of spiritual, religious, and prayer has been relied on by clients. Spirituality and religion are two separate things. Spirituality places more emphasis on personal and religion is more formally organized. Spirituality and religious practices can play a role in complementary therapeutic practices(25).

***Comparison Of Complementary and Conventional Therapies***

Evidence shows that treatment with evidence-based drugs is not necessarily beneficial for the patient and the costs involved. An RCT study conducted in the UK showed that patients with hypertension and type 2 diabetes mellitus were treated either according to physician guidelines or policies. There was no difference in blood pressure control between the two groups after one year(26).Complementary therapy focuses on the sick patient in all its complexities including physical, mental, spiritual, and social factors. These are interrelated and need to be addressed comprehensively at various levels. Complementary therapy aims to support and stimulate the potential of autoprotective and autosalutogenic most patients using complementary therapies will cooperate actively participate in patient care. The salutogenic approach is more complex than the pathogenic approach, in addition to health environmental, family, cultural and socioeconomic factors can be considered(27).Dengan demikian penerapan terapi komplementer sangat kompleks dan penerapan sangat individual.

**IV. CONCLUSION**

Complementary therapy for PTSD patients is considered effective and feasible to be used and applied as a supporter of conventional therapy. Complementary therapies such as music therapy, Emotional Freedom Techniques, yoga, and Maidfulness-Based Stress Reduction (MBSR) have benefits for PTSD therapy. Complementary therapy in terms of physical, psychological, and spiritual, has the potential therapies in the future to continue to be developed.

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# The Relationship of The Absence of a Spouse with The Level of Stress in The Elderly at The Tresna Social Service UPT Werdha Blitar in Tulungagung

\*Suharyoto<sup>1</sup>, Avinda Yunikasari<sup>2</sup> Nurhidayati<sup>3</sup> Yitno<sup>4</sup>

<sup>a</sup> Lecturer, Nursing, STIKes Hutama Abdi Husada, Tulungagung

<sup>b</sup> Bachelor, Nursing, STIKes Hutama Abdi Husada, Tulungagung

[suharyoto@stkestulungagung.ac.id](mailto:suharyoto@stkestulungagung.ac.id)

## ABSTRACT

**Keywords:**  
Absence of Life Spouse,  
Stress Level,  
Elderly

**Background:** The life of the elderly who do not have a life partner will influence socialactivities and the lifestyle of the elderly. Elderly people who are not ready to face old age without a life partner will not feel the satisfaction and meaning of life as expected. The purpose of the study was the relationship between the absence of spouses with stresslevels in the elderly in the UPT of the Social Services of Tresna Werdha Blitar in Tulungagung in 2020. The study was conducted on 17-29 June 2020. Research correlational analytic method with cross sectional approach

**Methods:** The study population was all elderly in the UPT of the Social Services of Tresna Werdha Blitar in Tulungagung in 2018 with a total of 80 people. Samples were taken with a purposive sampling technique of 62 respondents. The independent variableis the absence of a spouse, the dependent variable is the stress level of the elderly. Processing data using the Spearman Rho test with the SPSS program

**Results:** The results of statistical tests obtained P Value = 0,000 <0,05 so that H1 was accepted, meaning that there was a relationship between the absence of a spouse with stress levels in the elderly at the UPT of the Social Service of Tresna Werdha Blitar in Tulungagung in 2020

**Conclusions:** Elderly people who have just left their life partners and live in nursing homes will experience stress. This condition is due to the presence of the elderly in adapting to the new environment, where the elderly usually live with a partner and nowhave to live in a nursing home.

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## I. INTRODUCTION

The elderly (elderly) have needs and problems that vary from healthy to sick and from adaptive to maladaptive conditions [1]. Elderly who do not achieve self-integrity will feel hopeless where the behavior of the elderly is in the form of looking down on / insulting / criticizing others, feels that his life has been meaningless, feels lost, still wants to do a lot, but is afraid of not having time [2]. One of the changes in the elderly that can affect the social welfare of the elderly in their old age is the existence of a life partner. Life partners have a function as a supporter in various ways, such as emotions, problem solving, finances, and parenting [3].

The loss of a spouse is one of the biggest emotional challenges that the elderly may face. Adjusting to the death of a spouse or divorce is very difficult for both men and women in old age, because at this time all adjustments are difficult [4]. Widows and widowers are more prone to depression or stress than geriatric patients with married status [5].

The life of the elderly who do not have a life partner will affect the social activities and lifestyle of the elderly. Elderly who are not ready to face old age without a life partner will not feel the satisfaction and meaning of life as expected, even many of them feel unhappy, depressed, stressed or lonely [6].

The prevalence of the elderly in Indonesia is always increasing every year. According to data from the Ministry of People's Welfare, the elderly population in Indonesia is the fourth largest in the world after China, India and America. In 2015 the total population of Indonesia was 255.5 million with the number of elderly people being approximately 8.6% of the total population, with a life expectancy of 66 years where the data increased from 5% in 2014 [7]. Meanwhile, the elderly population in East Java in 2014 had a population of around 38 million with an 11.3% increase compared to 2012 which was 8.54% [8]. Data in Tulungagung Regency in 2015 had a population of 1,021,190 people with a total of 144,164 elderly people (14.1%) [9].

An elderly person experiences many changes, even at this stage it is characterized as a decline stage because at this stage, a person experiences a setback both physically and mentally, so that it brings difficult and unique problems for someone who is not ready to face it. Elderly can experience psychological problems such as feelings of worthlessness, changes in lifestyle, a tendency to think and feel that they are no longer needed, feel sad and lonely because of the loss of a life partner and peers [4].

The elderly experience loneliness caused by breaking up with the closest and dearest people, and post power syndrome, this is often experienced by the elderly who have just retired, lost strength, income and happiness. These conditions can cause stress in the elderly [10].

According to Indriana (2010) stress in general is feeling depressed, anxious and tense. The level of stress in the elderly also means the level of pressure felt or experienced by the elderly as a result of the stressors experienced by the elderly [11]. Stress can have an impact on emotional conditions so that a person will be easily agitated, moods or moods that often change, easy / quick to anger, irritability and prolonged stress can cause a person to become anxious and depressed [12].

The solution to avoid the negative impact of stress, it is necessary to have a good stress management. Stress therapy can be done with pharmacological and non-pharmacological. Pharmacologically by administering drugs according to a doctor's prescription. Meanwhile, the non-pharmacological ones are cognitive therapy, music therapy, spiritual therapy, deep breathing relaxation therapy and reminiscence therapy [13].

Based on the description above, the researcher is interested in conducting a study entitled "The relationship between the absence of a spouse and stress levels in the elderly at the Tresna Werdha Blitar Social Service UPT in Tulungagung in 2020"

## II. METHOD

Research design is the most important thing in research, which allows maximizing control of several factors that can affect the accuracy of a result [14]. Correlational analytic research design aims to determine the relationship between variables in a situation or group of subjects. This is done to see the relationship between one variable and another [15].

The research design used in this study was correlational analytic with a cross sectional approach where each research subject was only observed once and measurements were made on the subject variables at the time of examination. This does not mean that all research subjects are observed at the same time [16].

### III. RESULTS AND DISCUSSION

#### 1. The absence of an elderly spouse at the Tresna Werdha Blitar Social Service UPT in Tulungagung

Tabel 1. Frequency distribution of the absence of an elderly spouse at the Tresna Werdha Blitar Social Service Unit in Tulungagung for the period 17-29 June 2020

No	Absence of anElderly Spouse	Life	Frequency	Percentage
1	7-10		1	1,6
2	4-6		8	12,9
3	1-3		53	85,5
	Total		62	100

(Source: Data processed in 2020)

Based on table 1, it can be interpreted that from a total of 62 respondents, almost all of the respondents stated the absence of their life partner for 1-3 years, namely 53 respondents (85.5%), a small number of respondents stated the absence of their life partner for 4-6 years, namely 8 respondents (12.9%) and a small number of respondents stated that the absence of their life partner for 7-10 years was 1 respondent (1.6%).

#### 2. Stress levels in the elderly at the Tresna Werdha Blitar Social Service UPT in Tulungagung

Table 2 Distribution of the frequency of stress levels in the elderly at the Tresna Werdha Blitar Social Service Unit in Tulungagung for the period 17-29 June 2020

No	Stress level	Frequency	Percentage
1	Normal	1	1,6
2	Light	20	32,2
3	Currenly	28	45,2
4	Critical	13	21
5	Awfully	0	0
	Total	62	100

(Source: Data processed in 2020)

Based on table 2 it can be interpreted that from a total of 62 respondents, almost half of the respondents experienced moderate stress, namely 28 people (45.2%), almost half of the respondents experienced mild stress, namely as many as 20 people (32.2%), a small portion of the respondents experienced severe stress, as many as 13 people (21%) and a small proportion of respondents did not experience moderate stress, as many as 1 person (1.6%).

### 3. The relationship between the absence of a spouse and the level of stress in the elderly at the TresnaWerdha Blitar Social Service UPT in Tulungagung

Table 3 Frequency distribution of the relationship between the absence of a spouse and stress levels in the elderly at the Tresna Werdha Blitar Social Service Unit in Tulungagung for the period 17-29 June 2020

No	Absence of an Elderly Life Spouse	Stress level								Total	
		Normal	Mild	Moderate	Severe	F	%	F	%		
1	7-10	1	1.6	0	0	0	0	0	0	1	1.6
2	4-6	0	0	8	12.9	0	0	0	0	8	12.9
3	1-3	0	0	12	19.4	28	45.2	13	21	53	85.5
	Total	1	1.6	20	32.3	28	45.2	13	21	62	100
Spearman Rho		P value = 0,000				$\alpha = 0,05$					

The results of the study in table 3 can be interpreted that from a total of 62 respondents, almost half of the respondents stated the absence of their life partner for 1-3 years and experienced moderate stress, namely 28 (45.2%) and a small proportion of respondents stated the absence of their life partner for 4 years. -6 years old and experienced a mild level of stress, which was 8 (12.9%).

The results of quantitative data analysis with the Spearman Rho statistical test with the help of the SPSS computer program can be interpreted the results of the Rho sperm statistical test with a significance of 0.05 resulting in a P Value = 0.000 which is smaller than the value = 0.05 ( $0.000 < 0.05$ ) so that  $H_0$  rejected and  $H_1$  accepted, which means that there is a relationship between the absence of a spouse and stress levels in the elderly at the Tresna Werdha Blitar Social Service UPT in Tulungagung in 202

## DISCUSSION

### A. The absence of an elderly spouse at the Tresna Werdha Blitar Social Service UPT in Tulungagung

Based on table 1, it can be interpreted that from a total of 62 respondents, almost all of the respondents stated the absence of their life partner for 1-3 years, namely 53 respondents (85.5%), a small number of respondents stated the absence of their life partner for 4-6 years, namely 8 respondents. (12.9%) and a small proportion of respondents stated that the absence of their life partner for 7-10 years was 1 respondent (1.6%). The event of the loss of a life partner can occur at any time, it can occur when a person is still in the stage of adulthood or old age. The loss of a spouse can be caused by divorce or death, but in the elderly, the loss of a spouse is mostly due to death [4][17]. The elderly make adjustments to the changes they experience, one of

which is adjusting to the loss of a life partner. Efforts to adjust to the elderly include conscious acceptance of the individual to the environment, both physically, psychologically, and socially according to

the conditions they have and require attention and understanding from their environment [18]

The results showed that most of the respondents experienced the absence of a spouse due to living in a nursing home for 1-3 years. The time was relatively short or had just lived in a nursing home. The elderly who have just experienced the absence of their life partner will experience a new adaptation to their existence. In men, they feel lonely along with reduced activities and feel not ready to live alone and manage their lives which they usually do with their wives. Men in terms of finances or anything related to the economy are more adaptable than women because they are used to working and earning their own income or if they have a pension. Meanwhile, women feel lonely when they no longer have a life partner, they will experience a lack of income. Women, live with their partners and depend a lot on their husband's income, so they experience problems in terms of the economy when they don't have a husband, although there are also those who can live independently because they have jobs.

## B. Stress levels in the elderly at the Tresna Werdha Blitar Social Service UPT in Tulungagung

Based on table 2, it can be interpreted that from a total of 62 respondents, almost half of the respondents experienced moderate stress, namely as many as 28 people (45.2%), almost half of the respondents experienced mild stress, namely as many as 20 people (32.2%), a small portion of the respondents experienced severe stress, as many as 13 people (21%) and a small proportion of respondents did not experience moderate stress, as many as 1 person (1.6%).

Stress is the body's reaction/response to psychosocial stressors (mental stresses/life burdens). Stress today is used interchangeably to describe various stimuli with excessive intensity that are not liked in the form of physiological, behavioral, and subjective responses to stress; the context that bridges the encounter between the individual and the stressful stimulus; all as a system [19].

Respondents who experience stress means that there are symptoms of stress that exist in the respondent. The number of respondents who experience stress shows that many elderly people who do not have a life partner experience stress. This can happen because the elderly, who usually live with their life partners, begin to adapt to their solitude due to the absence of a life partner. According to Gunawati, Hartati, and Listiara (2006) a person's relationship with his social environment includes social support received from parents, friends, and lecturers. Social support affects a person's motivation in his environment and social support can also reduce individual stress that occurs in a person [20].

According to the researcher, according to the theory above, respondents who experience the absence of a life partner and adapt to their new environment will tend to experience stress. An adaptation process is needed for the elderly to accept their situation and be in a new environment.

## C. The relationship between the absence of a spouse and the level of stress in the elderly at the Tresna Werdha Blitar Social Service UPT in Tulungagung

The results of the study in table 3 can be interpreted that from a total of 62 respondents, almost half of the respondents stated the absence of their life partner for 1-3 years and experienced moderate stress, namely 28 (45.2%) and a small number of respondents stated the absence of their life partner for 4 years. - 6 years old and experienced a mild level of stress,

which was 8 (12.9%).

The results of quantitative data analysis with the Spearman Rho statistical test with the help of the SPSS computer program can be interpreted the results of the Rho Spearman statistical test with a significant 0.05 resulting in a P Value = 0.000 which is smaller than the value = 0.05 ( $0.000 < 0.05$ ) so that H<sub>0</sub> rejected and H<sub>1</sub> accepted, which means that there is a relationship between the absence of a spouse and stress levels in the elderly at the Tresna Werdha Blitar Social Service UPT in Tulungagung in 2020.

The elderly make adjustments to the changes they experience, one of which is adjusting to the loss of a life partner. Efforts to adjust to the elderly include conscious acceptance of the individual to the environment, both physically, psychologically, and socially according to the conditions they have and require attention and understanding from their environment [18] because negative things can happen to the elderly. , among others: being very sensitive and demanding on the people around him. It is different with the elderly who have maturity as individuals. Mature elderly can experience new vitality, new hope, and new attention, which allows the elderly to accept and understand reality more clearly and wisely [21]. The ability and type of adjustment to the loss of a life partner in the elderly is influenced by several factors. These factors are gender and economic conditions, the length of time a partner has left, and the environment in which they live.

The length of time left by a spouse is a factor that influences adjustment to the loss of a life partner, especially those who are very loved because they will leave grief. The phase of grief according to Averill

[22] is shock, despair, and recovery. The first phase, shocked, the person left behind will feel shocked, distrustful, and emotionally paralyzed, and refuse, so that it will make him cry often, or even easily get angry and offended. This phase usually occurs 1-3 days after the death of a loved one. The second phase, despair, is characterized by prolonged feelings of pain over death, fond memories, sadness, restlessness, insomnia, and irritability. This despair phase can last only a few weeks, but some experience 1-2 years after death. The third phase, recovery, usually occurs 1 year after death. The recovery phase is accompanied by acceptance and increased activity again so that as time goes on, it is hoped that someone who has lost a partner can readjust himself.

The environment in which the elderly live is very diverse. The elderly can live in their own home, or live with their family so that someone will supervise and fulfill their needs because the elderly really need attention and support from their family as the closest dependent. A good relationship among all family members is a great happiness for the elderly. The elderly can also choose to live in a tresna wreda social institution for certain reasons [23].

According to the researcher, the facts and theories are appropriate that the elderly who have just left their spouse and live in a nursing home will experience stress. This condition is due to the presence of the elderly in adapting to a new environment, where usually the elderly live with their partners and now have to live in nursing homes. In addition, the socio-economic support for the elderly is different or disconnected from before. However, over time, the stress level experienced by the elderly will decrease due to the adaptation and habituation that the elderly have done in dealing with the new situation.

#### IV. CONCLUSION

Based on data obtained from research conducted at the Tresna Werdha Blitar Social Services UPT in Tulungagung for the period 17-29 June 2020 the following conclusions can be drawn:

1. The absence of an elderly spouse at the Tresna Werdha Blitar Social Service UPT in Tulungagung almost all of the respondents stated the absence of their life partner for 1-3 years, as many as 53 respondents (85.5%).
2. The level of stress in the elderly at the Tresna Werdha Blitar Social Services UPT in Tulungagung, almost half of the respondents experienced moderate stress, as many as 28 people (45.2%).
3. There is a relationship between the absence of a life partner and stress levels in the elderly at the Tresna Werdha Blitar Social Service UPT in Tulungagung in 2020 where the results of the rho spermttest statistic with a significance of 0.05 resulted in a P Value = 0.000 which is smaller than the valueof = 0.05 ( 0.000 < 0.05)

## V. ACKNOWLEDGMENT

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# Impact Of Work Posture On Musculoskeletal Disorder In Nurses

Kushariyadi<sup>a,1,\*</sup>, Mulia Hakam<sup>b,2</sup>, Norma Nabilah<sup>c,3</sup>

<sup>a</sup> Faculty of Nursing Universitas Jember, Kalimantan St. 37, Jember 68121, Indonesia

<sup>b</sup> Faculty of Nursing Universitas Jember, Kalimantan St. 37, Jember 68121, Indonesia

<sup>c</sup> Faculty of Nursing Universitas Jember, Kalimantan St. 37, Jember 68121, Indonesia)

<sup>1</sup> kushariyadi@unej.ac.id\*; <sup>2</sup> muliahakam81@gmail.com;

\* Corresponding Author

## ABSTRACT

*Keywords:*

Musculoskeletal disorders  
Work posture

The problem of nurses in hospitalization is complaining of back pain, and stiff neck. Often nurses experience pain so that work productivity is not optimal. Ergonomics or posture errors at work cause health problems such as low back pain. During the process of providing nursing care, nurses often use non-ergonomic and constant body postures such as bending, lifting patients, moving patients, installing catheters, installing infusions and other independent actions and collaboration for a long time so that there is a risk of low back pain or back pain. The purpose of the study was to determine the impact of work posture on musculoskeletal disorders in nurses. The research design used in this study is an association research using a cross sectional approach. The research sample was 30 nurses at Jember Lung Hospital. The sampling technique uses total sampling. Using the Nordic Body Map questionnaire and the RULA (rapid upper limb assessment) method. The analysis test used Spearman rank correlation with  $p < 0.000$ . The results showed that the work posture for musculoskeletal disorders showed  $r$  value of 1.000 and  $p$  value of 0.000. That there is a very strong relationship between work posture and musculoskeletal disorders. Imperfect posture in nurses causes musculoskeletal complaints in the mild category. At work postures with medium and high categories, improvements are needed so as not to cause bigger complaints.

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## I. INTRODUCTION

The problem of nurses in hospitalization is complaining of back pain, and stiff neck. Often nurses experience pain so that work productivity is not optimal [1]. Ergonomics or posture errors at work cause health problems such as low back pain. During the process of providing nursing care, nurses often use non-ergonomic and constant body postures such as bending, lifting patients, moving patients, installing catheters, installing infusions and other independent actions and collaboration for a long time so that there is a risk of low back pain or back pain [2].

## II. METHOD

The purpose of the study was to determine the impact of work posture on musculoskeletal disorders in nurses. The research design used in this study is an association research using a cross sectional approach. The research sample was 30 nurses at Jember Lung Hospital. The sampling

technique uses total sampling. Using the Nordic Body Map questionnaire and the RULA (rapid upper limb assessment) method. The analysis test used Spearmen rank correlation with  $p < 0.000$ .

### III. RESULTS AND DISCUSSION

#### RESULTS

##### Characteristics

Table 1. Characteristics of Respondents

Characteristics	f	%
<b>Gender</b>		
a. Male	12	40
b. Female	18	60
<b>Workspace</b>		
a. Dahlia	8	26.7
b. Mawar	8	26.7
c. Melati	9	30
d. Tulip	5	16.7
<b>Work Position</b>		
a. PPL	26	86.7
b. KR	4	13.3
<b>Health Condition</b>		
a. Healthy	30	100
b. Sick	0	0
<b>Trauma history</b>		
a. None	30	100
b. Yes	0	0

Table 1 shows that the majority of nurses are 18 women (60%). Most of the nurse's workspace is in the jasmine room (non-infectious) as many as 9 people (30%). Most of the nurses' work positions (PPL) were 26 people (86.7%). The health conditions and history of trauma to the nurses were all healthy and there was no history of trauma, each of which was 30 people (100%).

#### Musculoskeletal Disorders (MSDs)

Table 2. Musculoskeletal Disorders (MSDs)

Musculoskeletal Disorders (MSDs)	f	%
<b>Complaint rate:</b>		
None	0	0
Low	30	100
Medium	0	0
High	0	0
<b>Interpretation of complaint level:</b>		
No improvement	0	0
Not yet need improvement	30	100
Maybe need improvement	0	0
Needed immediate improvement	0	0

Table 2 shows that all nurses have complaints of low category MSDs as many as 30 people (100%). The interpretation of the MSDs complaint level for all nurses is that 30 people (100%) do not need improvement.

## Work Posture

Table 3. Work Posture Working

Posture	f	%
<b>Observation level of work posture:</b>		
Low	1	3.3
Medium	25	83.3
High	4	13.3
Very high	0	0
<b>Interpretation of work posture level:</b>		
No need for change	1	3.3
May need change	25	83.3
Needs change Immediate	4	13.3
Implementation of change	0	0

Table 3 shows that most nurses have a moderate level of observation of working posture as many as 25 people (83.3%). The interpretation of the level of observation of nurses' work postures is that most of them may need to change as many as 25 people (83.3%).

## Test Spearman with Musculoskeletal Disorder Working Posture

Table 4. Test Spearman Working Posture with Musculoskeletal Disorder

Spearman's rho	Working Posture	Musculoskeletal Disorder
<b>Posture Working</b>		
a. Correlation coefficient	1.000	0.000
b. Sig. (2-tailed)	0.000	0.000
c. N	30	30
<b>Musculoskeletal Disorder</b>		
a. Correlation coefficient	0.000	0.000
b. Sig. (2-tailed)	0.000	0.000
c. N	30	30

Table 4 shows that the results of the test have *Spearman* a correlation coefficient of 1.000 and value of p 0.000. The conclusion is that there is a very strong relationship between work posture and musculoskeletal disorders.

## DISCUSSION

### Musculoskeletal Disorders (MSDs)

The results of the study stated that respondents had MSDs complaints of (100%) in the low category. The low category means that the respondent states that he feels MSDs at work but does not interfere with his activities and when he rests, it will disappear. The results of the study found that many nurses felt complaints in the neck and right shoulder. Complaints are caused by posture errors, tool errors, and other ergonomic errors. Many nurses work with the back and neck bent for a long time, causing discomfort such as tension in the lower and upper neck muscles due to continuous static movements for a long time and frequent intensity [1].

Complaints on the right shoulder arise because the right hand is more dominant in carrying out work such as carrying loads, performing nursing care, documenting nursing care, and other activities. Muscle fatigue while working causes MSDs complaints [2].

The results of the study on MSDs complaints often occur in the waist area (62.71%), neck (59.77%), arms (49.66%), back (39.50%) [3]. The results of research in Africa show that the

average nurse experiences MSDs complaints of 71.85% [4]. The results of research on nurses in Vietnam, the level of MSDs complaints increased in the last 12 months by 74.7% and in the last 7 days by 41.1% [5].

Musculoskeletal complaints are complaints in the skeletal muscles ranging from mild to severe complaints. Muscle complaints include temporary complaints that occur when the muscles receive a static load and disappear by themselves when resting. Persistent complaints occur when the load has stopped and the muscles have rested [5].

### Work Posture

Results showed that the error rate that often occurs is on the back, upper and lower arms and legs. This study focuses on working postures on body parts while working such as neck, upper arm position, forearm, wrist, wrist rotation, back, foot position and loading. Jember Lung Hospital nurses have a posture error rate when working with a low category of 1 person (3.3%), moderate as many as 25 people (83.3%), and high as many as 4 people (13.3%). This means that there is an error in body posture while working and is in the medium and high categories so that it requires changes to the medium category and immediate changes to the high category.

Measurement of posture errors when sitting is 3.33%, while standing is 3.32% and when lifting weights is 0%, because the load is less than 2 kg, it gets a score of 0. sitting and standing, such as bending over when sitting and standing. This position occurs when nurses carry out nursing care writing activities and provide nursing interventions to patients. Nurses in carrying out activities with a bent back position and an unergonomic forearm position can cause complaints of pain in the back, neck, and wrists. Errors in the standing position occur because the body position is standing and bending, making one leg as a support for body weight (slanted standing position) causing complaints of back, neck, and leg pain.

The results of this study indicate body posture, namely upper arms, forearms, wrists, neck, back, legs and daily loading by measuring the level of RULA which aims to analyze body posture while working as a whole. Based on the results of research in Africa that the focus in body posture while working is the back, neck, and arms because the body parts that are mostly used when working or doing activities are the back, neck, and arms [4]. The results of a study in Haiphong Vietnam showed that the focus in body posture while working was the back and neck. The body postures studied have the same focus on posture [5].

Posture is a component in the work system that is included in the design area subsystem, namely the physical characteristics of fatigue whose components come from the operator. The position of the body at work is largely determined by the type of work performed such as sitting, standing, or bending. Each body posture has advantages and disadvantages, so to minimize the risk to workers, it is necessary to focus on the use of tools by workers for comfort while working. One that can be applied is user centered product design, namely workers. So it does not cause position errors when working. At a high level of complaints, the wrong body posture is the body that is too bent when sitting or standing. There are 4 assessment indicators for the slouching position in the standing position, namely 0°, 0-20°, 20-60° and more than 60°. In the high category, it was found that there were nurses who scored more than 20° but less than 60°. In addition, the position of the neck also affects because when writing nursing care, the position of the head is lowered 20°. In addition, elderly nurses can also be included in the high category because in the elderly the habit of wrong posture has been carried out for years with frequent repetitions [5].

### Musculoskeletal Disorders (MSDs) with Work Posture

Results of this study indicate that there is a very strong relationship between musculoskeletal disorders and work postures with the results of the test r- 1.000 and p-value 0.000. These results indicate that many Lung Hospital nurses experience posture errors while working in the medium and high level categories and a few have working posture errors in the low level category. There is no perfect attitude that is implemented by nurses, causing musculoskeletal complaints even though it is in the mild category and there is no need for improvement. However, the wrong work posture such as working posture in the medium and high categories requires improvement so as not to cause more severe complaints.

The results of this study indicate a positive correlation, namely there is a strong relationship between work posture and MSDs complaints, meaning that if there is a high work posture error, the higher the perceived MSDs complaints will be.

The results of a study in Iran stated that there was a significant relationship between the angle of curvature and rotation with neck and back pain. This study aims to determine the relationship between sitting posture and complaints of musculoskeletal pain in elementary school children. The results of another study stated that there was a significant positive correlation on the post-test between the physical energy demands of other musculoskeletal demands and the intensity of pain [6].

Various complaints of MSDs themselves can come from various factors. Factors that are closely related to this complaint are unnatural work postures, such as unnatural work attitudes which mean wrong work attitudes and cause the body to move away from its natural position. Such as the movement of the hands raised, the back and neck that are too bent, the head is lifted, the farther the position of the body from the position of the body's gravity, the greater the risk of MSDs complaints. The cause of unnatural posture comes from individuals and work tools that are not in accordance with the ability of workers [5].

#### IV. CONCLUSION

The nurse experienced a moderate category of work posture error. The nurse has a low-grade musculoskeletal disorder. There is a relationship between work posture and complaints of musculoskeletal disorders where the p value <0.000 then H0 is accepted where the r value is 1.000 which indicates the relationship between the two variables is very strong.

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# Swedish Foot Massage Therapy For The Treatment Of Blood Pressure And Pulse Rate In Hypertension

Mulia Hakam<sup>a,1,\*</sup>, Kushariyadi<sup>b,2</sup>, Riska Indah Permatasari<sup>c,3</sup>

<sup>a</sup> Faculty of Nursing Universitas Jember, Kalimantan St. 37, Jember 68121, Indonesia

<sup>b</sup> Faculty of Nursing Universitas Jember, Kalimantan St. 37, Jember 68121, Indonesia

<sup>c</sup> Faculty of Nursing Universitas Jember, Kalimantan St. 37, Jember 68121, Indonesia

<sup>1</sup> muliahakam81@gmail.com\*, <sup>2</sup> kushariyadi@unej.ac.id; <sup>3</sup> riskaindahpermatasari@gmail.com

\* Corresponding Author

## ABSTRACT

**Keywords:**

Blood pressure,  
Hypertension,  
Pulse,  
Swedish foot  
massage therapy

Hypertension or high blood pressure is referred to as the silent killer because the symptoms that appear are often without complaints. If hypertension is not treated properly, there is a risk of cardiovascular diseases such as myocardial infarction, stroke and complications. The management of hypertension using Swedish foot massage for the treatment of blood pressure and pulse has never been done. The purpose of the study was to determine the use of Swedish foot massage for the treatment of blood pressure and pulse in hypertensive patients. The study used a quasi-experimental design with a two-group pre-post test design. The research sample was 10 people with hypertension at Baladhika Husada Hospital, Jember. The measuring instrument used a sphygmomanometer, stopwatch, stethoscope, blood pressure and pulse observation sheet, at 5 minutes before the intervention was given and 5 minutes after the intervention was given. Each respondent will be given an intervention with a duration of 15-20 minutes for 3 consecutive days. The analysis test used Wilcoxon sign rank test with p value < 0.000, and T-test dependent with p value < 0.000. The results of the Wilcoxon sign rank test in the intervention group (pretest and posttest) showed a p value = 0.008. The results of the T-test dependent on the intervention group (pretest and posttest) showed the value of p = 0.001. The difference in the decrease in blood pressure and pulse in the pretest and posttest is caused by the effect of massage therapy which has a relaxing effect and can reduce pain and provide a relaxing effect because it stimulates an increase in the production of endorphins.

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## I. INTRODUCTION

Hypertension or high blood pressure is often referred to a silent killer or a hidden killer, symptoms that appear without complaints [1]. Hypertension is considered a chronic medical problem and also a challenging condition [2]. Hypertension if not treated properly can be a major risk factor for cardiovascular diseases such as myocardial infarction (heart attack), stroke and complications [3]. Cardiovascular disease is one of the non-communicable diseases that causes the number one death in the world, namely 17.9 million deaths [4]. Non-pharmacological management of hypertension can be done by maintaining ideal body weight, low salt diet, smoking cessation, alcohol restriction, regular exercise or exercise, relaxation and coping with stress [5]. In patients with hypertension with a family history of cardiovascular complications, it is recommended to use non-pharmacological approaches to lower blood pressure [6]. One of the relaxation techniques that can be used is massage, massage has proven to have many beneficial effects for

various conditions such as pain, hypertension, aging problems such as dementia and Parkinson's [7]. One of the massages is Swedish Foot Massage, massage in Arabic means pressing gently. Swedish Foot Massage is a massage technique by pressing on the nerve points on the feet to give a relaxing effect because blood flow becomes smooth [8].

## II. METHOD

This research method was a quasi experiment with a two group pre-post design approach. The sampling technique used simple random sampling. The number of respondents in this study were 10 respondents for each group. This research was conducted at the Internal Medicine Polyclinic of Baladhika Husada Hospital, Jember. Swedish Foot Massage therapy was carried out for 3 consecutive days, during which the intervention was carried out for 15 to 20 minutes. The data collection technique was carried out by measuring systolic and diastolic blood pressure using a sphygmomanometer and measuring pulse using a stopwatch five minutes before the intervention and five minutes after the intervention. Data analysis using test Data analysis using T-dependent, T-Independent, Wilcoxon and Mann Whitney.

## III. RESULTS AND DISCUSSION

### Results Characteristic

Table 1. Characteristic of Respondent Distribution by Age

Group	Mean	SD	Min-Max
Intervention	56,60	6,186	42-62
Control	54,20	5,007	45-60

From the data above, the average age (mean) and standard deviation (SD) of the 10 respondents in the intervention group was  $56.60 \pm 6.186$  in the age range of 42-62 years, meaning that the average age of the respondents is 56.60 with an average age difference each respondent to the average age of 6.186. In addition, in the control group the average and standard deviation is  $54.20 \pm 5.007$  in the age range of 45-60 years, meaning that the average age of the respondents is 54.20 with an average age difference of each respondent to the average age of 5.007. The youngest age in this study was 42 years and the oldest was 62 years

Table 2. . Characteristic of Respondent Distribution by Gender, Smoking history and Hypertension Therapy

Characteristic	Intervention		Control	
	f	%	f	%
<b>Gender</b>				
Male	5	50	7	70
Female	5	50	3	30
<b>Smoking History</b>				
Yes	4	20	7	70
No	6	80	3	30
<b>Hypertension Tx</b>				
Yes	-	-	-	-
No	10	100	10	100

Table 2 showed that in the intervention group each respondent amounted to 5 respondents and in the control group the sexes were more male, namely 7 respondents (70%). The number of respondents with a history of smoking were 4 respondents (40%) in the intervention group and 7 respondents (70%) in the control group. 20 respondents (100%) did not use antihypertensive drugs

## Result of Intervention Group

Table 3. Blood Pressure (BP) and Pulse Pretest and Posttest Swedish Foot Massage Therapy in the Intervention Group

		Blood Pressure (BP)						Pulse		
		Sistole			Diastole			Mean	Median	Min-Max
		Mean	Median	Min-Max	Mean	Median	Min-Max			
1 <sup>st</sup> Day	Pre	149,50	150	140-155	87	90	80-100	93,20	94	80-100
	Post	139,50	140	130-150	82	80	80-90	82,60	81	76-88
2 <sup>nd</sup> Day	Pre	143	140	140-150	85	80	70-100	83,40	80	70-88
	Post	134	130	130-140	83	80	70-100	74,80	76	63-86
3 <sup>rd</sup> Day	Pre	143	140	140-150	80	80	70-90	77,60	77	70-98
	Post	132,50	130	130-145	80	80	70-90	73,10	73	60-88

Based on table 3, it can be seen that the average value of blood pressure and pulse has decreased. The average decrease in systolic blood pressure on day 1 was 10 mmHg (from 149.50 mmHg to 139.50 mmHg), on diastolic blood pressure there was an average decrease of 5 mmHg (from 87 mmHg to 82 mmHg), while the pulse decreased 10.60 x / min. On day 2, the average value of the decrease in systolic blood pressure was 9 mmHg (from 143 mmHg to 134 mmHg), the diastolic blood pressure decreased by 2 mmHg (from 85 mmHg to 83 mmHg) while the pulse decreased by 8, 6x/minute. On the 3rd day, the average value of the decrease in systolic blood pressure was 10.50 mmHg (from 143 mmHg to 132.50 mmHg), the diastolic blood pressure did not decrease, while in the pulse there was an average decrease of 4.5 x/minute.

Table 4. Wilcoxon Test Results Blood Pressure Based on Pretest and Posttest

Group	BP	P	
		Z	P
Intervention	Sistole Pre	-2,919	0,004
	Sistole Post		
	Diastole Pre	-2,646	0,008
	Diastole Post		

Based on table 4, it can be seen that the results of the Wilcoxon test on systolic and diastolic blood pressure have p value of <0.05, namely 0.004 for systolic pressure and 0.008 for diastolic pressure. This shows that there is a significant difference between the pretest and posttest in the Swedish foot massage therapy intervention group.

Wilcoxon test was performed on blood pressure because the results of the normality test using Shapiro-wilk were <0.05.

Tabel 5. T-Test Dependent Pulse Based On Pretest And Posttest

Group	Pulse	P	
		t	P
Intervention	Pre	4,877	0,001
	Post		

Based on table 5, it can be seen that the results of the t-test on the pulse have p value of <0.05, which is 0.001. This shows that there is a significant difference between the pretest and posttest in the Swedish foot massage therapy intervention group.

T-test was performed on blood pressure because the results of the normality test using Shapiro-wilk were > 0.05.

## Result of control Group

Table 6. Blood Pressure (BP) and Pulse Pretest and Posttest in the Control Group

		Blood Pressure						Pulse		
		Sistole			Diastole			Mean	Median	Min-Max
		Mean	Median	Min-Max	Mean	Median	Min-Max			
1 <sup>st</sup> Day	Pre	146	145	140-155	82	80	70-90	82,60	80	70-100
	Post	147	145	140-155	82	80	70-90	94,40	96	90-100
2 <sup>nd</sup> Day	Pre	145,50	145	140-155	80	80	70-90	82,80	85	72-90
	Post	147	150	140-155	80	80	70-90	83,80	83	72-90
3 <sup>th</sup> Day	Pre	145,50	145	140-155	80	80	70-90	78	77	70-92
	Post	147	150	140-150	83,50	80	80-95	80,80	80	70-100

Based on table 6, it can be seen that the average value of systolic blood pressure on day 1 increased by 1 mmHg (from 146 mmHg to 147 mmHg), on diastolic blood pressure there was no decrease or increase in average, while on the pulse there was an increase. 11.80 x/minute. On day 2, the average value of the increase in systolic blood pressure was 1.5 mmHg (from 145.50 mmHg to 147 mmHg), the diastolic blood pressure did not decrease or increase on average, while the pulse increased 1 x /minute. On day 3, the average decrease in systolic blood pressure was 1.5 mmHg (from 145.50 mmHg to 147 mmHg), on diastolic blood pressure an increase of 4.5 mmHg (from 79 mmHg to 83.50 mmHg ), while the pulse increased by an average of 2.8 x/minute.

Table 7. Wilcoxon Test Results Blood Pressure and Pulse based on Pretest and Posttest in the Control Group

Group	BP	Z	P	Pulse	Z	P
				Sistole		
Control	Sistole			Pre		
	Pre	-0,707	0,480			
	Sistole			Post		
	Post				-1,342	0,180
	Diastole					
	Pre	-1,134	0,257	Post		
	Diastole					
	Post					

Table 7 showed that the results of the Wilcoxon test on systolic pressure, diastolic pressure and pulse have  $p > 0.05$ , namely 0.480 in systole, 0.257 in diastolic, and 0.180 in pulse. It was shown that there is no significant difference between pretest and posttest in the control group.

Wilcoxon test was performed on blood pressure and pulse because the results of the normality test using Shapiro-wilk were  $< 0.05$ .

## Mann Whitney Test Blood Pressure(BP) in the Intervention Group and Control Group

Table 8. Mann Whitney Test Blood Pressure(BP) in the Intervention Group and Control Group

Group	BP	Z	P
Intervention			
Control	Sistole	-3,914	0,000
Intervention			
Control	Diastole	-2,589	0,010

Based on table 8 the results of the Mann Whitney test on systolic and diastolic blood pressure

between the intervention group and the control group, the p value <0.05. This shows that there was a significant difference in systolic and diastolic blood pressure between the intervention group and the control group.

Mann Whitney test was performed on blood pressure because the results of the normality test using Shapiro-Wilk were <0.05

### **Independent T-test Pulse in the Intervention Group and Control Group**

Table 9. Independent T-test Pulse in the Intervention Group and Control Group

Group	Pulse	t	P
Intervention	Pulse	-4,746	0,000
Control			

Based on table 9, the results of the t-test on the pulse between the intervention group and the control group have a p value <0.05. This shows that there was a significant difference in pulse between the intervention group and the control group.

## **Discussion**

### **BP and Pulse Pretest and Post in the Intervention Group**

Based on the results of data analysis in the intervention group after being given Swedish foot massage therapy for 3 consecutive days, the average decrease in systolic blood pressure was 17 mmHg, 7 mmHg in diastolic blood pressure, and 21.10x/minute in pulse. According to Udani and Hermawan which stated that there was an average decrease of 10 mmHg in systolic pressure and 6 mmHg in diastolic pressure, but there were 3 respondents who did not experience changes in diastolic blood pressure after being given Swedish foot massage therapy while the average pulse decreased by 2.76x/minute [8,6].

The difference in the decrease in blood pressure and pulse in the pretest and posttest is caused by the effect of massage therapy which provides a relaxing effect [8]. This is in line with the results of Purnomo's research which states that it can reduce pain and provide a relaxing effect because it stimulates an increase in the production of endorphins [9]. When the body feels relaxed, all things that can cause muscle tension will be ignored at this time the parasympathetic nervous system plays more roles [10]. Massage can provide a sense of relaxation because of the stimulation of body tissues that cause a complex neurohumoral response in the Hypothalamic Pituitary Adrenocortical (HPA) through the nervous system pathway. Stress conditions are regulated by the HPA to secrete the hormone cortisol and endorphins which can decrease sympathetic nerve activity and increase parasympathetic nerve activity. Cortisol is the main stress hormone, tactile stimulation from massage can reduce the production of the hormone cortisol by affecting the secretion of corticotropin from HPA. Corticotropin can reduce cortisol and is interpreted as a relaxation response [11]. When the body feels relaxed, systemic vasodilation occurs and there is a decrease in stroke volume, cardiac output, and heart rate which ultimately lowers blood pressure [12]. This is supported by research by Sari et al which states that the response of a person after massage therapy is to feel comfortable and feel drowsy, and feel restful when sleeping[13]. According to Potter & Perry when the body feels comfortable, the heart rate will decrease [14].

Researchers assume that there are still several factors that can be risk factors for hypertension and Swedish foot massage therapy can reduce blood pressure and pulse. Respondents feel relaxed, comfortable and sleepy while doing massage. When the body is in a relaxed state, the parasympathetic nerves play a greater role, this causes the heart rate to decrease, thereby reducing blood pressure and pulse.

### **BP and Pulse Pretest and Post in the Control Group**

Based on the results of data analysis in the control group, the average increase in systolic blood pressure was 3 mmHg and 0.50 mmHg in diastolic blood pressure, while the average pulse decreased was 1.80x/minute. According to Bell et al there are several factors that can affect blood pressure, including physical activity, alcohol consumption, smoking, family history, stress, dietary

sodium, obesity and diabetes[15], while according to Sandi there are several factors that can affect pulse, includes physical activity, body position, gender and age [16].

Based on the results of the paired difference test of pretest and posttest blood pressure using the Wilcoxon test in the control group showed a p-value of 0.480 for systolic blood pressure, a p-value of 0.257 for diastolic blood pressure and a p-value of 0.180 for a pulse ( $p>0.05$ ). This shows that there is no significant difference in blood pressure and pulse between the pretest and posttest in the control group. The average systolic blood pressure increased, this was caused by three respondents in the control group who experienced an increase in blood pressure during observation, namely by 5 and 10 mmHg. Diastolic blood pressure also increased due to three respondents in the control group who experienced an increase in blood pressure of 5 and 10 mmHg. The average pulse decreased due to one respondent in the control group experiencing a decrease in pulse rate of 8x/minute. Although there was a decrease in the average pulse rate in the control group, the decrease in the statistical test was not significant.

The researcher assumed that someone with a history of smoking had a higher blood pressure and there was no decrease in blood pressure in the control group because the control group was not given Swedish foot massage therapy, while a decrease in the average pulse rate in the control group could be triggered because the respondent was in a position sat down when asked to tell the researcher about himself, so he felt consulted.

### Differences in BP and Pulse in the Intervention and Control Group

Based on the results of the unpaired difference test using the Mann Whitney test on blood pressure and the independent t-test on pulse performed in the intervention group and the control group, the results were  $p = 0.000$  ( $p <0.05$ ) on systolic blood pressure. These results indicate that there is a significant difference in systolic blood pressure between the intervention group and the control group. These results were supported by an average decrease in systolic blood pressure of 17 mmHg in the intervention group while there was an average increase of 3 mmHg in the control group. In diastolic blood pressure,  $p$  value = 0.010 ( $\alpha<0.05$ ). These results indicate that there is a significant difference in diastolic blood pressure between the intervention group and the control group. This is supported by an average decrease in diastolic blood pressure of 7 mmHg in the intervention group and an average increase of 0.50 mmHg in the control group. On pulse obtained  $p$  value = 0.000 ( $\alpha <0.05$ ). These results indicate that there is a significant difference in pulse between the intervention group and the control group. This is supported by an average decrease of 21.10x/minute in the control group and 1.80x/minute in the intervention group. Although there was a decrease in the mean pulse in the control group, there was no statistically significant decrease.

Massage is a manipulation therapy with gentle massage performed on the skin or tissue with the aim of providing physiological effects, especially on the muscular, vascular, and nervous systems of the body [17]. According to Supa'at et al Swedish foot massage therapy can provide a sense of relaxation and lower blood pressure through touch, massage [18]. According to Trionggo and Ghofar doing massage in the foot area will provide bioelectric stimulation to the body's organs so that it can cause a sense of comfort and relaxation because the blood flow in the body becomes smooth [19]. When the body feels relaxed, the sympathetic nervous system is calm and the parasympathetic nervous system plays a more active role [10]. The state of stress is regulated by the Hypothalamic Pituitary Adrenocortical (HPA) through the nervous system pathway by secreting the hormones cortisol and endorphins [11]. Cortisol is the main hormone in stress, touch stimulation in massage can reduce the production of the hormone cortisol by affecting the HPA in secreting corticotropin. Corticotropin can reduce cortisol by providing a sense of relaxation [11]. Techniques in massage can stimulate nerves on the surface of the skin which are then channeled to the brain in the hypothalamus, so that patients can perceive touch as a relaxation response and can cause a decrease in blood pressure [20]. Relaxed conditions will cause the heart rate to decrease [14].

the researcher assumed that the decrease in blood pressure and pulse in the intervention group was due to the intervention group being given Swedish foot massage therapy which was carried out regularly and correctly for 3 consecutive days. The control group did not experience a decrease in blood pressure and pulse because they were not given massage treatment, while the pulse decreased but not statistically significant. Thus Swedish foot massage therapy can reduce

blood pressure and pulse in hypertensive patients.

#### IV. CONCLUSION

In the intervention group there were significant differences in blood pressure and pulse before and after Swedish foot massage therapy was given. In the control group there was no significant difference in blood pressure and pulse. There were significant differences in blood pressure and pulse between the intervention group and the control group. Although the pulse rate decreased on average in the control group, there was no significant decrease in statistical tests

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# The Multivariate Analysis Of Health Determinants On Compliance With Drug Drinking In Hypertension Patients At Pratama Mitra Clinic 02

Koesnadi<sup>1</sup>, Yeni Wahyu Cristina<sup>2</sup>, Mika Vernicia Humairo<sup>1</sup>, Sandu Siyoto<sup>1</sup>

<sup>1</sup>Institute of Health Sciences STRADA Indonesia

<sup>2</sup>Pratama Mitra Clinic, Kertosono, Indonesia

\*Corresponding author : [dryenicristina@gmail.com](mailto:dryenicristina@gmail.com)

## ABSTRACT

*Keywords:*  
family support\_1  
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hypertension,\_3  
trust and compliance\_4

Hypertension has a high prevalence rate in the general population, despite the wide availability of drugs, only about 25% of hypertension patients have blood pressure controlled. The purpose of this research was to analyze the effect, self-efficacy, family support and trust on medication adherence to hypertension patients at Pratama Mitra Clinic 02. The design of this research was an observational quantitative with a cross sectional approach with the focus of the research being to analyze the effect, self efficacy, family support and trust in medication adherence to hypertension patients at Pratama Mitra Clinic 02 with a population of 164 respondents and a sample of 116 respondents who were taken using the Accidental Sampling technique. The findings showed that almost half of the respondents had moderate self-efficacy as many as 47 respondents (40.5%). Almost of the respondents had sufficient family support as many as 47 respondents (40.5%). Almost half of respondents have confidence in drugs in the moderate category as many as 48 respondents (41.4%). Most of the respondents did not comply with hypertension drugs as many as 85 respondents (73.3%). Based on the results of the Multiple Linear Regression analysis, it shows that with a p-value of 0.000 <0.05, H1 is accepted, so it can be concluded that simultaneously there is an effect of self-efficacy, family support and trust on medication adherence to hypertension patients at Pratama Mitra Clinic 02 with an influence of 80.1%. Hypertensive patients can adhere to the drugs given by health workers, which drugs should be consumed until they run out according to schedule and routinely control the health facilities that were used before.

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## I. PRELIMINARY

Hypertension has a high prevalence rate in the general population, despite the wide availability of drugs, only about 25% of hypertension patients have controlled blood pressure (Bhagani, 2018). According to research <sup>1</sup> in Turkey, there is a high adherence to the use of conventional / traditional medicine so that many hypertension patients do not adhere to taking antihypertension drugs. Hypertension patients experience difficulty in adherence to antihypertension medication which can worsen their health status. Lack of adherence to hypertension drugs is the main reason for uncontrolled blood pressure and a major risk factor for other diseases, such as coronary

heart disease, cerebral thrombosis, stroke and chronic kidney failure<sup>2</sup>.

The large number of hypertension patients who experience recurrence and undergo inpatient treatment at the hospital shows that there is still a lack of adherence to treatment. Adherence to treatment is very important in patient care because it can reduce recurrence / recurrent hypertension and is very necessary to achieve controlled blood pressure<sup>1</sup>. The factors that influence obedience behavior are very complex and varied, one of which is social support (family) and knowledge<sup>4</sup>.

According to WHO data worldwide, around 972 million people or 26.4% of people worldwide have hypertension, this figure is likely to increase to 29.2% in 2025<sup>6</sup>. Of the 972 million people with hypertension, 333 million are in developed countries and the remaining 639 are in developing countries, including Indonesia<sup>5</sup>. The national hypertension prevalence based on Riskesdas 2018 is 29.3%, with the highest data in Bangka Belitung (31.1%) and the lowest in Papua (14.8%). There has been an increase in the prevalence of hypertension based on interviews (have they ever been diagnosed by health workers and taken hypertension medication) from 9.5 percent in 2013 to 11.3 percent in 2018<sup>7</sup>.

According to the 2018 Basic Health Research Data (Riskesdas), it shows that 29.3% of Indonesian population has hypertension and in 2016 the National Health Indicator Survey (Sirkernas) saw this figure at 32.4 percent (Sirkernas. 2016). According to data from the 2016 National Health Indicators Survey (Sirkernas), men with hypertension who obeyed taking antihypertensive drugs were 30.0% and were not obedient to taking antihypertension drugs by 70.0% while women with hypertension who were obedient to taking drugs were 30.7 % and not adherent to taking the drug 69.3%. This shows that only 30% of hypertension patients take antihypertension drugs. Based on data from the Central Bureau of Statistics of Nganjuk Regency (2019), the highest number of cases of disease is primary high blood pressure (hypertension), amounting to 106,059 patients during 2017-2019.

In 2015-2020, there were 1,052 patients who dropped out of hypertension treatment because some died, moved treatment places and even deliberately stopped treatment because they choose traditional medicine. However, the most data is 68.14% because of death. From the data of patients who died, it was found that most patients did not routinely take medication where patients rarely did control and only sought treatment if they felt a complaint<sup>8</sup>.

Based on the results of a preliminary study conducted by researchers on October 2, 2020 at the Pratama Mitra Clinic 02 to 10 respondents, it was found that a total of 7 respondents (70%) had non-compliance in taking hypertension drugs where this was due to the respondents' lack of knowledge about how to treat and prevent hypertension , the respondent also considers that taking hypertension medication only when he feels there is a complaint and when there is no complaint, the respondent stops taking the drug which is because the respondent feels that the drug is not good for continuous consumption, and also found that the respondent's family is less supportive of the drinking schedule medication and control schedules to health facilities.

Non-adherence to medication is one of the biggest public health problems and is considered to be a major cause of hypertension. Lack of adherence to antihypertension drugs is the main reason for poor hypertension control<sup>1</sup>. Low adherence to antihypertension drugs has also been observed among hypertension patients, more than half of them do not achieve controlled blood pressure, thus succumbing to disease and reduced quality of life (Ma and Ph, 2016). The progression of hypertension can be reduced by several factors such as social support, environmental factors, and family support. Family support has a positive effect in controlling disease. Family support will help increase knowledge about hypertension and provide motivation<sup>2</sup>. Patients who had support from their families showed improved care than those who did not receive support from their families. Family support can be in the form of information about their illness or reminders to take medication. The impact of uncontrolled blood pressure is to increase the risk of ischemic heart disease fourfold and the risk of cardiovascular damage two to three times<sup>5</sup>.

Behavior adherence to therapy is influenced by beliefs about disease and medication, forgetting to take medication, side effects of medication, complexity of treatment, lack of knowledge about the disease and its treatment, financial and psychological difficulties, social / family support, the quality of the relationship between patient and doctor and poor quality of life<sup>5</sup>. Treatment adherence

can be seen from the patient's diligence in taking medication according to schedule, the medicine is taken every day, and the medicine runs out on time. Assessment of medication adherence can also be seen in patient self-reports, drug counts, pharmacy records, drug levels and treatment monitoring systems<sup>1</sup>

Family support is also associated with improving blood pressure in sick families in the form of emotional support, reward support, instrumental support, and informational support (Friedman et al., 2010). Specifically, adequate family support has been shown to be associated with reduced mortality<sup>2</sup>.

Based on the above conditions, the authors are interested in researching the multivariate analysis of health determinants of medication adherence in hypertension patients at Pratama Mitra Clinic 02

## II. MATERIALS AND METHODS

In this study, researchers used a quantitative observational design with a cross sectional approach, namely is the research to learn the dynamics of the correlation between risk factors and effects, by approaching, observing or collecting data at once (point time approach), that is, each research subject. Was only observed once and measurements were made of the character status or subject variables at the time of examination. This does not mean that all research subjects were observed at the same time (Hidayat, 2011). This research will analyze the influence of self-efficacy, family support and trust on medication adherence to hypertension patients at Pratama Mitra Clinic 02.

The total population was 164 respondents and a sample of 116 respondents was taken using the Accidental Sampling technique. Data analysis using Linear Regression test.

## III. RESULTS AND DISCUSSION

Table 1 Results of linear regression analysis Multivariate analysis of health determinants of medication compliance in hypertension patients at Pratama Mitra Clinic 02 which was held on December 15 2020-January 15 2021 with a total of 116 respondents

No.	Variable	Sig	B	<i>R</i> <sup>2</sup>	Sig
1	(Constant)	0.005	2,513		
2	Self Efficacy	0.001	0.992		
3	Family support	0.001	0.680	0.801	0.000
4	Trust	0,000	1,764		

### 1. Partial

#### a. The Effect of Self-Efficacy on Compliance

Based on the results of Linear Regression analysis, it shows that the p-value is  $0.001 < 0.05$ , then H1 is accepted, so it can be concluded that partially there is the effect of self-efficacy on medication adherence to hypertension patients at Pratama Mitra Clinic 02.

#### b. The Effect of Family Support on Compliance

Based on the results of Linear Regression analysis, it shows that the p-value is  $0.001 < 0.05$ , then H0 is rejected and H1 is accepted, so it is concluded that partially there is the effect of family support on medication adherence to hypertension patients at Mitra Pratama Clinic 02.

#### c. The Effect of Trust on Compliance

Based on the results of Linear Regression analysis, it shows that the p-value is  $0.001 < 0.05$ , then H0 is rejected and H1 is accepted, so it is concluded that partially there is influence trust in medication adherence to hypertension patients at Pratama Mitra Clinic 02

### 2. Simultaneously

Based on the results of the Multiple Linear Regression analysis, it shows that with a p-value of  $0.000 < 0.05$ , H1 is accepted, so it can be concluded that simultaneously there is

the effect of self-efficacy, family support and trust on medication adherence to hypertension patients at the Pratama Mitra Clinic 02 with an influence of 80.1%.

#### A. Self Efficacy of Hypertension Patients at Pratama Mitra Clinic 02

The results showed that almost half of the respondents had moderate self-efficacy as many as 47 respondents (40.5%). In addition, 42 respondents (36.2%) had low self-efficacy. Meanwhile, 23 respondents (23.3%) had high self-efficacy.

Suggests that self-efficacy refers to the extent to which an individual estimates his or her ability to carry out a task or perform a task required to achieve a certain result<sup>3</sup>. Belief in all of these abilities includes self-confidence, adaptability, cognitive capacity, intelligence and capacity to act in stressful situations.

Self-efficacy has effectiveness, that is, individuals are able to assess themselves as having the power to produce something they want. The high perceived self-efficacy will motivate individuals cognitively to act appropriately and with direction, especially if the goals to be achieved are clear goals. Self-efficacy is always related and has an impact on the choice of behavior, motivation and individual determination in dealing with every problem. Self-efficacy will develop gradually and continuously, often increasing abilities and increasing related experience<sup>4</sup>. So it can be concluded that self-efficacy is the confidence and stability of the individual, estimating the existing abilities that result in the behavior that is attempted so that the desired goals are achieved.

According to Bandura in Wening (2013) self-efficacy results in differences in how to think, feel and act. Belief in self-efficacy affects the choices made and actions achieved by individuals. Belief in self-efficacy also determines how much effort the individual puts in, and how long the ability to survive in the face of unfavorable situations. In addition, according to Bandura in Wening (2013) states that self-efficacy will increase immunity to anxiety, stress and depression and activate biochemical changes that can affect various threatening aspects of immune function.

This is different from the results of research conducted by Yang, Jeong, Kim and Lee (2013) in Pematasari, Lukman, & Supriadi (2014), arguing that providing information about self-care 41 hypertension is related to self-efficacy in controlling hypertension and is an influencing factor. significantly in hypertension treatment behavior. Elderly who have high self-efficacy will achieve a better goal because they have strong motivation, clear goals, stable emotions and their ability to provide good results for activities or behavior successfully.

The beliefs that individuals have are things that influence individuals in self-care. This belief is called self-efficacy<sup>5</sup>. state that self-efficacy is a belief in yourself and one's ability to do something behavior successfully. A person who has high self-efficacy will be more likely to have the confidence and ability to achieve his desires according to his goals. The high level of efficacy in individuals cannot be separated from the 42 factors that influence it<sup>6</sup>.

According to researchers individuals have a form of high self-efficacy, namely having an optimistic attitude, a positive mood can improve health and process information more efficiently, have the thought that hypertension is not something to be ashamed of but instead motivates themselves to obediently seek treatment, while individuals have low self-efficacy. namely having a pessimistic attitude, negative moods increase the likelihood of a person becoming angry, feeling guilty, and not wanting to recover from an illness even ignoring the illness.

#### B. Family Support for Hypertension Patients at Pratama Mitra Clinic 02

The results showed that almost half of the respondents had sufficient family support as many as 47 respondents (40.5%). In addition, 41 respondents (35.3%) had poor family support. Meanwhile, 28 respondents (24.1%) had good category family support.

According to Friedman (2014) family support is an attitude, action and family acceptance of its members. Family members are seen as an inseparable part of the family environment. The family also functions as a support system for its members and family members perceive that people who are supportive, are always ready to provide help with assistance if needed.

Kane in Friedman (2012) defines family support as a process of the relationship between the family and the social environment. According to Kuncoro (2012) family support is verbal and non-verbal communication, advice, real help or behavior provided by people who are familiar with the subject in their social environment or in the form of presence and things that can provide emotional or influential benefits. In the behavior of the recipient, in this case the person who feels supported emotionally feels relieved to be cared for, gets suggestions or a pleasant impression on himself.

Family and community support has a big role in improving medication adherence, namely by providing supervision and encouragement to sufferers. The advantage of a family as a PMO is that they have a place to live in the same house as the patient so that monitoring is more optimal and does not require direct transportation costs (Becher, 2014). Patients and their families are aware of the importance of adherence to treatment and often sufferers want to finish treatment immediately so that the community sees them as being cured so that they can be accepted back in the community.

Kaplan (2013) explains that families have four types of support, namely: informational, assessment, instrumental and emotional support. Hypertension sufferers really need all four types of support from their families so that they can increase medication adherence and speed up the healing process.

According to Rahayu, Ferani & Rahayu (2010), the factors that influence family support are internal factors and external factors. Internal factors include the stage of development, education and level of knowledge, emotion and spirituality. External factors include support practices in the family, psychosocial economy and family background.

Developmental stage affects family support, meaning that support can be determined by age, in this case growth and development, so that each age range (infants-elderly) has an understanding and response to different health changes. Children have higher levels of adherence than adolescents even though children are less informed. For elderly patients, medication adherence can be affected by a reduced memory, plus if elderly patients live alone. According to Dunbar (2014) adherence to treatment rules in children, adolescents and adults is the same.

Education and knowledge level, a person's belief in the existence of support is formed by intellectual variables consisting of knowledge, educational background and past experiences. Cognitive abilities will shape a person's way of thinking, including the ability to understand the factors associated with disease and use knowledge about health to maintain one's own health (Asmet, 2014).

Emotional factors also influence trust in the existence of support and how to implement it. A person who experiences a stress response in every change in his life tends to respond to various signs of illness, perhaps doing so by worrying that the disease is life threatening. A person who appears generally very calm may have little emotional response during illness. An individual who is unable to emotionally coping with the threat of disease may deny that he has symptoms of the disease and refuses to undergo<sup>6</sup>.

In patients with hypertension, family support is considered an important determinant of health behavior. Family support that someone needs can be in the form of moral, emotional and intimate support as well as the need for information and feedback. This can be fulfilled by the family. The strength of family support influences individual self-care behavior through increasing motivation, providing information and providing<sup>5</sup>.

According to family researchers, it has an important role in a person's life as well as people with hypertension. With family support, people with hypertension will feel more meaningful and have the enthusiasm to be able to recover from their illness. Based on the results of the study, it was found that there are still many hypertension sufferers who do not get family support. The family should be able to provide encouragement, input and remind people to take medicine that the purpose of taking medicine is for the patient's recovery. The cause of lack of family support is because the family is too busy with their work to meet family needs. In addition, it is because the family is tired of reminding people with hypertension to take medication because their advice was often ignored in the past.

### C. Trust in Medicinal Drugs in Hypertensive Patients at Pratama Mitra Clinic 02

The results showed that almost half of the respondents had confidence in drugs in the moderate category as many as 48 respondents (41.4%). In addition, a number of 40 respondents (34.5%) have low confidence in drugs. Meanwhile, 28 respondents (24.1%) have high confidence in drugs.

According to Mowen and Minor in Donni Juni (2017) Trust is all knowledge possessed by consumers and all conclusions made by consumers about objects, attributes and benefits. According to Rousseau et al in Donni Juni (2017) Trust is a psychological area which is a concern to accept what it is based on expectations of good behavior from others.

According to Maharani (2010) Trust is one sided belief in reliability, durability and integrity of the other sided in relationship and the belief that their actions are of the best interest and will produce positive results for the trusted sided. Meanwhile, according to Pavlo in Donni Juni (2017), trust is an assessment of a person's relationship with another person who will carry out certain transactions in accordance with expectations in an environment full of uncertainty.

Trust in therapy behavior is influenced by trust about disease and medication, forgetting to take medication, side effects of medication, complexity of treatment, lack of knowledge about the disease and its treatment, financial, psychological difficulties, social / family support, the quality of the relationship between patient and doctor and poor quality of life. Trust in treatment can be seen from the patient's diligence in taking the medicine according to schedule, the medicine is taken every day, and the medicine runs out on time. The assessment of medication confidence can also be seen in the patient's self-report, the number of drugs, pharmacy records where the patient always takes the recommended medication by the health worker.

According to researchers, trust is an expectation held by an individual when words, promises, oral or written statements from an individual or other group can be realized. Where the things that are said by health workers can be believed by hypertension patients and believe all the suggestions for the patient to do. So that hypertension patients can take drugs on their own accord, not a compulsion. Based on the results of the research, it was found that many hypertension patients have low trust in drugs, which is due to their lack of knowledge of the benefits of drugs and also because of poor perceptions of health workers.

### D. Compliance with taking medication in hypertension patients at Pratama Mitra Clinic 02

The results showed that the majority of respondents did not comply with hypertension drugs as many as 85 respondents (73.3%). Meanwhile, 31 respondents (36.7%) obeyed to take hypertension medication.

The goal of treatment for people with hypertension is to improve the quality of life. However, many stop treatment when they feel their body is getting a little better. So it is necessary to comply with patients undergoing hypertension treatment in order to obtain a better quality of life for patients. Factors that affect patient persistence in treatment include income level, patient education level, ease of access to health facilities, patient age, availability of health insurance that relieves patients from paying for medical expenses<sup>2</sup>.

Adherence to taking medication in patients with hypertension is very important because taking antihypertension drugs regularly can control the blood pressure of people with hypertension. So that in the long term the risk of damage to important organs of the body such as the heart, kidneys and brain can be reduced. According to a WHO report in 2003, the average adherence of patients to long-term therapy for chronic disease in developed countries was only 50% while in developing countries, the number was even lower.

Furthermore Olowookere, et al. (2015) reported that 39% of patients were non-adherent to therapy. This figure is lower than WHO data (2013) which states that 50% -80% of hypertensive patients are not adherent to therapy. In line with the research above, the results of his research show that only a small proportion of respondents have high adherence (14%), while more than some (59%) show moderate adherence, in fact there are still some who have low adherence (27%).

WHO (2013) states that non-adherence to therapy is one of the causes of ineffective hypertension treatment. Approximately 75% of patients who do not adhere to therapy develop uncontrolled blood pressure. The impact is that the increased mortality rate is mainly due to complications such as coronary heart problems.

According to researchers, compliance is the level of a person carrying out activities and behaviors that have been suggested or defined. Compliance is a term to describe obedience or surrender to predetermined goals. Likewise in hypertension patients where should be able to comply with health therapy which aims to relieve the symptoms of disease and even cure the hypertension they have suffered so far. However, based on the results of the study, it was found that there were still many patients who did not comply with therapy according to instructions from health workers where the drugs that had to be consumed completely were often not consumed several times, in fact there were some patients who took hypertension drugs only when he was feel the disease just recur.

#### **E. Effect of Self-Efficacy on Compliance with Medication in Hypertension Patients at Pratama Mitra Clinic 02**

Based on the results of Linear Regression analysis, it shows that the p-value is 0.001 <0.05, then H1 is accepted, so it can be concluded that partially there is the effect of self-efficacy on medication adherence to hypertension patients at Pratama Mitra Clinic 02.

These results are the same as research from that self-efficacy affects how a person thinks, feels, motivates himself and acts. Self-efficacy focuses on the perception or trust in ability to act according to certain goals so that you can perform maximum self-care with better results.

According to Lew and Owen (1998) in Kara and Alberto (2014), patients who have self-confidence in their ability to perform self-care behaviors will be more likely to actually do this task. Thus, hypertension patients must have a perspective on the importance of self-efficacy in controlling blood pressure so that they have good blood pressure (Cornely, 1993., Anderson, 1995 in Kara & Alberto, 2014).

Research conducted by Warren-Findlow et al., (2012) in Huda (2017), confirms that self-efficacy is significantly related to hypertension self-care. Most of them agree that self efficacy is related to hypertension self-care management adherence. These results also support the research of Prakobchai (2014) in Huda (2017), that respondents who have high self-efficacy have a statistically positive correlation with medication compliance in Thailand. People who have high self-efficacy are more likely to be able to make positive health behavior changes that can increase or control chronic disease. Efficacy is a strong factor and can be used to predict and explain a person's health behavior (Huda, 2017).

According to researchers, several research show that someone who has high self-efficacy will show positive results in adherence to therapy such as increasing participation in a physical exercise program, reporting normal blood pressure results and also taking medication properly and correctly according to the schedule given. So that according to the results of the study, there is an effect of self-efficacy on adherence to taking medication in hypertension patients at Pratama Mitra Clinic 02.

#### **F. The Effect of Family Support on Compliance with Medication in Hypertension Patients at Pratama Mitra Clinic 02**

Based on the results of Linear Regression analysis, it shows that the p-value is 0.001 <0.05, then H0 is rejected and H1 is accepted, so it is concluded that partially there is the effect of family support on medication adherence to hypertension patients at Pratama Mitra Clinic 02.

This research is in line with research conducted by Olowookere, et al. (2015) who showed that patients with high family support were more adherent than patients with low family support. Another study conducted by Osamor (2015) also proves that family support is closely related to hypertension treatment adherence.

According to Osamor (2015), chronic diseases such as hypertension require lifelong treatment. It is a challenge for patients and families to maintain motivation to adhere to treatment over the years. One way to increase motivation is through family support.

According to Wilson and Ampey-Thornhill (2001), family support is assistance or assistance provided by family members. When families share their problems with a social support system, advice and guidance will be provided to clients. Creating an environment of compassion, directing and finding sources of care and providing financial assistance are common forms of family support. According to Osamor (2015), social support will increase awareness of using health services, which is an important component of adherence.

Management of chronic diseases such as hypertension requires adequate family support. Extending family support is not only limited to spouses or other family members but also involving the nuclear family (family social network) is needed (Wilson & Ampey-Thornhill, 2001). According to Osamor (2015), nurses can assist families in exploring the use of family networks. Family support enables the family to function with full competence so as to improve adaptation and family health.

Research conducted by Li, et al., (2015), by providing a family member-based monitoring package for 1 month, then providing monitoring of the family for 6-12 months, showed that family support provided significant results for controlling blood pressure. Although the results were not significant at the end of the session, this intervention shows that family has a positive impact on patient adherence to therapy. According to Osamor (2015), family support needs to be considered as a program for a chronic disease health promotion strategy.

According to the family researcher, he is the closest person to the hypertension patient who knows the daily life and nature of the hypertension patient, besides that the family is also the person who interacts with the patient every day. So that patients sometimes depend on their families to help meet all their needs. Patients who tend to be bored with the treatment can be given motivation or direction by their families so that they can always try to obey to take the drug. Likewise, when the family does not play a role in the treatment of the patient, the patient will tend to get bored easily and eventually will not comply with hypertension treatment. So that according to the results of the study, there is an effect of family support on compliance with taking medication in hypertension patients at the Pratama Mitra Clinic 02.

#### **G. The Effect of Trust on Compliance with Medication in Hypertension Patients at Pratama Mitra Clinic 02**

Based on the results of Linear Regression analysis, it shows that the p-value is 0.000  $<0.05$ , then H0 is rejected and H1 is accepted, so it is concluded that partially there is influence trust in medication adherence to hypertension patients at Pratama Mitra Clinic 02

The results of this study are consistent with the results of previous studies which suggest that belief in the effectiveness of therapy is closely related to the good management of blood pressure (Kirscht & Rosenstock, Nelson, et al., Ross, et al., In Heckler, et al., 2008).

Confidence in the effectiveness of therapy is formed from combining information that provides descriptions of the disease with the experiences experienced by patients during disease. Trust in the effectiveness of therapy is one of the five personal model constructs consisting of Lia Mulyati: Analysis of Factors Affecting Self Management Behavior Volume 1 Number 2 August 2013 119 from patient identity (a characteristic of a condition), experience of symptoms, consequences must be accepted regarding the illness suffered by the patient, length of illness, and the patient's ability to control the treatment and the effectiveness of the patient's treatment (Hagger & Orbel, in Heckler, et al., 2008).

Research conducted by Shin, Yun, Pender and Jang (2005), shows that the variable self-confidence in therapy effectiveness (perceived benefit variable) has a relationship with self-efficacy and individual healthy behavior, meaning that belief in the effectiveness of therapy will be directly proportional to self-efficacy. . However, this contradicts the results of this study which show that respondents have lower self-efficacy than their self-confidence in the effectiveness of

therapy. This shows that a high level of self-confidence in the effectiveness of therapy does not necessarily indicate a high self-efficacy of respondents.

According to researchers, patients who are currently undergoing treatment therapy, especially hypertension, must have high confidence in the benefits of drugs provided by health workers, where the benefits of the drugs that must be consumed are to reduce symptoms of hypertension and even cure the disease. However, in fact many hypertension patients do not believe in the benefits of drugs, which of course can lead to patient non-compliance in taking the drug properly and correctly. So that according to the results of the study, there is influence trust in medication adherence to hypertension patients at Pratama Mitra Clinic 02.

#### IV. CONCLUSION

1. Nearly half of the respondents had moderate self-efficacy as many as 47 respondents (40.5%).
2. Almost half of the respondents 47 respondents (40.5%) had sufficient family support.
3. Almost half of respondents have confidence in drugs in the moderate category as many as 48 respondents (41.4%).
4. Most of the respondents 85 respondents (73.3%) did not comply with hypertension medication.
5. There is the effect of self-efficacy on medication adherence to hypertension patients at Pratama Mitra Clinic 02
6. There is the effect of family support on medication adherence to hypertension patients at Pratama Mitra Clinic 02
7. There is influence trust in medication adherence to hypertension patients at Pratama Mitra Clinic 02

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# The Effect of Expressive Writing Therapy to The Stress Level on Class IX Students Ahead of The National Exam

Arif Setyawan\*<sup>1</sup>, Nirmala K.S<sup>2</sup>, Marina Rizky Novira<sup>3</sup>,

<sup>1</sup>Management Nursing, Nursing, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>2</sup>Medical Nursing, Nursing, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>3</sup>Community Nursing, Nursing Student, STIKes Bhakti Mulia, Kediri, Indonesia

\*Corresponding Author E-mail: arifsetyawan199@gmail.com

## AB STRAC T

**Keywords:**

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Stress

Expressive Writing Therapy

**Background:** National examination is one of the government's efforts to improve the quality of education in Indonesia. There are students having stress when facing national examinations, so that appropriate action is needed to deal with the stress experienced by students. One of them is by providing cognitive expressive writing psychotherapy. Write down thoughts and deepest events about an unpleasant event effective in reducing stress levels.

**Methods:** Research method using Pre Experimental, type of One Group Pre-test Post-test Design with sample class IX students who will undergo national examinations that meets the inclusion and exclusion criteria using Purposive Sampling technique with sample of 39 respondents and the respondent that drop out as many as 1 respondent. Research instrument using Educational Stress Scale for Adolescents (ESSA) by Jiandong Sun, et al in Indonesian Language.

**Results:** Expressive writing therapy is done in three sessions, each writing session is conducted for 15-20 minutes. The results of the majority of respondents experienced a change in the stress level previously in the very high category as many as 19 respondents (48.72%) to 8 respondents (20.51%). Based on the results of the Paired Sample T-Test obtained significance value  $0.000 < \alpha (0.05)$ .

**Conclusions:** Expressive writing therapy can reduce the stress levels.

## I. INTRODUCTION

The National Examination is one of the government's efforts to improve the quality of education in Indonesia which serves as an evaluation tool to find out the cognitive abilities of students throughout Indonesia from elementary school to high school and equivalent (1). In addition to having a positive impact, the National Exam can also provide psychological burdens for students that cause students to become stressed. Students who experience stress are mostly caused by fear of not passing the National Exam, and demands from parents to pass the National Exam. In addition, the National Exam score is also one of the determinants for students in choosing secondary schools (2).

Based on the results of a preliminary study at MTs Miftahul Huda Jatisari on 18<sup>th</sup>-20<sup>th</sup> February 2019, the number of students who will undergo the 2019 National Exam is 40 people. The results of interviews with 28 students found many complaints including headaches (dizziness), decreased concentration, easy drowsiness, irritability and fatigue, dry throat, moist palms, insomnia, anxiety, and reduced immune function.

Students who experience stress will tend to show decreased academic ability, deteriorating health, depression, and sleep disorders (3). Besides that, stress can cause a person to lose motivation

and enthusiasm in carrying out daily activities, even to the activities they like. They tend to prefer to be alone and locked themselves in a room. If this is not immediately addressed it will cause depression and can pose a risk of violent behavior to suicide (4).

Psychological stress management requires guidance and assistance, one of which is by using expressive writing techniques (6). Expressive writing therapy is an intervention in the form of cognitive psychotherapy that can overcome the problems of depression, anxiety, and stress, because this therapy is a therapy for reflecting the thoughts and innermost feelings of unpleasant events. One of the advantages of expressive writing therapy is that it frees clients to vent all their anxiety into writing without having to pay attention to standard wording or writing good and correct language (7).

Based on the description above, the researcher is interested in conducting a study with the title "The Effect of Expressive Writing Therapy to the Stress Level on Class IX Students Ahead of the National Exam at MTs Miftahul Huda Jatisari".

## II. METHODS

Research design is a process that is needed in the planning and implementation of research (8). In this study, researchers used a Pre-Experimental research method with the design of One Group Pre-Test Post-Test Design. The sample in this study is class IX students who will undergo the National Exam at MTs Miftahul Huda Jatisari in 2019 by 40 respondents with the number of respondents dropping out is 1 respondent. So that the number of samples used until the study ended was 39 samples.

## III. RESULTS AND DISCUSSION

### a. Results

Table 1 Frequency distribution of stress levels before treatment

Stress Level	F	%
Very low	0	0
Low	1	2,56
Moderate	5	12,82
High	14	35,90
Very high	19	48,72
Total	39	100

Data distribution of the stress levels after treatment in Class IX students at MTs Miftahul Huda Jatisari, can be seen in the following table:

Table 2 Frequency distribution of stress levels after treatment

Stress Level	F	%
Very low	8	20,51
Low	8	20,51
Moderate	11	28,21
High	4	10,26
Very high	8	20,51
Total	39	100

Data analysis of different levels of stress tests in class IX students before the National Exam at MTs Miftahul Huda Jatisari before and after expressive writing therapy using the Paired Sample T-test can be seen in the following table:

Table 3 Analysis of the different stress levels before and after expressive writing therapy.

Variabel		N	p-value
Pre-test	Positive	26	0,000
Post-test	Negative	3	
	<u>Same</u>	<u>10</u>	
	<u>Total</u>	<u>39</u>	

\* Paired Sample T-test Significance value p-value  $<\alpha$  (0.05), with n = 39

Based on table 3 above, the results show that a significant value or p-value  $<\alpha$  (0.05), which means that there is an effect of giving expressive writing therapy to changes in stress levels of class IX students ahead of the National Exam at MTs Miftahul Huda Jatisari.

## b. Discussion.

### 1. Analysis of stress levels before treatment

The results showed that the stress level of respondents before performing expressive writing therapy with a very high category of 19 respondents consisting of 11 female and 8 male respondents, while the high category of 14 respondents consisting of 4 female and 10 male respondents. The average score of stress levels before treatment was 54.18.

The stress level experienced by female students is higher than male students. This is because when getting a stressor, women are more likely to use their feelings, from these feelings then spread to the mind and cause stress. Another case with men who use more logic in acting so it can be reduced the stress. This is in accordance with research conducted by Astuti, et al (2017) who suggested that when performing tasks that are full of pressure, women experience a greater increase in negative emotions and prefer to shed their feelings to others. Unlike the case with men who tend to find ways to fight with the stress experienced.

Besides being caused by gender, in this study most of the respondents who experienced high and very high categorical stress levels were respondents with more than 10 major achievements because with these levels of achievement it was possible the level of understanding of the National Examination material was still lacking, making it difficult to understand certain subject matter, afraid or not happy about certain lessons and the amount of material that is too much, as a result can affect the mentality of respondents in the form of mental fatigue and loss of enthusiasm. This is consistent with research conducted by Barseli, et al (9), that facing heavy lessons in schools can cause stress on students, especially for students who will take the National Examination, because at this time students are generally experiencing pressure to get a good score in order to pass the National Examination and get into the desired school.

### 2. Identification Analysis of stress levels after treatment

The results of the research after expressive writing therapy showed that respondents who had stress levels with very high categories were 8 respondents, high categories were 4 respondents, moderate

categories were 11 respondents, low categories were 8 respondents, and very low categories were 8 respondents.

From these results, there was a change in stress levels between before and after expressive writing therapy for respondents, namely the very high category from 19 respondents down to 8 respondents, the high category from 14 respondents down to 4 respondents, the medium category from 5 respondents rose to 11 respondents, the low category from 1 respondent rose to 8 respondents, and the very low category from 0 rose to 8 respondents. In this study, changes in stress levels that are very high (decreased stress levels) are influenced by the readiness to conduct the National Exam and positive suggestions for success in facing the National Exam. In the expressive writing therapy stage, namely in the juxtaposition / feedback and application to the self stages, respondents are encouraged to gain new awareness that can inspire attitudes and behavior, and understand every moment that occurs. So that all negative things that are in the mind of the respondent such as fear and anxiety are transformed into a positive thing that serves to arouse and motivate themselves. This is in accordance with research conducted by Danarti, et al (10) which suggests that positive thinking is a direct application of spiritual techniques to overcome defeat and win trust and create positive results. In addition, positive thinking can make individuals accept the situation being faced more positively (7). Expressive writing therapy had a significant effect on reducing stress levels in both male and female respondents. This is evidenced from the results of the post- test which showed that there was a decrease in stress levels by the number of 11 female respondents and 15 male respondents. This means that expressive writing therapy is effective for both genders. This statement is in accordance with research conducted by Perez, et al (11), that women tend to be more emotional, sensitive, reactive, and can express their deepest feelings well. Thus, expressive writing therapy is expected to have an extraordinary effect on female respondents. For male respondents, socializing practices encourage them to suppress their emotions, including fear and anxiety. Expressive writing therapy can help male respondents to express positive emotions and reduce negative emotions, so that stress on men can also be reduced significantly.

While the respondents whose stress levels were constant or increased were caused by the lack of readiness in undergoing the National Exam. This is supported by the results of expressive writing therapy which shows that 10 respondents are still afraid and are not ready to undergo the National Exam. In addition, not all respondents liked writing activities, there were respondents who were confused or difficult to write down their feelings, so that positive suggestions that should be obtained when they did not get the therapy or lacking could have a significant effect. Another factor that influences the level of stress that remains or rises is the type of personality possessed by the respondent. Respondents who have introverted personality types tend to be difficult to write down their feelings compared with respondents with extroverted personality types. This is because introverted people tend to bury their feelings, process things internally (think of ideas in their own minds), and prefer things that should be disclosed to others and which should not be disclosed. As a result, in conducting expressive writing therapy, negative things that should be issued cannot be excluded as a whole so that there are still fears and anxieties in the respondents especially those related to the National Examination

### **3. Analysis of differences in stress levels between before and after treatment.**

Paired sample t-test results show that a significant value or p-value of 0,000 <α (0.05), which means that there is an effect of giving expressive writing therapy to changes in stress levels. In expressive writing therapy, respondents are given the opportunity to write down their emotion, they tend to

experience changes in immune and psychological function. Immune cells (T-lymphocytes) can be strengthened with writing activity. By writing down their feelings, someone can re-evaluate their lives and help to re-understand the moment. The same thing was stated by Danarti, et al (10), that writing can also improve the performance of the frontal lobe of the brain, so that it can clear the mind of bad things you want to do due to stress.

Expressive writing is the same therapy as writing a diary or journaling, that is, using writing therapy as meditation, which is very important to connect yourself with the mind. This is supported by Ackerman (2018), that writing is closely related to the performance of the left brain (for things that are rational), when the left hemisphere is working, then the right hemisphere (the part that stimulates creativity, feelings, and intuition) is given freedom to wandering according to creativity. This method can eliminate mental disorders and allow a person to use his brain power to better understand himself, so that it can improve mood, help overcome traumatic events, and reduce negative emotions associated with traumatic experiences.

In this study, expressive writing therapy was carried out using three sessions, where respondents wrote about their deepest thoughts or feelings about traumatic experiences that disturbed the mind, especially those related to the National Examination and activities at school. Respondents write down their deepest feelings and involve their emotions in making stories, so that negative emotions stored in memory will be issued and respondents will be relaxed, the burden of thought decreases, and the stress level of respondents also decreases.

According to Doucet, et al (5), expressive writing therapy is a cognitive psychotherapy intervention to help overcome difficult life experiences (traumatic) so that it can provide positive benefits on mental health, especially for adolescents. This therapy can facilitate the individual to change his cognitive, so that emotional pressure becomes subsided, gain new energy, direct attention, and focus on positive goals and behavior (10). So that by giving expressive writing therapy, the stress level of students in facing the National Examination can be reduced and the enthusiasm for learning will increase. In contrast to what is expressed by Kellas, et al (2015), that someone who is stressed is more likely to choose to discuss their problems with friends rather than pouring their feelings in written form, this is because by telling someone they can discuss the problems faced and can share their emotional problems with others, so that with the reciprocal stress that disturbs the mind can be reduced.

#### **IV. CONCLUSION**

1. Based on the pre-test results it is known from a total of 39 respondents, some respondents had a very high stress level category of 19 respondents (48.72%) and a high category of 14 respondents (35.90%) with an average score of stress levels at 54.18.
2. Based on the post-test results of a total of 39 respondents, the stress level with a very high category was 8 respondents (20.51%) and the high category was 4 respondents (10.26%) with an average score of stress levels of 37.56 .
3. Based on data analysis using Paired Sample T-Test, the result of significant value or  $p$ -value  $0,000 < \alpha (0.05)$  thus  $H_0$  is rejected, meaning that there is an effect of giving expressive writing therapy to changes in stress level because expressive writing therapy can help respondents in reducing the burden of the mind, more relaxed, calm, comfortable, and the spirit of learning is increasing.

#### **V. ACKNOWLEDGMENT**

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# Vinegar Acid As Binder To Heavy Metals Lead And Cadmium In Kupang

Indasah<sup>1</sup>

<sup>1</sup>Postgraduate, Institute of Health Sciences STRADA Indonesia, Indonesia

[indasah@gmail.com](mailto:indasah@gmail.com)\*

\* Corresponding author

## ABSTRACT

*Keywords:*  
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*Kupang* is nutritious food product, but on the other hand it also been contaminated by lead and Cadmium which has been endangering human being. Therefore, it is necessary to decrease the content of Lead and Cadmium in *Kupang* by so that it is safe to be consumed. The objective of this research is to study the use of vinegar acid to decrease the content of lead and Cadmium as much as possible of *kupang* (*Corbula faba*). From this research, it is hoped to find the best treatment to decrease the content of Lead and Cadmium of *kupang*.

The research is True Experimental and used Completely Randomized Design with 3 treatments, namely, the addition of 5 %, 15 % and 25 % Vinegar acid and compared with controlled treatment. The data obtained from the research finding show that without treatment (control) the average content of lead is 1.281 ppm, Cadmium is 1.254 ppm.

If it is related to the regulation FAO/WHO with says that the content of heavy metal allowed in food product that can be consumed by human being for lead is not more than 1 ppm and for Cadmium is not more than 0.1 ppm. Intake limit for lead based on the regulation of ADI (Acceptable Daily Intake) is 200 - 300 µg/day, for Cadmium is 25 – 60 µg/day. Lead content in *Kupang* is 1.281 mg/kg , it means that *Kupang* allowed to be consumed by human being that is 156 - 234 gram/day. Cadmium content in *kupang* is 1.254 mg/kg, it means that *kupang beras* allowed to be consumed by human being is 19.9 – 47.8 gram/day. The results showed that with the addition of vinegar, there was a decrease in lead by 90.1 – 95.7%, and cadmium by 97.3 – 98.5%. The addition of acetic acid which is best used to reduce the heavy metal content of lead and cadmium is a concentration of 25% with .

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## I. INTRODUCTION

*Kupang* is a nutritious food. The community, especially the East Java area, is very fond of culinary made from *kupang*, with mussel production centers in the Sidoarjo, Surabaya, Gresik, and Pasuruan areas. One of the problems with mussels is high levels of heavy metals, especially lead (tin), which is 4.01 ppm. Lead metal content exceeds the maximum limit of heavy metal contamination in food based on the Regulation of the Head of the Food and Drug Supervisory Agency (BPOM) which is 1.5 ppm. Pollution of heavy metal lead (tin) can come from nature and as a result of human activities, especially in industrial and transportation activities, which causes the amount of lead content (tin) to increase<sup>1</sup>.

Lead(black lead) enters the human body, it will cause anemia, kidney disorders, and neurological disorders and brain damage (neuropathy). Cadmium can motivate bone demineralization, increase bone fragility and fracture risk, cause anemia and hypertension, in testicles cause hyperplasia which is the beginning of cancer<sup>2</sup>. For this reason, efforts need to be made to reduce the levels of lead and cadmium so that they are safe for human consumption. For this reason, efforts should be made to reduce harmful heavy metals in mussels. One of these efforts is to use vinegar so that it can free food from metal contamination<sup>3</sup>. Vinegar is an organic acid that is soluble in water. Vinegar acid is capable of forming complex compounds with metals. Conducted a study of lead (Black Tin) levels in mussel meat which was boiled in pure vinegar for 30 minutes. Conducted a study that soaking 25% lime solution for 30 minutes can reduce cadmium levels in blood clams<sup>3</sup>.

The purpose of this study was to study the addition of vinegar in an effort to reduce the levels of Lead and Cadmium Kupang (Corbula faba). From this research, it is hoped that the best treatment can be found in an effort to reduce the levels of Lead and Cadmium in rice by using vinegar in an easy, simple and effective way so that it can be socialized to the public so that the impact of exposure to heavy metals Lead and Cadmium can be avoided<sup>2</sup>.

## II. METHOD

Design research True Experiment Research. True experimental research aims to determine the possibility of causality by applying one or more treatment conditions to one or more experimental groups and comparing the results with one or more control groups whose treatment conditions are not recognized<sup>3</sup>. Pure experiments testing independent and dependent variables were carried out on samples of the experimental group and control group, where the subjects studied in the two groups were taken randomly<sup>1</sup>.

Kupang samples obtained from Sidoarjo Kupang were washed, then boiled at 100oC for 2 hours, to separate the shell and meat. Kupang meat was then taken to the laboratory to be weighed 100 grams each as many treatments, namely 9 + 1 control with 4 replications so that 4 kg of meat was needed. Then each was placed in a plastic basin/place and soaked in 5% vinegar (5 ml of vinegar in 100 ml of distilled water), 15%(15 ml of vinegar in 100 ml of distilled water) and 25% (25 ml of vinegar in 100 ml of water) distilled water all ingredients were soaked in a solution of acetic acid with various concentrations for 1 hour. After 1 hour, the mussels were washed with distilled water and then the levels of lead and cadmium were measured in the mussel meat. This design can be described as follows.

## III. RESULT

Average and decreased levels of Lead, Cadmium Kupang due to the addition of vinegar with different concentrations

Table 1 Average Levels of Lead, Cadmium Kupang Rice due to the addition of vinegar.

Vinegar Acid	Lead drop (%)	Cadmium (%)
AAR (5%)	90,1	97,3
AAS (15%)	92,2	98,1
AAT(25%)	95,7	98,5

Looking at the table above, it can be explained that with the addition of vinegar, the lowest average levels of Lead and Cadmium occurred in the addition of 25% vinegar. The results of the analysis of the decrease in the levels of Lead, Cadmium due to vinegar treatment compared to the control are presented in the following table:

Table 2. Decreased levels of Lead,Cadmium due to the administration of vinegar compared to the control.

Vinegar acid	Lead content (mg/kg)( $x \pm SD$ )	Cadmium content (mg/kg)( $x \pm SD$ )
K	1,28 ± 0,03	1,25 ± 0,02
AAR (5%)	0,13 ± 0,01	0,03 ± 0,01
AAS (15%)	0,10 ± 0,01	0,02 ± 0,01
AAT(25%)	0,06 ± 0,01	0,02 ± 0,01

Looking at the table above, it can be explained that the effect of giving vinegar acid to decrease levels of Lead and Cadmium is highest in the administration of 25% vinegar.

### 1. Differences in Levels of Lead, Cadmium in Kupang Rice Meat Due to the Addition of Vinegar Acid.

Differences in the levels of Lead, Cadmium, due to the simultaneous addition of vinegar can be identified by the MANOVA test. The results of the Manova test can be seen that there are differences in the levels of Lead, Cadmium due to the addition of vinegar with  $F = 128.176$  and  $p = 0.000$  ( $p < 0.05$ ). Differences in the levels of Lead, Cadmium due to the addition of vinegar separately can be identified by the Anova test, so that it is known what heavy metal levels in the rice mussel meat are affected by the addition of vinegar.

### 2. Differences in Lead Levels in Kupang meat due to the addition of vinegar.

Levene's test shows that the lead content data meets the assumption of homogeneity with  $p$  value = 0.059 ( $p > 0.05$ ) meaning the variance is homogeneous, so the ANOVA test can be used. The results of the ANOVA test can be seen that the level of vinegar has an effect on the content of black tin in the meat of the rice kupang. This can be seen from the value of  $F = 6505.801$  and  $p = 0.000$  ( $p < 0.05$ ). Multiple comparison test (Multiple Comparation) to determine differences in lead levels due to the addition of vinegar with different concentrations used the different HSD test can be seen In table 3. . Different test of the effect of vinegar acid levels on lead levels. The table above can be explained that: There is a significant difference in lead levels between the control group and the group that received the addition of 5%, 15% and 25% acetic acid. There was no significant difference in lead levels between the groups that received the addition of 5% acetic acid and 15% acetic acid. There is a significant difference in lead levels between the group that received the addition of 25% acetic acid and the group that received the 5% and 15% acetic acid.

### 3. Differences in Cadmium Levels in Kupang meat due to the addition of vinegar.

Levene's test shows that the Cadmium content data meets the assumption of homogeneity with a value of  $p = 0.123$  ( $p > 0.05$ ) meaning the variance is homogeneous, so the ANOVA test can be used. From the ANOVA test, it can be seen that the level of vinegar has an effect on the Cadmium content of the rice mussel meat. This can be seen from the value of  $F = 10711$  and  $p = 0.000$  ( $p < 0.05$ ). Multiple comparison test (Multiple Comparation) to determine differences in Cadmium levels due to the addition of vinegar with different concentrations used the HSD difference test can be seen in Table 4

Table 4. Different test of the effect of vinegar acid levels on Cadmium levels

Tukey HSD		
Vinegar acid	N	Subset
	1	2
Higt level	4	.01850
Moderate level	4	.02425
Low level	4	.03350
control	4	1.25350
Sig.		.325      1.000

The table above can be explained that: There is a significant difference in cadmium levels between the control and the group that received the addition of 5%, 15% and 25% acetic acid. There was no significant difference in lead levels between the groups that received the addition of 5%, 15% and 25% vinegar.

#### Heavy metal content in mussels.

The results obtained the average levels as follows: Lead 1,281 ppm, Cadmium 1,254 ppm. FAO/WHO states that the permissible content of heavy metals in the bodies of marine animals that can be consumed by humans for lead is not more than 1 ppm and for cadmium not more than 0.1 ppm. Decree of the Director General of Drug and Food Control No. 03725/B/SK/VI/99 concerning the maximum limit of metal contaminationin food states that the permissible level for Cadmium is 1 mg/l while for Lead is 2 mg/l.Meanwhile, according to SNI, the maximumpermissible level for black lead is 2 mg/kg, and for Zn 100 mg/kg. Based on the foregoing, it means that mussel from Sidoarjo has been contaminated with heavy metals, lead and cadmium. The high content of heavy metals Lead and Cadmium in mussels is due to the nature of the low mobility of mussels and settles in a certain habitat, namely in sediments or the seabed, so that mussels can be used as bioindicators of pollution in a waters. Through the food chain, heavy metals in the water can enterthe body of the rice mussel because it is a "filter feeder" animal. The greater the levels of heavy metals in the environment and the longer the kupang is in the place, the greaterthe levels of heavy metals in the body of the kupang. Kupang absorbs heavy metals in three ways, namely from the form dissolved in water, absorbed in the mucus layer that covers the body and through the food chain.

Heavy metal is a pollutant that is dangerous because it is toxic in large quantities and can affect various aspects of the waters, both ecological and biological aspects. There are many types of metals that pollute marine waters, including cadmium (Cadmium) and lead metal (Pin). These two metals are combined with mercury (Hg) as the big three heavy metals which have the highest level of danger to human health, besides that these three metals are most often found as metal contaminants in nature<sup>4</sup>. Namely poisoning in the circulatory system, namely poisoning the red blood formation system, nervous system such as headaches, kidney system, digestive system such as stomach ulcers and kidney and digestive system disorders production<sup>5</sup>.

Lead intake limit based on the provisions of ADI (Acceptable Daily Intake) 200 – 300 g/day, for Cadmium 25 – 60 g/day. The lead content of rice kupang kupang is 1,281 mg/kg, thus the kupang that can be consumed by humans is 156-234 grams/day.The Cadmium content of mussel is 1.254 mg/kg, thus the mussel that can be consumed by humans is 19.9 – 47.8 mg/kg. Based on the ADI provisions, it shows that the levels of Cadmium in foods that are allowed for human consumption are lower than the levels of Lead, this indicates that Cadmium heavy metal is more dangerous than Lead Heavy metal. Based on this, the intake limit for rice mussels that may be consumed by the public is based on the levels of Cadmium present in mussels, which are 19.9 – 47.8 mg/day, so that the people of Sidoarjo and

surrounding areas consume mussel meat in a day the maximum allowed is Rp. 19.9 – 47.8 mg/day. This is to avoid the negative effects of heavy metals in the human body, especially those who consume rice mussel meat.

#### Differences in Lead, Cadmium Levels Due to the Addition of Vinegar Acid

The chemical properties of an element (lead, cadmium) are mainly determined by the number and arrangement of electrons in the outermost electron shells surrounding the atomic nucleus and to a lesser extent by the number of electrons in the deeper shells. These electrons in turn depend on the number and types of particles, protons and neutrons in the nucleus. Atoms with one, two or three electrons in the outer shell tend to lose these electrons and become positively charged ions due to the excess protons in the nucleus called cations because the ions move towards the cathode (negative electrons).

This study showed the ability of vinegar to reduce heavy metal levels in the meat of rice kupang. The results showed that there were significant differences in the levels of lead, cadmium and control due to vinegar treatment (5%, 15% and 25%).

The difference in acid concentration will affect the decrease in Lead in Kupang meat. The results of the data indicate that the higher the acid concentration, the more acid will bind to metal ions so that the lower the lead content in red mussel meat. Citric acid ( $C_6H_8O_7$ ) is a tricarboxylic acid where each molecule contains a carboxyl group and one hydroxyl group bonded to a carbon atom, citric acid is very effective as a metal ion binder and is easily soluble in water<sup>6</sup>. While EDTA ( $C_6H_{16}N_2O_8$ ) has two nitrogen atoms and four in the carboxylate group. This compound is a hexadentate ligand (there are six lone pairs of electrons) which will usually form a strong chelate complex<sup>7</sup>.

#### Differences in lead levels due to the addition of vinegar

The results showed that there was a significant difference in the levels of black lead in the meat of the kupang between the addition of 25% vinegar and 5% and 15% vinegar. There was no significant difference between the addition of 5% vinegar and 15% vinegar. This shows that the concentration of 25% vinegar is able to bind lead ions and form the most lead acetate. Lead acetate is a compound that is difficult to dissociate. The decrease in lead due to vinegar treatment ranged from 90.1 to 95.7%<sup>8</sup>

The decrease in lead metal content is caused by acidic solutions that can damage the metal protein complex bonds. Almost all of the metal ions contained in the organism's body are bound to proteins<sup>8</sup>. The decrease in lead metal can be caused by the release of the protein metal complex bonds so that the metal ions come out of the mussel meat. Metal ions found in the body of organisms are almost all bound to proteins. Complex interactions between metal ions and proteins are metalloenzymes and metal proteins. Metalloenzymes are proteins that bind to metals in the body or proteins that bind strongly to metal ions to form stable bonds. Metal proteins are proteins that bind to metals in the body and their metal ions are easily exchanged with other proteins<sup>6</sup>.

To obtain Lead 2+ 6 stable coordination bonds, a ligand capable of forming a 5-6 corner ring with a metal is needed. The metal ion is coordinated with the electron pair of the EDTA nitrogen atoms as well as the four carboxyl groups present in the EDTA molecule. Generally, EDTA is used to treat poisoning by Hg and Lead and EDTA is used as a preservative to prevent spoilage caused by heavy metals in fish and shellfish products so that they can last for several days<sup>7</sup>.

## Differences in Cadmium levels due to the addition of vinegar

The results of this study showed that there was no significant difference in cadmium levels in rice kupang meat due to the addition of 5% vinegar acid, 15% vinegar acid and 25% vinegar acid. Thus the difference in concentration does not affect the levels of cadmium in the meat of the kupang. In the presence of vinegar, cadmium will be released and bind to OH- ions present in vinegar to form cadmium acetate compounds<sup>9</sup>. The decrease in cadmium due to vinegar treatment ranged from 97.3% - 98.5%. The decrease in cadmium was higher than the decrease in lead, this happened because in addition to vinegar, the presence of Zn also affected the decrease in cadmium levels. Cadmium is one type of heavy metal that is dangerous because this element is at high risk for blood vessels. When Cadmium enters the body, most of it will collect in the kidneys, liver and some are excreted through the digestive tract. Cadmium can affect the smooth muscle of blood vessels directly or indirectly through the kidneys, as a result of which there is an increase in blood pressure<sup>10</sup>.

Some of the effects caused by cadmium exposure are kidney damage, liver, testes, immune system, nervous system and blood. The danger of this element is actually when humans consume (whether inhaled or eaten) in large enough quantities. Because in fact, cadmium is not easy to get out in the body. This metal will continue to accumulate in the body. And when it reaches high levels, it will attack the body's organs, especially the kidneys and lungs.

## IV. CONCLUSION

Based on the results of the analysis and interpretation, it can be concluded that in an effort to reduce/eliminate the levels of Lead, Cadmium in mussels, it can be done in an easy, simple and effective way, namely by using vinegar acid by soaking mussels with vinegar acid as much as 5% (5 g 100 g mussel for 1 hour, because using 5% alone can reduce lead levels by 90% and reduce cadmium levels by 97%.

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# Explore Exploratory Experiences Arising from Labor Trauma with Severe Pre-Eclampsia / Eclampsia in Public Health Center Bendo Pare Kediri District

Shinta Dyah Laksana<sup>1</sup>, Astrichia Djesintha Pah<sup>2</sup>

<sup>1</sup> Lecturer in Nursing Undergraduate Study Programs STIKes Bhakti Mulia

<sup>2</sup> Undergraduate Nursing Students

\*Corresponding Author E-mail: oshinshinta82@gmail.com

## ABSTRACT

**Keywords:** Exploration, Rising, Childbirth Trauma, Severe Eclampsia/ Eclampsia

**Background:** Mothers who have childbirth complications have the perception that the action taken during labor was a painful action that affects the mother's response such as resignation, fear, confusion, worry or anxiety and panic that can cause labor trauma. The purpose of this study was to explore exploratory experiences arising from labor trauma with severe pre-eclampsia / eclampsia.

**Methods:** The research design was phenomenological with exploratory approach. The population was all mothers who experienced labor trauma with severe pre-eclampsia / eclampsia, a sample of 3 respondents with purposive sampling technique. Data collection techniques used interviews.

**Results:** The results showed the process of rising from the trauma of childbirth was obtained through support, love, attention and hope from her husband and family. With support and love and hope, the mother can rise from the trauma of childbirth that has been experienced. So that the mother can sincerely accept her kofrat as a woman who really has to undergo it all.

**Conclusions:** Pregnant and childbirth mothers are encouraged to recognize, understand the emergence of trauma situations that can lead to postpartum depression, efforts to overcome or prevent more severe disorders that affect the relationship between mother and baby with the closest person.

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## I. INTRODUCTION

Childbirth was an important event and experience in a woman's life. These events have different meanings for each woman and her family. For women, childbirth was a pleasant transition phase to a new stage in their life cycle or can cause stress and disappointment (1). Nurlaela's research results (2), found that mothers who had childbirth complications had the perception that the action taken during labor was a painful action that affected the mother's response such as resignation, fear, confusion, worry or anxiety and panic. In addition, the effects of actions taken during labor can also cause the mother to feel a real threat to her health or to her baby so that it can cause prolonged trauma.

The effects of Post Traumatic Stress Disorder (PTSD) on postpartum mothers which include their relationships with children and partners have not been thoroughly examined (3). Case studies and qualitative research indicate that the possibility of postpartum PTSD will affect the relationship of mothers with those closest to them. For example in a qualitative PTSD postpartum study, mothers reported that it affected their feelings, that they lacked patience, felt irritable, anxious, depressed, felt difficult to sympathize with others, felt isolated from their babies, feared of subsequent pregnancies that had an impact on social relations (4).

According to data from Word Health Organisation (WHO) in 2016, maternal mortality rates are 380-210 per 100,000 live births. These results indicate that many mothers die during childbirth,

causing many mothers to feel anxious and stressed during labor. For mothers who experience a difficult delivery will have a more negative impact on their psychology and even may indicate trauma in labor. The delivery process has a different meaning in every woman, if the delivery process was very painful according to the mother, then often the mother will feel anxious or excessive fear can even trigger panic. Moreover, if the delivery process was outside the expectation of the mother, this can trigger excessive disappointment, guilt, anxiety, and fear during and after the delivery process.

Based on Ayers's (5) study of PTSD postpartum mothers, participants reported physical problems, moods and behavior, social relationships, and fear of labor. Mothers say negative effects on relationships with their partners include their inability to accept sexual relations again because they still feel like victims of their husband's behavior. In addition, postpartum trauma will also trigger disagreement and blame for the birth events that are experienced. Mothers and babies are also very affected by labor trauma. Mothers report initial feelings of rejection of the baby in which the mother was always reminded of the birth with a complication every time she sees her baby, so the mother will choose to avoid the baby or worry about the baby's presence.

Postpartum trauma was an important issue that affects the psychological well-being of mothers who have just given birth, especially for mothers who have a history of difficult births. A mother who has just given birth will have feelings filled with sadness, loss of hope, sleep disturbance, lethargy, inability to concentrate

According to Beck (4), mothers describe typical symptoms of PTSD in their changing roles as mothers. A flashback and avoidance of something that will remind the mother of labor trauma. A mother with severe symptoms of PTSD after childbirth experiences anxiety caused by trauma, anger, and emotional release from their partner and baby, and fear of future pregnancy. Postnatal PTSD has extensive and negative effects on relationships and results in sexual dysfunction, decreased intimacy, negative emotions, and poorer communication between partners as well as rejecting or worrying too much with their babies (7).

A study of mothers who have had difficult birth experiences and how mothers can emerge from labor trauma states that their babies are reminders of their traumatic births, so that mothers avoid anything related to trauma. The trauma of childbirth will overshadow the mother so that to rise from trauma, especially to get pregnant again requires time alone. Mothers need adequate support to rise from labor trauma (4).

Support from the family was very helpful for post partum mothers with difficult labor to reduce the psychological stress they face. But not all post partum mothers with difficult births are in an ideal situation and have the support of their husbands and families. Social problems such as conflicts with family or husband, lack of economic conditions, lack of information obtained can provide its own pressure. In addition, the people around the post partum mothers with difficult labor which gave restrictions in the form of certain myths also made this new mother uncomfortable so that she felt as the person being blamed, restrained and not understood. Especially if this new mother does not get support from a partner, it will be very difficult to rise from trauma.

Husband was a person who was physically and emotionally needed by his wife after childbirth. The husband was the first person to give attention and support to the wife, provide love and make the wife feel protected physically and spiritually. The support provided by the husband will reduce the worries, fears or panic that arise after giving birth. The support obtained by new mothers allows them to express what was felt, so that the husband and wife are able to solve the problems and fears faced after the birth together (7).

This study wanted to find out how the experience of postpartum mothers about childbirth with complications, the meaning of the support given by the husband to his wife and hopes for the mother after recovering from trauma. Based on the above problem, the researcher was interested in conducting research on: "Exploration of the Rising Experience of Trauma to Labor with Severe Eclampsia / Eclampsia at UPTD Puskesmas Bendo, Pare Subdistrict, Kediri Regency".

## II. METHOD

This study was exploratory in character and there were no treatments to the research subjects, and it was not made to be tested. Aims to describe (describe) important events that occur systematically and put more emphasis on factual data. The phenomenon was presented as it was without manipulation, so it does not require a hypothesis (8)

The data collection method that will be used in this study was a semistructured interview (9), which was included in the in-depth interview or in-depth interview technique followed by recording. This in-depth interview activity aims to explore hidden phenomena related to the experience of mothers arising from the trauma of childbirth with complications. Before the interview was conducted, the researcher makes a list of questions as a guide in the field that was not offensive., Can experience changes according to the situation and field conditions. Each participant will be given a predetermined time limit. All participants' answers will be recorded by cellphone (which can record) and recorded in a notebook by stationery.

### III. RESULTS AND DISCUSSION

#### Participant Characteristics

##### 1. Overview of Participant Characteristics

Tabel 1 Overview of Participant Characteristics

Participant	Initial Name	Gender	Age of Participants	Education	Occupation	Status in the Family
P1	Mrs. J	Female	20 years	High school	Housewife	Biological mother
P2	Mrs. L	Female	32 years	High school	Trader	Biological mother
P3	Mrs. W	Female	30 years	Trader	Lecturer	Biological mother

Tabel 2 Overview of Participant Characteristics

No	Characteristics	Participant Code		
		P1	P2	P3
1	Initial Name	Mrs. J	Mrs. L	Mrs. W
2	Gender	Female	Female	Female
3	Age	20 years	32 years	30 years
4	Interview time	July 11-12 2019	July 13-14 2019	July 15-16, 2019
5	Interview Place	Home	Home	Home
6	Residence	Bendoasri- Bendo	Bendoasri- Bendo	Bendoasri- Bendo
7	Type of childbirth	SC	SC	SC
8	Type of complication	Severe preeclampsia	Severe preeclampsia	Severe preeclampsia
9	childbirth	1st child	1st child	1st child

##### 2. Overview of Research Implementation

Table 3 Schedule the time and place of the interview

Participant	Tanggal	Tempat
P1	July 11-12 2019	Participant's House
P2	July 11-12 2019	Participant's House
P3	July 11-12 2019	Participant's House

## **Descriptions of in-depth interviews about experiences arising from labor trauma**

### **1. Understanding the causes of childbirth trauma**

Table 4 Keywords on themes that cause childbirth trauma

No	Key sentence	Keywords	Category	Theme
P1	- Can this survive or not? Me or my baby - what traumatized me was the pain	- congratulations - me or baby	- doubt the safety of the baby and himself	- feel the threat to the safety of the baby and himself
P2	- For the baby, it's not stressful, but I'm the stress - his body is already out afraid he will drink	- I'm the one stressed - amniotic leak		
P3	- I'm not strong enough, actually - DJJ baby had no time	- no longer able - DJJ is missing		
P1	my tension is high too, 150		Feeling labor pain	
P2	- Dizzy - numb yes - swollen - positive urine protein	Signs and Symptoms of preeclampsia		
P3	-it's not frivolous Do you want to pee or not?			

### **2. Impact of childbirth trauma on infants**

Table 5 Impact of childbirth trauma on infants

No	Participant Code	Key sentence	Keywords	Category	Theme
1	P1	- In the beginning I could not accept him - She just cried but she rarely picked up - My mother is the one who takes care of it	- Not received yet - Rarely Carrying - Take care of the mother	Not willing to accept a baby	Not able to play the role of mother
2	P2	- So he cried, I just kept quiet, so the one who held the child was my husband-in-law - I don't want to sleep with my baby	- Cared for by the family - Don't want to sleep with the baby	Not ready to care for babies	
3	P3	- I don't want to be close to my own baby - Sometimes he is carrying but does not want to sleep at night with him	- - Don't want to be close to the baby		

### 3. How to rise from the trauma of childbirth (love, attention, husband support and hope)

No	Participant Code	Key sentence	Keywords	Category	Theme
1	P1	My husband also said it's OK ... because when I gave birth I wasn't the person who felt sick, so he felt sorry too	The husband understands the condition	Attention husband	Feeling loved by husband and family
2	P2	<ul style="list-style-type: none"> <li>- What else can I do, miss, women are by nature</li> <li>- Gpp, sis, already sincere</li> <li>- My husband is more protective about food, he said not to be like the first</li> </ul>	<ul style="list-style-type: none"> <li>- Ikhlas accepts</li> <li>- The husband gives</li> <li>- love and attention</li> </ul>	Love	
3	P3	<ul style="list-style-type: none"> <li>- It's normal now, miss</li> <li>- Yes, I am happy to have a husband, there is a family who helps me with it</li> </ul>	- Husband and family support	Family support	

#### The results of the validity of the source interview

The source interview results are used to obtain the validity of the data, the researcher uses triangulation techniques by utilizing other sources, which means the researcher uses data collection techniques using interviews from a variety of different sources (people and times). Triangulation of time triangulation collaboration sources was used by researchers for the validity of data obtained from Participants.

The results of the interview researchers obtained interview data about the experience of arising from labor trauma with severe pre-eclampsia / eclampsia. Participant one (P1) who became the source was a mother who had severe preeclampsia, Participant one (P2) who was made a source was a mother who had severe preeclampsia and Participant three (P3) who was made a source was a mother who had severe preeclampsia. Based on the results of interviews of mothers (P1, P2 and P3) by presenting an explanation and giving notes on the results of interviews of each Participant (P1, P2, P3) obtained similarity and suitability and the data are mutually supportive with the results of interviews that have been conducted by researchers on Participants ( P1, P2 and P3). Thus it can be concluded that the data was valid.

#### Mother's understanding of the causes of childbirth trauma

Based on participants' understanding of their experiences of the causes of childbirth trauma. The first, second and third respondent (P1, P2 and P3) said that the increased blood pressure before delivery will have an impact on labor, the increase in blood was marked by dizziness, numbness, swelling, and positive urine protein. Some of these things cause a slow labor and cause maternal anxiety and stress during labor. Stress and anxiety are due to the safety of the baby, pain during childbirth, the implementation of SC, amniotic leakage, examination with the fingers and the DJJ of the baby which had disappeared in an instant. Some of the symptoms of anxiety / stress if not treated immediately will have an impact on labor trauma.

According to the theory there are several factors that can cause a person to experience trauma.

Biological factors that can reverse symptoms of post partum depression are hormonal factors. When a woman was pregnant with the hormone estrogen, progesterone was quite high. In addition to the two hormones mentioned above, there was one hormone that was high during pregnancy, the endorphin hormone. This endorphin hormone stimulates the emergence of feelings of pleasure and comfort during pregnancy. However, a few minutes after the baby was born, the hormones estrogen and progesterone will drop dramatically replaced with the emergence of the hormone prolactin. Likewise with the endorphin hormone which decreases dramatically and can cause moodiness accompanied by changes in a person's mood to change. (10, 11).

Psychological conditions during pregnancy can also trigger symptoms of childbirth trauma after giving birth. Women who experience stress during pregnancy due to marital problems, feelings of sadness or unhappiness in the pregnancy experienced can cause stress during pregnancy. Stress during pregnancy will affect the relationship between mother and fetus, becoming less close. This causes the mother to pay less attention to the condition of the fetus, and lack of preparation for birth properly. Conditions like this, will usually affect the condition of the mother after giving birth (12)

Mothers with postpartum trauma stated that they felt they were not treated properly by health workers, only treated as a lump of meat or only as participants who wanted to be asked for their data. There was no action to reduce the pain that was felt so that they feel they want to end this suffering even by dying (4, 5). The above happened due to the lack of communication between health workers and women giving birth, so some mothers felt as if they were not considered to be there and did not have control over the delivery process, which made them feel anxious and anxious. Of course not all people experience trauma in labor, there are several factors that can cause a person to experience labor trauma. Beck (4) categorizes three factors that can cause labor trauma, namely factors during pregnancy, labor conditions and subjective factors of mothers during labor.

Based on the facts and theories, it can be concluded that participants can name the causes of the trauma they experienced. This was known by participants based on the experiences experienced by mothers during the birth process, so participants can explain the causes of labor trauma. Experience was important in influencing participants' insights, with the experience gained, participants can describe the causes of labor trauma based on experience during labor. Based on this there was no gap between theory and research results.

### **Impact of childbirth trauma on infants**

Based on the results of the study note that the impact of childbirth trauma in infants occurs because of the history of labor where the pain experienced during labor. This has an impact on baby care, where several impacts arise among others: the mother does not want to accept her baby, the mother chooses to sleep alone in the room, baby blues occur, the mother does not want to sleep with her baby even to the point that the mother does not want to be close to the baby.

Based on Ayers's (5) study of PTSD postpartum mothers, participants reported physical problems, moods and behavior, social relationships, and fear of labor. Mothers say negative effects on relationships with their partners include their inability to accept sexual relations again because they still feel like victims of their husband's behavior. In addition, postpartum trauma will also trigger disagreement and blame for the birth events that are experienced. Mothers and babies are also very affected by labor trauma. Mothers report initial feelings of rejection of the baby in which the mother was always reminded of the birth with a complication every time she sees her baby, so the mother will choose to avoid the baby or worry about the baby's presence.

According to Beck (4), mothers describe typical symptoms of PTSD in their changing roles as mothers. A flashback and avoidance of something that will remind the mother of labor trauma. A mother with severe symptoms of PTSD after childbirth experiences anxiety caused by trauma, anger, and emotional release from their partner and baby, and fear of future pregnancy. Postnatal PTSD has extensive and negative effects on relationships and results in sexual dysfunction, decreased intimacy, negative emotions, and poorer communication between partners as well as rejecting or worrying too much with their babies (4).

Based on the facts and theories, the impact of labor trauma impacts on the relationship between mother and baby, where in the first weeks after delivery the mother does not want to sleep with the baby and also does not want to hold the baby because every time she sees the baby it will lighten all labor experienced mother

### **How to rise from the trauma of childbirth (love, attention, husband support and hope)**

Based on the results of the study note that the process of rising from the trauma of childbirth was obtained through support, love, attention and hope from her husband and family. With support and love and hope, the mother can rise from the trauma of childbirth that has been experienced. So that the mother can sincerely accept her kofrat as a woman who really has to undergo it all.

Husband was a person who was physically and emotionally needed by his wife after childbirth. The husband was the first person to give attention and support to the wife, provide love and make the wife feel protected physically and spiritually. The support provided by the husband will reduce the worries, fears or panic that arise after giving birth. The support obtained by new mothers allows them to express what was felt, so that the husband and wife are able to solve the problems and fears faced after childbirth together (7).

Based on the facts and theories, it can be concluded that the role of a husband was very important in helping a mother rise from the trauma of childbirth. A husband was a true friend to share stories and provide love to his wife, especially when the wife experiences an unpleasant event. A wife will more easily discuss personal problems with her husband than talking to others. The role of the husband who already understands the process of labor when he was beside his wife who was giving birth was very helpful in strengthening the mother in achieving pain and fear that arise.

### **IV. CONCLUSION**

Increased blood pressure before delivery will have an impact on labor, increased blood pressure was characterized by dizziness, numbness, swelling and positive urine protein. Some of these things cause a slow labor process and cause anxiety and maternal stress during labor. The stress and anxiety are due to the baby's safety, pain during childbirth, the implementation of SC, amniotic leakage, finger examination and infant DJJ which were absent. Some of the symptoms of anxiety / stress if not treated immediately will have an impact on labor trauma.

Problems / obstacles experienced during the process of arising from trauma, which was located in the history of labor that was marked by pain during labor. The impact of childbirth trauma on infants occurs because of the history of labor where the pain experienced during labor. This has an impact on baby care, where several impacts arise among others: the mother does not want to accept her baby, the mother chooses to sleep alone in the room, baby blues occur, the mother does not want to sleep with her baby even to the point that the mother does not want to be close to the baby. The process of arising from the trauma of childbirth was obtained through support, love, attention and hope from husband and family. With support and love and hope, the mother can rise from the trauma of childbirth that has been experienced. So that the mother can sincerely accept her kofrat as a woman who really has to undergo it all

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# Effectiveness of Tui Na Massage in Increasing Appetite Infants Aged 1-5 Years in The Work Area UPTD Puskesmas Bendo Kediri Regency

Astri Yunita<sup>\*1</sup>, Silfia Sekar AMES<sup>2</sup>, Yunita Wori Hana<sup>3</sup>

<sup>1</sup>Maternity, Midwifery, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>2</sup>Maternity, Nursing, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>3</sup>Maternity, Nursing Student, STIKes Bhakti Mulia, Kediri, Indonesia

\*Corresponding Author E-mail: astrinipongyunita07@gmail.com

## ABSTRACT

**Keywords:** *tui na massage, appetite, toddler*

**Background:** Problems that often occur in toddlers were reduced appetite in toddlers that can cause growth and development disorders such as decreased endurance, sleep disturbance, impaired balance and coordination also the child becomes aggressive, impulsive and stunting. The purpose of this study was to determine the effectiveness of tui na massage in increasing appetite in infants aged years.

**Methods:** The design used in this study was pre-experimental with the One Group Pretest-Posttest Design approach. The population of all toddlers aged 1-5 years with underweight in the Working Area of UPTD Puskesmas in Kediri Regency was 222 children. The purposive sampling technique obtained a sample of 16 respondents. This research instrument used observation.

**Results:** The results showed that prior to treatment it was known that most of the respondents (62.5%) had sufficient appetite whereas after being treated most of the respondents (62.5%) had a good appetite. Wilcoxon test results obtained p value = 0.001 and the level of error ( $\alpha$ )= 0.05, so  $p < \alpha$ , then  $H_0$  was rejected and  $H_1$  was accepted, meaning tui na massage was effective in increasing appetite in toddlers aged 1-5 years.

**Conclusions:** Tui Na Massage is a more specific massage technique to overcome the difficulty of eating in toddlers where the more routine the tuina massage, the blood circulation to the spleen and digestion will be more smooth so that it can increase the child's appetite.

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## I. INTRODUCTION

Some terms are used to describe the difficulty of eating in children, such as pickiness (United States) and faddiness (English), which means picky eating. Picky Eating or just wanting certain foods is a normal process that often occurs in toddlers and will not last long. Some problems that often occur are reduced appetite in infants that can cause growth and development disorders such as decreased immune system, sleep disturbance, impaired balance and coordination, also the child becomes aggressive, impulsive and stunting (1). Some impacts due to nutrient intake are not optimal, among others; children with stunting (short) and wasting (thin) so that children are classified as below the red line (BGM), death, often sick, brain development is hampered, anger and aggression are not controlled, excessive anxiety or fear and cognitive impairment (2).

Children under five years old (toddlers) are an age group that is vulnerable to nutrition and health. At this time the child's immune system is still not strong, so it is susceptible to infectious diseases. In addition, children also often have bad eating habits, namely children often do not want to eat or decreased appetite, causing decreased nutritional status and child development and growth disturbed (3).

According to WHO (2017) the number of malnourished sufferers in the world reaches 104

million children and the state of undernutrition is still the cause of one third of all causes of child death worldwide. South Asia is the region with the highest prevalence of malnutrition in the world, which is 46% then sub-Saharan Africa 28%, Latin America 7% and the lowest is in Central, Eastern Europe, and the Commonwealth of Independent States (CEE / CIS) by 5%. UNICEF reports that as many as 167 million pre-school-aged children in the world who suffer from underweight are mostly in South Asia.

The occurrence of short toddlers or commonly referred to as stunting is one of the nutritional problems experienced by toddlers in the world today. In 2017, 22.2% or around 150.8 million children under five in the world experienced stunting. However, this figure has decreased when compared with the stunting rate in 2000 which was 32.6%. In 2017, more than half the stunting toddlers in the world came from Asia (55%) while more than a third (39%) lived in Africa. Of the 83.6 million stunting toddlers in Asia, the largest proportion came from South Asia (58.7%) and the lowest proportion in Central Asia (0.9%) (Ministry of Health, Republic of Indonesia, 2018). Based on data from the East Java Provincial Health Office in 2017 that 2.45% of children under five are BGM.

Data obtained from the District Health Office of Kediri shows, in 2017 the prevalence of under-fives who have body weight below the red line KMS (Card Towards Health) is as much as 0.9% or as many as 526 toddlers and 1005 infants experiencing undernourishment or around 5.45%. Based on measurements of body weight according to age (BB / U) in 2013 it was found 17 children under five experienced malnutrition and in 2017 the number increased to 23 children (District Health Office of Kediri, 2018).

Based on the results of a preliminary study at UPTD Puskesmas Bendo, Kediri Regency. In 2018 there were 250 (80%) under-fives and 125 (50%) for under-fives ill due to difficult eating, decreased appetite and decreased body weight, and lack of maternal knowledge about nutritional fulfillment in infants, for those below the Red Line (BGM) there is 1 person (0.5%), there are 124 healthy toddlers (30%). Whereas this year up to March 2019 there were 20 children who were included in the Lower Line Red Line baby category (BGM).

Impaired spleen and digestive function is the most dominant cause in children with decreased appetite. Chronic gastrointestinal function disorders such as food allergies, food intolerance, celiac disease. The reaction of the food intersection seems to be the main cause of these disorders. This can be seen with the emergence of the problem of decreased appetite (1). Some other indicators as a sign of decreased appetite in toddlers are: difficulty chewing, sucking, swallowing, vomiting or spitting out food that has entered the mouth, playing food or eating for a long time, do not want to put food in the mouth or close the mouth tightly, spewing or spilling food, dismissing bribes, disliking a lot of food variations, and unusual eating habits (4).

The problem of decreased appetite that is not immediately overcome can result in delays in growth and development due to nutritional deficiencies and behavioral disorders in children. In addition, the problem of decreased appetite that lasts a long time will cause a decrease in family work productivity. Decreased appetite experienced by children will result in the nutritional status of children, one of the problems that will be faced is stunting. Stunting is a chronic nutritional problem in toddlers characterized by shorter height compared to children of the same age. Children who suffer from stunting will be more susceptible to disease and as adults at risk of developing degenerative diseases. The impact of stunting is not only in terms of health but also affects the level of intelligence of children (5).

Overcoming the existing problems requires the guidance of guidance (coaching) in families where families arrange a balanced menu according to type and portion. Families are introduced to the nutritional value contained in each food, good processing methods, frequency of eating and portion size. Families are guided in making a balanced menu based on family abilities. Special portion sizes of rice carbohydrates are converted into cups owned by the family. The knowledge and skills possessed are applied to children with malnutrition, the family can compile a balanced menu and be practiced according to economic conditions but not yet in proportion. Each family is also taught how to assess the nutritional status of children. The expected goal is to be able to assess family members so that they can regulate children's eating patterns. Families do not yet know the portion and size of food for school-age children (2)

In addition efforts to overcome the decrease in appetite can be done by pharmacological

and non-pharmacological. Efforts with pharmacology include administering miltivitamins and other micronutrients. Whereas non pharmacology includes herbal / herbal drinks, massage, acupressure, and acupuncture (6). Massage and acupressure are methods that have been around for a long time, but it is very rarely done in providing care to toddlers, in the community children only get massage from new age to 40 days or if there are other muscle problems (7). Nowadays it has been developed from baby massage techniques, namely Tui Na massage. One of the classifications of Tui Na massage is Tuina manipulation where an improved version of Tui Na massage and this type includes manipulations such as massaging, rolling, pressing, picking, and relaxing the affected area / pain. This massage is done by sliding massage techniques (Effleurage or Tui), massaging (Petrissage or Nie), tapping (tapotement or Da), friction, pulling, rotating, shaking, and vibrating a certain point so that it will affect the body's energy flow by holding and pressing the body in certain body parts. Tui Na Massage is a more specific massage technique to overcome the difficulty of eating in infants by accelerating blood circulation in the spleen and digestion, through modification of acupuncture without needles, this technique uses emphasis on the body's meridian points or energy flow lines so that it is relatively easier to do compared to acupuncture (1).

## II. METHOD

Design is all the processes required in planning and conducting research. The design used was a pre-experimental design with "One Group Pretest-Posttest Design" (8). Design Models are:

T1	X	T2
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Information :

T1 = Child's appetite before Tui Na massage therapy

X = treatment (Tui Na massage therapy)

T2 = Child's appetite after Tui Na massage therapy

Research instruments are tools or facilities used by researchers in collecting data so that their work is easier and the results are better, in the sense that they are more accurate, complete and systematic, so that they are more easily processed (9). The instrument used in data retrieval uses observation sheets and interviews. Observation, namely an observation includes the activity of loading attention to an object that uses all the senses. Interview is a method of collecting data by directly interviewing the respondents surveyed (11). Data analysis technique used to test differences in appetite before and after Tui Na massage therapy using the Wilcoxon test with  $\alpha = 0.05$ .

## III. RESULTS AND DISCUSSION

### 1. General Data

Table 1 General Data Characteristics of Respondents

No	General Data of Respondents	Amount	Percentage
Age of Child			
1	1 years	3	18,8%
2	2 years	6	37,5%
3	3 years	5	31,2%
4	4 years	2	12,5%
5	5 years	0	0,0%
		16	100%
Child Gender			
1	Male	9	56,2%
2	Female	7	43,8%
		16	100%

No	General Data of Respondents	Amount	Percentage
Mothers age			
1	< 20 years	0	0,0%
2	20-35 years	14	87,5%
3	> 35 years	2	12,5%
		16	100%
Mothers education			
1	No school	0	0,0%
2	Elementary school	0	0,0%
3	Middle school	5	31,2%
4	High school	9	56,3%
5	University	2	12,5%
		16	100%
Mothers Job			
1	Farmers	1	6,2%
2	Swasta/Wiraswasta	4	25,0%
3	Civil servants	2	12,5%
4	Hausewife	9	56,3%
		16	100%
Information			
1	Received	15	93,8%
2	Never	1	6,2%
		16	100%
Resources			
1	Electronic Media	12	80,0%
2	Print Media	3	20,0%
3	Health workers	0	0,0%
		15	100%
Massage Implementation			
1	Routine	13	81,2%
2	Not Routine	3	18,8%
		16	100%

Based on table 1 it is known that from 16 respondents almost half the respondents were 2 years old namely 6 respondents (37.5%), most respondents were male, 9 respondents (56.2%), almost all mothers aged 20-35 years as many as 14 respondents (87.5%), most respondents had a high school education of 9 respondents (56.3%), most respondents worked as housewives as many as 9 respondents (56.3%), almost all respondents had received as much information 15 respondents (93.8%), almost all respondents received information from electronic media as many as 12

respondents (80.0%) and almost all respondents routinely did tui na massages as many as 13 respondents (81.2%).

## 2. Special Data

Table 2 Tabulation of Frequency of Appetite Joining Before and After Tui Na Massage Therapy in the Work Area of UPTD Puskesmas Bendo, Pare Subdistrict, Kediri Regency in 2019

No.	Appetite	Tui Na's massage			
		After f	After %	Before f	Before %
1	Less	6	37,5%	0	0,0%
2	Enough	10	62,5%	6	37,5%
3	Well	0	0,0%	10	62,5%
	Total	16	100%	16	100%

Based on table 2 it is known that prior to treatment it is known that most of the respondents (62.5%) have sufficient appetite whereas after being treated most of the respondents (62.5%) have good appetite.

Table 3 Results of Wilcoxon Analysis Effectiveness of Tui Na Massage in Increasing Appetite in Toddlers Aged 1-5 Years in the Work Area of UPTD Puskesmas Bendo District of Kediri in 2019

No.	Variable	N difference	$\alpha$	P
1.	Appetilte Pre Test – Post Test	Positif = 14 Negatif = 0	0,05	0,001
2.	N = 16	Ties = 2		

Based on data analysis using Wilcoxon test results obtained p value = 0.001 and the level of error () = 0.05, so  $p < \alpha$ , then  $H_0$  is rejected and  $H_1$  is accepted meaning tui na massage is effective in increasing appetite in toddlers aged 1-5 years at Working Area of UPTD Puskesmas Bendo, Kediri Regency.

## IV. DISCUSS

### 1. Identification of Appetite in Toddlers Aged 1-5 Years Before Given Tui Na Massage Therapy in the Work Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

Based on the results of the study note that before being given treatment from 16 respondents most of the respondents experienced sufficient appetite that is as much as 10 respondents (62.5%).

According to Nasar (2015), eating problems associated with the clinical nutrition field of children are all things related to the inability of infants or children to consume the amount of food they need naturally and naturally by using their mouth voluntarily. Appetite or appetite is usually interpreted as a sense of pleasure or desire caused by food stimulation, in the form of aroma or appearance, and the decision to choose certain foods. Good appetite for babies will turn out to be less good when they reach the age of preschool so that it can make parents worry. Factors that influence children's patterns and appetite in the form of family environment, social trends, mass media, peers, when sick, drugs (12).

Based on general data of respondents it is known that almost half of respondents were 2 years old namely 6 respondents (37.5%). This is in accordance with research conducted by Welasasih. Et.al. (13) at this age (1 - 3 years) many lifestyle changes occur, including changes in eating patterns from what was originally ASI shifted toward solid food, some toddlers begin to have difficulty eating, while toddlers have begun to interact with unhealthy environment. Experts classify the age of the toddler as a stage of development of children who are quite susceptible to various diseases, including diseases caused by lack or excess intake of certain

types of nutrients (5).

According to the researchers' assumptions that the characteristics of eating a 2-year-old child can already distinguish the good or bad taste of food and no longer breastfeeding with his mother. For that we need an explanation from parents about the benefits of food that must be eaten so as to reduce the unpleasant taste of food. At this age children need special training and coaching to develop optimal eating skills so that problems / eating disorders do not arise in the future.

Based on the results of the study, it was found that most respondents were male, 9 respondents (56.2%). This result is in line with the results of Sudibyo and Mulyani's (2014) study which states that eating difficulties are more experienced by boys than girls, because boys are more active than women, so more men have difficulty eating than in women.

Based on this, the researchers assumed that a boy would be more active than a girl, so that a boy would experience an appetite problem because he would rather play than eat.

## 2. Identification of Appetite in Toddlers Aged 1-5 Years After Being Given Tui Na Massage Therapy in the Work Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

Based on the results of the study note that after treatment of 16 respondents most of the respondents have a good appetite as many as 10 respondents (62.5%).

Tui na is a pure treatment technique using hands, so it does not require sedation or anesthesia. This procedure is usually carried out in an outpatient treatment clinic. Tui Na massage is done by sliding massage techniques (Effleurage or Tui), massaging (Petrissage or Nie), tapping (tapotement or Da), friction, pulling, rotating, shaking, and vibrating certain points so that it will affect the body's energy flow by holding and pressing the body on certain body parts. Tui Na Massage is a more specific massage technique to overcome the difficulty of eating in toddlers by accelerating blood circulation in the spleen and digestion, through modification of acupuncture without needles, this technique uses emphasis on the meridian points of the body or energy flow lines so that it is relatively easier performed compared to acupuncture (14).

General data of respondents regarding age is known that almost all mothers aged 20-35 years as many as 14 respondents (87.5%). According to Nursalam (15), the more age enough, the level of ability and strength of a person will be more mature in thinking and working. In terms of trust, someone who is more mature will be more trusted and in this case also relates to the experience and maturity of the soul.

This shows the tendency of the influence of age on the implementation of tui na massage. The 20-35 year age group is an adult age group so that in determining everything things have been thought out and will think more rationally with many considerations first. This also affects the implementation of tui na massage in children.

Based on general data of respondents it is known that the majority of respondents had a high school education of 9 respondents (56.3%). The higher a person's education, the easier it is to receive information so that the more knowledge he has, the less education will hinder the development of one's attitude towards values or things that are introduced (15).

Based on this, the researcher assumes that with adequate education, mothers can understand the benefits of tui na massage to increase appetite in children under five.

Based on general data of respondents it is known that the majority of respondents work as housewives as many as 9 respondents (56.3%). According to Nursalam (15) Work is a necessity that must be done primarily to support his life and the lives of his family. Work is not a source of pleasure, but rather is a way to make a living that is boring, repetitive and many challenges.

Mothers as workers tend to devote more time and attention to work, while housewives (not working) tend to have more free time. The amount of free time available so that housewives can attend every counseling from health workers who are organized in the surrounding environment and can do regular tuina massages on children.

Based on the characteristics of the implementation of the massage it is known that almost all respondents routinely perform tui na massage which is as many as 13 respondents (81.2%). It is said routinely if massage is done 1 set of therapy is equal to 1 x therapeutic protocol per

day, for 6 consecutive days including 8 movements. It is said not to do routinely if not every day or in 1x the protocol of massage not all movements are performed (16).

Tui Na Massage is a more specific massage technique to overcome the difficulty of eating in infants by accelerating blood circulation in the spleen and digestion, through modification of acupuncture without needles, this technique uses emphasis on the body's meridian points or energy flow lines so that it is relatively easier to do . Based on this, the more routine the implementation of tuina massage, the circulation of blood to the spleen and digestion will be more smooth so that it can increase the child's appetite.

Based on the circumstances at the time of the study, sometimes when doing the movements the two children do not want it so that parents have difficulty in completing the massage to completion. This is why massage is not included in the routine category

### **3. Identification of Appetite in Toddlers Aged 1-5 Years After Being Given Tui Na Massage Therapy in the Work Area of UPTD Puskesmas Bendo, Kediri Regency in 2019**

Based on the results of the study note that after treatment of 16 respondents most of the respondents have a good appetite as many as 10 respondents (62.5%).

Tui na is a pure treatment technique using hands, so it does not require sedation or anesthesia. This procedure is usually carried out in an outpatient treatment clinic. Tui Na massage is done by sliding massage techniques (Effleurage or Tui), massaging (Petrissage or Nie), tapping (tapotement or Da), friction, pulling, rotating, shaking, and vibrating certain points so that it will affect the body's energy flow by holding and pressing the body on certain body parts. Tui Na Massage is a more specific massage technique to overcome the difficulty of eating in toddlers by accelerating blood circulation in the spleen and digestion, through modification of acupuncture without needles, this technique uses emphasis on the meridian points of the body or energy flow lines so that it is relatively easier performed compared to acupuncture (14).

General data of respondents regarding age is known that almost all mothers aged 20-35 years as many as 14 respondents (87.5%). According to Nursalam (15), the more age enough, the level of ability and strength of a person will be more mature in thinking and working. In terms of trust, someone who is more mature will be more trusted and in this case also relates to the experience and maturity of the soul.

This shows the tendency of the influence of age on the implementation of tui na massage. The 20-35 year age group is an adult age group so that in determining everything things have been thought out and will think more rationally with many considerations first. This also affects the implementation of tui na massage in children.

Based on general data of respondents it is known that the majority of respondents had a high school education of 9 respondents (56.3%). The higher a person's education, the easier it is to receive information so that the more knowledge he has, the less education will hinder the development of one's attitude towards values or things that are introduced (15).

Based on this, the researcher assumes that with adequate education, mothers can understand the benefits of tui na massage to increase appetite in children under five.

Based on general data of respondents it is known that the majority of respondents work as housewives as many as 9 respondents (56.3%). According to Nursalam (15) Work is a necessity that must be done primarily to support his life and the lives of his family. Work is not a source of pleasure, but rather is a way to make a living that is boring, repetitive and many challenges.

Mothers as workers tend to devote more time and attention to work, while housewives (not working) tend to have more free time. The amount of free time available so that housewives can attend every counseling from health workers who are organized in the surrounding environment and can do regular tuina massages on children.

Based on the characteristics of the implementation of the massage it is known that almost all respondents routinely perform tui na massage which is as many as 13 respondents (81.2%). It is said routinely if massage is done 1 set of therapy is equal to 1 x therapeutic protocol per day, for 6 consecutive days including 8 movements. It is said not to do routinely if not every day or in 1x the protocol of massage not all movements are performed (16).

Tui Na Massage is a more specific massage technique to overcome the difficulty of eating in infants by accelerating blood circulation in the spleen and digestion, through modification of acupuncture without needles, this technique uses emphasis on the body's meridian points or energy flow lines so that it is relatively easier to do . Based on this, the more routine the implementation of tuina massage, the circulation of blood to the spleen and digestion will be more smooth so that it can increase the child's appetite.

Based on the circumstances at the time of the study, sometimes when doing the movements the two children do not want it so that parents have difficulty in completing the massage to completion. This is why massage is not included in the routine category

## V. CONCLUSION

Before being given treatment, almost half of the respondents (62.5%) experienced sufficient appetite. After being treated, most respondents (62.5%) have a good appetite. Tui na massage is effective in increasing appetite in toddlers aged 1-5 years in the UPTD Work Area of Puskesmas Bendo, Kediri Regency.

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# The Relationship of Exclusive Assessment with Stunting Events in Children Aged 2-5 Years in Uptd Ngadi Health Center, Kediri District

Sulistyo Dewi Wahyu Rini<sup>1</sup>, Hakim Tobroni HR<sup>2</sup>, Ahmad Hanapi<sup>3</sup>

<sup>a</sup> Pediatric Nursing, Midwifery, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>b</sup> Pediatric Nursing, Nursing STIKes Bhakti Mulia, Kediri, Indonesia

<sup>c</sup> Pediatric Nursing, Nursing Student, STIKes Bhakti Mulia, Kediri, Indonesia

sulistyodewi@gmail.com

## ABSTRACT

**Keywords:**  
Exclusive Breastfeeding  
Genesis Stunting

**Background:** Stunting is a condition of the body that is short by age to exceed the SB deficit -2 below the standard median of length or height according to age. The incidence of stunting is influenced by several factors, one of which is breastfeeding. Breastfeeding less than 6 months can increase the risk of stunting in infants. Objective: To determine the relationship of exclusive breastfeeding with the incidence of stunting in children aged 2-5 years at UPTD Ngadi Health Center, Kediri District.

**Methods:** This study is a correlational study using the case control method. The population of this study was all mothers and children aged 2-5 years in UPTD Ngadi Health Center Kediri Regency as many as 130, the sample in this study was 30 respondents. Data analysis uses univariate analysis and bivariate analysis.

**Results:** The results of research on exclusive breastfeeding variables were mostly not exclusive breastfeeding as many as 17 respondents (56.7%), and the variables on the incidence of stunting were mostly not stunting as many as 17 respondents (56.7%). The analysis of this study has a p-value of 0.007 smaller than 0.05 which means there is a significant relationship between exclusive breastfeeding and the incidence of stunting in children aged 2-5 years in the working area of the Ngadi district health center.

**Conclusions:** There is a relationship between exclusive breastfeeding and the incidence of stunting in children aged 2-5 years. The results of this study make input for mothers to provide exclusive breastfeeding for children to avoid stunting.

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## I. INTRODUCTION

Stunting was a short body condition according to age to exceed the deficit of -2 SB below the median standard length or height for age, it was known that all problems in children were short, starting in the process of fetal growth and development in the womb until the age of 2 years. The stunting condition itself was still ranked fifth in the world. The incidence of stunting was influenced by several factors, one of which was breastfeeding. Breastfeeding for less than 6 months can increase the risk of stunting in toddlers.

The incidence of short toddlers or commonly called stunting was one of the problems experienced by toddlers in the world today. In 2017, 22.2% or around 150.8 million children under five in the world were stunted. However, this figure has decreased when compared to the stunting rate in 2000, which was 32.6% according to Joint Child Malnutrition Estimates, 2018.

In 2017, more than half of stunted children under five in the world came from Asia (55%) while more than a third (39%) lived in Africa. Of the 83.6 million stunted children under five in Asia, the highest proportion came from South Asia (58.7%) and the lowest proportion in Central Asia

(0.9%).

Data on the prevalence of stunting under five collected by the World Health Organization (WHO), Indonesia was the third country with the highest prevalence in the Southeast Asia region / South-East Asia Regional (SEAR). The average prevalence of stunting under five in Indonesia in 2005-2017 was 36.4% according to Joint Child Malnutrition Estimates, 2018.

However, based on the 2017 Nutrition Status Monitoring (PSG), children under five who experienced stunting were recorded at 26.6%. This figure consists of 9.8% in the very short category and 19.8% in the short category. The first 1,000 days were actually the golden age of babies but in fact there were still many toddlers aged 0-59 months who actually experience nutritional problems.

The incidence of stunting in East Java Province in 2016 was below the national figure of 26.1%, an increase compared to 2015 which was 17.6% (East Java Provincial Health Office, 2016). While the data in 2016 in the City of Kediri, namely in 2015 from 22.6 there was an increase to 26.7% in 2016 who experienced stunting. The data in Kediri Regency in 2015 was 14.0%, an increase to 29.4% (Kemenkes RI, 2017). Based on a preliminary study, data obtained from the Public health center Ngadi, namely the number of stunting children aged 2-5 years as many as 103 children.

Data from the Ministry of Health noted that the number of Early Breastfeeding Initiation (IMD) in Indonesia increased from 51.8% in 2016 to 57.8% in 2017. Despite the increase, this figure was still far from the target of 90%. The same increase also occurred in the rate of exclusive breastfeeding, from 29.5% in 2016 to 35.7% in 2017. This figure was also very small considering the important role of exclusive breastfeeding in children's lives.

The low number of breastfeeding mothers was motivated by the lack of awareness of a mother on the importance of breastfeeding for child growth. The problem was that education was inadequate, the lack of knowledge fails to filter various information that a mother receives.

According to the National Team for the Acceleration of Poverty Reduction (TNP2K), stunting was caused by various factors such as poor parenting patterns including feeding in the first 2 years after birth, lack of access to health services during pregnancy and after delivery, lack of family access to nutritious food, and limited access to clean water and sanitation (TNP2K, 2017). In addition, socio-economic conditions also affect the incidence of stunting (1). According to research conducted in Jember, there were several factors related to the incidence of stunting such as maternal education, family income, mother's knowledge of nutrition, exclusive breastfeeding, age of complementary feeding, levels of zinc and iron adequacy, history of infectious diseases and genetic factors (2).

Low Birth Body (LBW) was an important factor that can affect stunting, wasting, and underweight in children aged 6-24 months. In addition, maternal education, sources of drinking water and unsafe sanitation also have a close relationship with the incidence of stunting. Another factor that also influences was the status of exclusive breastfeeding, this was in accordance with research conducted by Tiwari et al., (2014) that there was a significant relationship between exclusive breastfeeding and the incidence of stunting in toddlers. Other research shows that the socioeconomic level of a child's family has a significant impact on growth and development. At all ages, children from upper and middle class families were taller than families from low economic strata .

Stunting has long-term effects such as decreased quality of life, health and economy, while reduced cognitive abilities and mental development were also other impacts on children who experience stunting (3). Based on research conducted by Picauly and Toy in 2013 in Kupang City, stunting children in general have less learning achievement, which was 41.18% and every decrease in nutritional status in height according to age (TB/U) of children was 1 elementary school, then learning achievement children will decrease by 0.444. Children who experience stunting in the first 2 years after birth will cause health problems, low achievement in school and increase the risk of degenerative diseases (4).

Stunting can be prevented through feeding infants focused on the first 1000 days of life (5). Based on the results of the study, optimal feeding can prevent infant mortality by around 13% (WHO, 2013). Feeding infants aged 0-6 was sufficient with breast milk (ASI) without any additions (exclusive breastfeeding). Starting at the age of 6 months, it was permissible to give complementary foods to breast milk (MP-ASI) but continue to be accompanied by breastfeeding until the age of 2 years (WHO, 2017).

Exclusive breastfeeding for the first 6 months of life supports the growth and development of babies and can protect babies from various diseases such as pneumonia, respiratory and digestive tract infections and so on (American Academy of Pediatrics, 2012). The results of the study by Kumar and Singh (2015) showed a decrease in the trend of stunting, wasting, and underweight in children who were exclusively breastfed. According to a study in Malawian, infants who were exclusively breastfed were 1.08 cm taller and 0.46 kg heavier than infants who were not exclusively breastfed. The study of Kramer et al (2012) showed that there was an increase in body length of 1 mm / month in infants aged 9-12 months who were exclusively breastfed for 6 months compared to infants who were breastfed only for 3 months. According to Hendra's research (2013), babies who were not exclusively breastfed were 4 times more likely to experience stunting than babies who were exclusively breastfed. The results of this study were in line with research by Rohmatun (2014) that there was a significant effect on the incidence of stunting in infants who were not exclusively breastfed, which was 61.7%.

The government carries out programs to prevent and reduce the prevalence of stunting directly (specific nutrition interventions) and indirectly (sensitive nutrition interventions). Specific nutrition intervention efforts were focused on the first 1,000 days of life (HPK, namely pregnant women, breastfeeding mothers, and children 0-23 months. Sensitive nutrition interventions include sanitation and the environment, health insurance, poverty alleviation, family planning, and education). The realization of these efforts was through examination of pregnant women in the form of integrated Antenatal Care (ANC) and receiving minimum service standards, Stipulation of government regulations regarding Early Initiation of Breastfeeding (IMD) and Exclusive Breastfeeding, Posyandu 5 every month, and health promotions. However, the ongoing efforts have not been able to reduce the incidence of stunting, on the contrary, the prevalence has increased.

According to WHO, an area experiences nutritional problems, especially stunting if the incidence was more than 20% (Ministry of Health, 2018). The incidence of stunting in an area indicates that there was a nutritional disorder that has lasted for quite a long time (WHO, 2010). Therefore, it was necessary to carry out specific interventions, namely improving nutrition in the first 1000 days of life, one of which was encouraging exclusive breastfeeding (TNP2K, 2017).

Based on the problems above, the researchers were interested in researching the relationship between exclusive breastfeeding and stunting in children aged 2-5 years at the Public health center Ngadi, Kediri Regency.

## II. METHOD

Research design was something that was very important in research, allowing maximum control of several factors that can affect the accuracy of a result (6). The research design used in this study includes a correlational research design. Correlational research was to examine the relationship between variables. Researchers can search, explain a relationship, estimate and test based on existing theories. Correlative relationship refers to the tendency that variations in one variable were followed by variations in other variables (6).

The correlational approach used with a case control design was that the researcher measures the dependent variable first, while the independent variable was traced retrospectively to determine whether there were factors (independent variables) that play a role (6). The variables in this study were exclusive breastfeeding (as the independent variable) and stunting (as the dependent variable).

The population in this study were all children aged 2-5 years with stunting in the working area of Public health center Ngadi as many as 103 patients while the sample was obtained as many as 30 respondents using purposive sampling technique.

The data collection instrument in this study used a questionnaire as a data collection tool. Questionnaire was an instrument for collecting data or operationalizing information in the form of items or questions.

Bivariate analysis uses cross tables to highlight and analyze differences or relationships between two variables. Testing whether there was a difference / relationship between the variable of exclusive breastfeeding and the incidence of stunting in children aged 2-5 years using Chi Square analysis, with a significance level of  $\alpha = 0.05$

### III. RESULTS AND DISCUSSION

#### General Data

Table 1 Characteristics of respondents based on mother's age, mother's occupation, mother's education, child's gender and child's age

Characteristics	Category	f	%
Age	20 - 25 years	10	33.3
	>25 - 30 years	16	53.3
	>30 - 35 Years	4	13.3
	Total	30	100
Jobs	Civil servant	7	23.3
	housewife	17	56.7
	Merchants	6	20
	Total	30	100
Education	Primary School	2	6.7
	Junior high school	8	26.7
	High school	9	30
	University	11	36.7
	Total	30	100
Child gender	Male	15	50
	Female	15	50
	Total	30	100
Child age	2-3 years	15	50
	>3-4 years	7	23.3
	>4-5 years	8	26.7
	Total	30	100

Based on Table 1, it can be seen that based on the age of the mother, most of them were more than 25-30 years old as many as 16 people or 53.3%. Based on occupation, most of them were housewives (IRT) as many as 17 people or 56.7%, based on the mother's education at most universities as many as 11 people or 36.7%, based on the sex of children between boys and girls were the same, namely 15 people or 50% and based on the age of the child at most 2-3 years old as many as 15 children or 50%.

#### Special Data

##### 1. Univariate Analysis

##### Exclusive Breastfeeding

Table 2 Exclusive Breastfeeding

Category	N	Percentage (%)
Non exclusivbe	17	56.7
Exclusive	13	43.3
Total	30	100

Source: primary data processed 2019

Based on table 2, it can be seen that exclusive breastfeeding for children aged 2-5 years in the working area of the Public health center Ngadi Kediri Regency, mostly non-exclusive as many as 17 respondents (56.7%).

Based on the results of the study, it can be seen that exclusive breastfeeding for children aged 2-5 years in the working area of Public health center Ngadi Kediri Regency, mostly non-exclusive breastfeeding as many as 17 respondents (43.3%). This non-exclusive breastfeeding can be caused by factors of mother's knowledge, mother's work and mother's psychological factors. The low number of breastfeeding mothers was motivated by the lack of awareness of a mother on the importance of breastfeeding for child growth. The problem was that education was inadequate, the lack of knowledge fails to filter various information that a mother receives.

According to the Indonesian Ministry of Health (5), in general, mothers in rural areas breastfeed their babies, but the results show that the influence of bad habits, such as prelact feeding, was the provision of food and drink to replace breast milk if breast milk has not come out in the first days after breastfeeding, birth. These types of foods, including clear water and honey, can harm the baby's health

and lead to reduced opportunities to stimulate breast milk production as early as possible through baby sucking in nursing mothers. There were also many mothers who do not use colostrum (milk that comes out in the first days), because it was considered not good for baby food or stale milk.

Exclusive breastfeeding for the first 6 months of life supports the growth and development of babies and can protect babies from various diseases such as pneumonia, respiratory and digestive tract infections and so on (American Academy of Pediatrics, 2012). Exclusive breastfeeding was also important because at this age, foods other than breast milk have not been able to be digested by the enzymes in the intestines besides that, the expenditure of food waste cannot be done properly because the kidneys were not perfect (5). The benefits of exclusive breastfeeding were many, starting from increasing immunity, fulfilling nutritional needs, being cheap, easy, clean, hygienic and being able to improve the relationship or inner bond between mother and child.

This study was in line with the research conducted by Fitri (7), entitled The Relationship between LBW and Exclusive Breastfeeding with Stunting Incidence at the Lima Puluh Pekanbaru Health Center. The results showed that the majority of toddlers did not receive exclusive breastfeeding for the first 6 months, namely 55 people (73.3%).

This study also supports Cynthia's research (2019) entitled The Relationship of Exclusive Breastfeeding History with Stunting Incidence in Children aged 12-59 Months at Wangaya Hospital, Denpasar City. The results showed that most of the 57.8% were not given exclusive breastfeeding.

### **Stunting Incidence in Children aged 2-5 years in the working area of Public health center Ngadi, Kediri Regency**

Table 3 Incidence of Stunting in Children aged 2-5 years in the working area of Public health center Ngadi, Kediri Regency

Category	N	Percentage
Stunting	13	43.3
Non Stunting	17	56.7
Total	30	100

Source: primary data processed 2019

Based on table 3, it can be seen that the incidence of stunting in children aged 2-5 years in the working area of the Public health center Ngadi, Kediri Regency, the majority of whom were not stunted were 17 respondents (56.7%), and 13 people experienced stunting (43, 3%).

Based on the results of the study, it can be seen that the incidence of stunting in children aged 2-5 years in the work area of the Public health center Ngadi, Kediri Regency, the majority of the samples were not stunting, as many as 17 respondents (56.7%), and 13 people experiencing stunting (43, 3%).

Stunting was a short body condition according to age to exceed the deficit of -2 SB below the median standard length or height for age, it was known that all problems in children were short, starting in the process of fetal growth and development in the womb until the age of 2 years. If calculated from the first day of pregnancy, the birth of a baby to a child aged 2 years was the period of the first 1,000 days of human life, referred to as the window of opportunity).

Stunting was a growth inhibition caused by in addition to lack of nutrient intake as well as health problems. Stunting was a process that has an impact on children's development starting from the early stages, namely the time of conception to the 3rd or 4th year of a child's life, where the nutritional state of the mother and child was an important factor in the child's growth. Stunting at an early age was associated with the incidence of mental decline at the level of children's intelligence, psychomotor development and good motor skills. It can also reduce the ability to work in adulthood.

Potential factors that influence short events include socioeconomic, family, health services, diet and health status, genetics, exclusive breastfeeding, history of infant birth weight, age appropriateness for complementary feeding, and family education level, as well as food consumption also affect short incident on Baduta. The results of Rosha and Mardani's research that poor people with low education affect their nutritional status, the risk factor associated was the ability to choose and buy food with balanced nutrition. The level of education of fathers and mothers was a strong determinant for the incidence of stunting in children under two in Indonesia and Bangladesh. . Another risk factor was the level of family knowledge, especially mothers, which was an important point in the occurrence of short events in children under two. Mother's knowledge about nutrition will determine the mother's behavior in providing food to her child.

## 2. Bivariate Analysis

Table 4 Relationship between exclusive breastfeeding and stunting in children aged 2-5 years in the working area of Public health center Ngadi, Kediri Regency

Exclusive Breastfeeding	Stunting Insidance						p-value	
	Stunting		Non Stunting		Total			
	f	%	f	%	f	%		
Non exclusive	11	36.7	6	20.0	17	56.7	0,007	
Exclusive	2	6.7	11	36.7	13	43.3		
Total	13	43.3	17	56.7	30	100.0		

Based on Table 4 that the cross tabulation between exclusive breastfeeding and the incidence of stunting in children aged 2-5 years, it can be seen that there were 2 children or 6.7% of exclusive breastfeeding and stunting occurs. The results of the chi square test obtained a p-value of 0.007, smaller than 0.05, which means that there was a significant relationship between exclusive breastfeeding and the incidence of stunting in children aged 2-5 years in the working area of Public health center Ngadi, Kediri Regency.

Based on the cross tabulation, it was known that the cross tabulation between exclusive breastfeeding and the incidence of stunting in children aged 2-5 years can be seen that there were 2 children or 6.7% of exclusive breastfeeding and stunting occurs. The results of the chi square test obtained a p-value of 0.007, smaller than 0.05, which means that there was a significant relationship between exclusive breastfeeding and the incidence of stunting.

According to Indrawati (2016), stunting can be influenced by several factors such as poor nutrition during pregnancy, low birth weight, lack of nutritional intake during toddlerhood, diseases suffered during toddlerhood and not being given exclusive breastfeeding. Toddlers who have normal height can be influenced by several factors such as the nutritional adequacy of toddlers. The nutritional adequacy of children was strongly influenced by the economic status of the family, families with high economic status will tend to be able to meet their nutritional needs properly and can provide more variety of food for children.

The results also showed that there were 2 respondents who were exclusively breastfed and stunting occurred. The results showed that the 2 respondents were born with low birth weight where low birth weight will affect the next child's growth including the child's height. In addition, one of the mothers has a history of SEZ during pregnancy so that the nutritional needs in the womb were not adequately fulfilled and have an effect on subsequent growth and were at risk of stunting. This was in accordance with the theory that exclusive breastfeeding was not the only factor that affects the incidence of stunting, there were other factors such as nutritional intake, infectious diseases, food availability, nutritional status of pregnant women, birth weight, birth length and MP ASI (5).

Stunting can be prevented through feeding infants focused on the first 1000 days of life (Ministry of

Health, 2016). Based on research results, optimal feeding can prevent infant mortality by around 13% (WHO, 2013). 6 was enough with breast milk (ASI) without any addition (exclusive breastfeeding). Starting at the age of 6 months, it was permissible to give complementary foods (MP-ASI) but continue to be accompanied by breastfeeding until the age of 2 years (WHO, 2017).

Breast milk was the best food for babies immediately after birth. According to WHO, exclusive breastfeeding was breastfeeding only for infants up to the age of 6 months without additional fluids or other foods. Breast milk can be given until the baby was 2 years old (Anugraheni & Kartasurya, 2012).

According to WHO, an area experiences nutritional problems, especially stunting if the incidence was more than 20% (5). The incidence of stunting in an area indicates that there was a nutritional disorder that has lasted for quite a long time (WHO, 2010). Therefore, it was necessary to carry out specific interventions, namely improving nutrition in the first 1000 days of life, one of which was encouraging exclusive breastfeeding (TNP2K, 2017).

This was in line with research conducted in Malawian, infants who were exclusively breastfed were 1.08 cm taller and 0.46 kg heavier than infants who were not exclusively breastfed (Kuchenbecker et al., 2015). The study of Kramer et al (2012) showed that there was an increase in body length of 1 mm / month in infants aged 9-12 months who were exclusively breastfed for 6 months compared to infants who were breastfed only for 3 months. According to Hendra's research (2013), babies who were not exclusively breastfed were 4 times more likely to experience stunting than babies who were exclusively breastfed. The results of this study were in line with research by Rohmatun (2014) that there was a significant effect on the incidence of stunting in infants who were not exclusively breastfed, which was 61.7%.

Research by Fitri (7) found that infants who were exclusively breastfed for the first 6 months had a lower risk of stunting. Giving breast milk to babies while giving formula milk can indeed meet the nutritional needs of babies so that their growth was not disturbed, but formula milk does not contain nutrients as well as breast milk so babies were more prone to disease, because the content of substances in breast milk was very different from other substances.

#### IV. CONCLUSION

1. Exclusive breastfeeding for children aged 2-5 years in the working area of Public health center Ngadi, Kediri Regency, mostly non-exclusive as many as 17 respondents (56.7%).
2. The incidence of stunting in children aged 2-5 years in the working area of the Public health center Ngadi, Kediri Regency which became the sample was mostly not stunted as many as 17 respondents (56.7%).
3. There was a significant relationship between exclusive breastfeeding and the incidence of stunting in children aged 2-5 years in the working area of the Public health center Ngadi, Kediri Regency

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# Analyze Multivariate There Was a Relationship Between The Incidence of Stunting Infants Aged 2-5 Years

Endah Susanti<sup>\*1</sup>, Rischar Beny Riswanto <sup>2</sup>, Veronika Ina Kii<sup>3</sup>

<sup>1</sup>Maternity, Midwifery, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>2</sup>Maternity, Nursing, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>3</sup>Maternity, Nursing Student, STIKes Bhakti Mulia, Kediri, Indonesia

\*Corresponding Author E-mail: enzu.bd84@gmail.com

## ABSTRACT

*Keywords:* LBW, Education, Income, Parenting, Maternal nutritional status during pregnancy, Stunting

**Background:** Short toddler problems describe the existence of chronic nutritional problems that were influenced by the condition of the mother/expectant mother, the fetus, and infancy/toddler, included illnesses suffered during infancy and other problems that indirectly affect. The purpose of this study was to analyze whether there was a relationship between the incidence of stunting infants aged 2-5 years in the Ngadi Health Center, Kediri Regency.

**Methods:** The research design was Case Control. The population was all children aged 2-5 years who experienced stunting in Ngadi Health Center as many as 145, samples of stunting and non-stunting children aged 2-5 years were 106 respondents used Simple Random sampling technique. The independent and dependent variables were examined by questionnaire. Data analysis research used the Logistic Regression Statistical Test.

**Results:** The results were obtained from several variables that the most influential factor was LBW. Children born in LBW are 38 respondents who are stunting and 9 stunting. The results of the Multivariate Logistic Regression Statistical Test showed that the LBW variable had a very strong influence with a p-value of 0,000 <0.05, acceptable compared to other variables.

**Conclusions:** The best time to prevent stunting is during pregnancy and the first two years of life and monitoring the growth of toddlers and implementing healthy living behaviors.

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## I. INTRODUCTION

Short toddler problems illustrate the existence of chronic nutritional problems that were influenced by the condition of the mother / prospective mother, the fetus, and infancy / toddler, including illnesses suffered during infancy and other problems that indirectly affect health (1). Stunting describes chronic nutritional status that was chronic during growth and development since early life. This situation was presented with a height z-score by age(TB / U) less than-2 standard deviations (SD) based on growth standards according WHO (Supariasa, 2017).

Stunting prevalence data collected by the World Health Organization (WHO, 2018), Indonesia was included in the third country with the highest prevalence in the Southeast Asia / South-East Asia Regional (SEAR) region. The incidence of stunting in East Java Province in 2016 was below the national rate of 26.1%, an increase compared to 2015 which was 17.6% (East Java Provincial Health Office, 2016). While the data in 2016 in the City of Kediri in 2015 from 22.6 increased to 26.7% in 2016 which experienced stunting. Data in Kediri Regency in

2015, namely 14.0%, increased to 29.4% (Ministry of Health Republic of Indonesia, 2017) Based on a preliminary study conducted on June 11, 2019, data obtained from the Ngadi Health Center were 228 children aged 0-5 years with 228 working areas. While the ages of 2-5 years were 145 children.

## II. METHOD

The method used in this study the correlational approach with the case control design that the researcher takes measurements on the dependent variable first while the independent variable was traced retrospectively to determine the presence or absence of factors (independent variables) that play a role (2). The variables in this study were parenting, education, LBW, maternal nutritional status during pregnancy, and income (as an independent variable) and stunting (as a dependent variable).

Population all children aged 2-5 years who experienced stunting at the Ngadi Health Center were 145 children with Simple Random sampling technique. Samples of stunting and non-stunting children aged 2-5 years were 106 respondents. With data analysis included univariate analysis, bivariate analysis, and multivariate analysis.

## III. RESULTS AND DISCUSSION

Characteristics of respondents known to the total respondents most respondents aged 20-35 years, 65 respondents (61.3%) of a total of 106 respondents. Almost all respondents work as housewife 91 respondents (85.8%) out of a total of 106 respondents. Almost all respondents have low education, namely 81 respondents (76.4%) out of a total of 106 respondents. Almost all respondents earn < regional minimum wage namely 99 respondents (93.4%) of the total 106 respondents.

Table 1. Relationship between Parenting Patterns and Stunting Occurrence of Children 2-5 Years Old in Ngadi Health Center Kabupaten Kediri at 2019 Years

Variabel	Significance	Results
Parenting Stunting Incidence of Children 2-5 Years	P-Value 0,006	= $H_1$ received $H_0$ Rejected

Based on table, it was known that some respondents who have parenting were categorized as good as 24 respondents for stunting and not stunting as many as 38 respondents. While some respondents who have parenting were categorized as less as 29 respondents for stunting and not stunting as many as 15 people from a total of 106 respondents. Obtained parental correlation test results with stunting events obtained Pearson Chi-Square test results p-value 0.006 < 0.05. Because the p-value was less than 0.05, the test decision is  $H_0$  rejected.

Parenting applied by the mother will affect the growth and development of infants because nutritional deficiencies in infancy will be irreversible, so that at this time toddlers need a quality food intake. This was reinforced by research conducted in East Nusa Tenggara that parenting applied by mothers will determine the nutritional status of children under five. The better parenting, the better the nutritional status. Good parenting patterns are reflected by the better food intake given to toddlers. Food intake which was assessed qualitatively was illustrated through the diversity of food consumption. Food diversity reflects a person's level of nutritional adequacy (3, 4).

In this study conducted by Sulistianingsih (5), explained that parenting children were not directly cared for by their parents so that in meeting the daily needs of parents cannot directly monitor toddlers. This relates to the education of parents who do not guarantee the

child gets the right food intake. In accordance with this study it was found that parenting parents significantly related to the incidence of stunting in infants.

Table 2. Relationship between Education and the Stunting Occasion of Children 2-5 Years Old in Ngadi Health Center Kediri Regency at 2019 Years

Variabel	Siignifikansi	Result
Education	P-Value = 0.011	H <sub>1</sub> received
Stunting Incidence of Children 2-5 Years		H <sub>0</sub> Rejected

The respondents who have low levels of education are 47 for those who are stunting and not stunting as many as 37 respondents from a total of 106 respondents. Obtained the results of the education correlation test with the incidence of stunting obtained Pearson Chi-Square test results p-value 0.011 <0.05. Because the p-value was less than 0.05, the test decision was H<sub>0</sub> rejected.

Mother's education will affect her knowledge in parenting. Mother's education is one of the important factors in child development. Because with a good education, the mother can receive all information from outside, especially about how to take good care of children, appropriate nutrition, so that mothers can take care of their children's health, education and so on (6).

Highly educated mothers have a high level of knowledge and have a good mindset that will be easy to receive any information so that they can find information that was important to improve the nutrition of children under five (7).

Table 3. Relationship between LBW and the Stunting Occasion of Children 2-5 Years Old in Ngadi Health Center Kediri Regency at 2019 Year

Variabel	Siignifikansi	Result
LBW	P-Value = 0.000	H <sub>1</sub> received
Stunting Incidence of Children 2-5 Years		H <sub>0</sub> Rejected

Based on table it was known that there were 38 respondents who had babies born in LBW as many as 9 respondents who were stunted and not stunting. While the majority of respondents who have some respondents who have higher education are 1 respondent for stunting and not stunting by 2 respondents. For respondents who have moderate education as many as 5 people for stunting and not stunting as many as 17 respondents. While children under five were not LBW as many as 15 respondents for stunting and not stunting as many as 44 respondents from a total of 106 respondents. Obtained LBW correlation test results with stunting events obtained Pearson Chi-Square test results p-value 0,000 <0.05. Because the p-value was less than 0.05, the test decision was H<sub>0</sub> rejected.

Toddlers who have low birth weight are more at risk of growing stunting than toddlers who have normal birth weight. However, if the toddler receives adequate intake and environmental conditions support the growth and development of children under five, toddlers born with LBW will not affect the child's growth (Hanum, 2019).

According to Proverawati & Ismawati (2010), low birth weight babies can be caused by maternal factors, fetal factors, and environmental factors. Maternal factors include maternal age, birth distance too close, nutritional status, multiple pregnancies, parity, economic status, education, and mother's occupation. Fetal factors that affect LBW were congenital defects and infection in the uterus. Environmental factors were mothers who live in the highlands, were exposed to radiation and were exposed to toxic substances. If the

above factors were not immediately addressed, the LBW rate was likely to increase. But in a study conducted by Wibowo (2008), it was stated that babies born with LBW will gain weight faster as if catching up, whereas non LBW babies generally often grow slowly, this was estimated by the quality and quantity of food and digestive disorders. If a child with low birth weight receives an adequate nutritional intake, normal growth can be caught up. If in the first 6 months a toddler can pursue growth, then it was most likely that the toddler can grow normally (8).

Table 4. Relationship Between Mother's Nutritional Status During Pregnancy with Stunting Occasion of Children 2-5 Years Old in Ngadi Health Center Kediri Regency at 2019 Years

Variabel	Signifikansi	Result
Maternal Nutritional Status When Pregnant	P-Value 0.010	= $H_1$ received $H_0$ Rejected
Stunting Incidence of Children 2-5 Years		

Based on table, it was known that some respondents who had the nutritional status of less chronic energy were 17 respondents for stunting and not stunting by 6 respondents. While respondents who had nutritional status were not less chronic as many as 36 respondents for stunting and not stunting as many as 47 respondents from a total of 106 respondents. Obtained LBW correlation test results with stunting events obtained Pearson Chi-Square test results p-value 0,000 < 0.05. Because the p-value was less than 0.05, the test decision was  $H_0$  rejected. Nutrition during pregnancy greatly affects the growth of the fetus and newborn, including the baby's weight and height. Poor nutritional status in pregnant women causes babies to be born underweight and underweight (TB / U). This can continue until the baby was 2-3 years old. Maternal nutritional status during pregnancy can be determined by weight gain in pregnant women (9).

The nutritional status of pregnant women if nutritional intake was insufficient, if left unchecked will affect weight gain during pregnancy. If the mother does not gain weight, which means experiencing under nutrition, it will have an impact on the baby being conceived because the intake of nutrients needed by the fetus was insufficient, so that the baby can be born with a low body weight and can continue until the toddler. Besides the poor nutritional status of the mother which can cause low body weight also causes height not according to age (7).

Table 5. Relationship between Income and Stunting for Children 2-5 Years Old in Ngadi Health Center Kediri Regency at 2019 Years

Variabel	Signifikansi	Result
Income	P-Value 0.051	= $H_1$ received $H_0$ Rejected
Stunting Incidence of Children 2-5 Years		

Based on table it was known that some respondents who have income  $\geq$  regional minimum wage were 1 respondent who are stunting and not stunting were 6 respondents.

While some respondents who have income < regional minimum wage were 52 respondents for stunting and not stunting as many as 47 respondents from a total of 106 respondents. Obtained the results of the correlation test of income with stunting events obtained Pearson Chi-Square test results p-value 0.051 <0.05. Because the p-value was less than 0.05, the test decision was H0 rejected.

Family income was a factor that influences and determines the need for adequate quality and quantity of food. Family income can be seen from the amount of income that influences the level of food consumption including nutrients. Parents who earn less than the regional minimum wage will increase the incidence of stunting toddlers by 6.5 times compared to parents with more income than the regional minimum wage (5).

In addition, the large number of family members was not beneficial for children. Families that have more members, accompanied by low family income, then family members, especially children, have the opportunity not to get a better intake to meet their body needs. Young children may not be able to compete with other extended family members for food, so they are at risk of malnutrition (10).

#### IV. CONCLUSION

1. Stunting was influenced by many factors. Factors that are often the cause include the factors of parents, children, households and the community, while factors that indirectly influence are access to health care, education, economics, politics, social support, urbanization and conditions of life. There were some adverse effects caused by stunting problems in toddlers. In the short term, stunting can result in disruption of brain development, intelligence, impaired physical growth, whereas in the long term the bad effects that can be caused are decreased cognitive abilities and learning achievement, decreased immunity and easily hurt.
2. Based on the Bivariate analysis in each variable There was a relationship between parenting, education, LBW, maternal nutritional status during pregnancy and income with the incidence of stunting of children aged 2-5 years in the Ngadi Health Center of Kediri Regency.
3. In a Multivariate analysis The most influential factor of several variables was LBW with p-value 0.000 <0.05 and the weakest or smallest variable was maternal nutritional status during pregnancy with p-value 0.237 <0.05.

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# Relationship of Free Speaking Learning Method with The Development of Language Communication to Pre-School Children in Santa Maria Kindergarten Pare Kediri

Febrina Dwi N\*<sup>1</sup>, Dily Ekasari <sup>2</sup>, Maria Oktaviyani Nahak <sup>3</sup>

<sup>1</sup>Maternity, Midwifery, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>2</sup>Maternity, Nursing, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>3</sup>Maternity, Nursing Student, STIKes Bhakti Mulia, Kediri, Indonesia

\*Corresponding Author E-mail: [febrina.d.nurcahyanti@gmail.com](mailto:febrina.d.nurcahyanti@gmail.com)

## ABSTRACT

**Keywords:** *kindergarten children, free speech, language communication*

**Background:** The development of language communication was a basic component found in the development of children. The development of language involves the motorist aspects associated with listening, comprehension, and sound production. This condition has been brought child since birth. This research aims to determinate relationship of free speaking learning method with the development of language communication to pre-school children in Santa Maria Kindergarten Pare Kediri.

**Methods:** The design used in this study was used non-experimental method. The design used in this research was correlation study with cross sectional approach. Samples in this research were kindergarten school students in Santa Maria Kindergarten Pare with 24 respondents with total sampling technique. Data were collected by recorded data from the observation sheets of free speech learning and the development of language communication..

**Results:** From the result of Spearman Rho statistic test,  $p$  value = 0,026  $\alpha < 0,05$  and  $H_0$  was rejected, it means there was influence of free speech learning method with development of language communication. Results obtained from speech observation data (63%) experienced a correct speech improvement while from the analysis of language development data found all respondents (63%) experienced language development

**Conclusions:** Based on the results of the study can be concluded that there is a relationship of free speech learning method with the development of language communication because in talking children using articulation, or words to convey intent. While the language is a communication tool in the child to convey thoughts, feelings and desires.

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## I. INTRODUCTION

The most important phase in the growth and development of children is during infancy and toddlerhood, because at that time the most vital time for parents in building the foundation for growth and development of the baby. One of the important aspects in child development is language development where language development is related to other developments (1). Language development requires several skills, namely speaking, listening, reading, writing, and using sign language. According to Hidayat (2), child development consists of several stages and each stage has its own characteristics. One of the stages of child development is preschool age (4-5 years). Language development involves sensor-motor aspects related to listening activities, comprehension skills, and sound production. This condition has been carried by the child since birth. The next environment that also enriches children's language well is that the development of children in kindergarten is directed so that students are able to express their thoughts using words (3).

The incidence of data from the Kediri District Health Office in 2015 there were 64 toddlers (2.5%) out of 2,564 toddlers who experienced deviations or disorders of growth and development that were not in accordance with age such as speech and language disorders. Detection of Early Growth and Development Intervention (DIDTK) examination year

In 2015 conducted by the Ministry of Health on children aged 0-6 years from 5 regions in East Java Province, data obtained that of the 397 children examined, 45 people or around 11.3% experienced growth and development disorders. Data on language delay in preschoolers according to the 2010 Cochrane Study reported a prevalence of 2.3-19%. Most of the studies found the prevalence of speech delays from 40% to 60%. According to Wahjuni's 2007 research in one kelurahan in Central Jakarta, the prevalence language delay by 9.3% of 214 children under the age of three. Language Development of Pre-School Age Children is known, the delay in language development of preschool-aged children (4-5 years) at Saraswati Gresik Kindergarten in 2009-2010 has increased. Based on the results of a preliminary study on 12 – 01 – 2020 conducted by researchers at the Santa Maria Pare Kindergarten Kediri from 10 children with language communication disorders 6 children (60%) who did not experience language communication disorders 4 children (40%).

The ability to communicate in early childhood is still at a low level, so there are still many languages that must be mastered to be able to communicate well. This can be seen based on observations in the field, children aged 4-5 years, we should easily understand what children are saying, because children's speech should be easily understood by adults even by people who have just met. For example, when the teacher asks the children to come forward to tell their experiences, children, children have not been able to tell in detail (4).

Children's language skills will develop in line with curiosity and high enthusiasm, so that questions arise from children with language skills. Language skills will also continue to increase with the intensity of the child's peers. The child shows an increased interest in aspects of written language, the child likes to recognize words that interest him and tries to write words that are often found. Children also enjoy learning to write their own names or words related to something meaningful to children (5).

This problem needs to be overcome through improving communication skills in children which can be done through the play method. Children's language skills will develop in line with curiosity and high enthusiasm, so that questions arise from children with language skills. The child shows an interest that When they improve on aspects of written language, children like to recognize words that interest them and try to write words that are often found. Children also enjoy learning to write their own names or words related to something meaningful to children (6). Professional educators are needed to achieve these goals. Professional educators are teachers who can understand children's development, guide children, develop and implement learning programs, master methods and are able to provide and master learning media. One way that is done in kindergarten to optimize all aspects of development in children is to use learning media in the form of game tools, because in principle activities in kindergarten are carried out by playing while learning and learning while playing, so that students rejoice in fun learning activities.

Based on the description above, the researcher is interested in conducting research by formulating the title: "The relationship of free speech communication with language development in children aged 4-5 years in Santa Maria Pare Kindergarten"

#### Research purposes

##### 1. General Purpose

The general objective of this study was to determine the relationship between free speech communication and language development in children aged 4-5 Year In Kindergarten Santa Maria Pare 2020?

##### 2. Special Purpose

1. Identify free speech communication with language development in children aged 4-5 years at Santa Maria Pare Kindergarten 2020
2. Identify free speech communication with language development in children aged 4-5 years at Santa Maria Pare Kindergarten 2020.

3. Analyzing the relationship of free speech communication with language development in children aged 4-5 Years At Santa Maria Kindergarten March 2020.

## II. METHOD

Research design is a research strategy in identifying problems before the final planning of data collection. The design used in this study is a correlational analytic design (correlational study) with a cross sectional approach. It is called correlational because this study aims to determine the relationship of free speech communication with language development in children in Santa Maria Pare Kindergarten, Kediri Regency.

## III. RESULTS AND DISCUSSION

### 1. General Data

Table 1. General Data Characteristics of Respondents

No	General Data of Respondents	Amount	Percentage
Age			
1	1 years	7,29%	
2	5 years	17,71%	
100%			
Gender			
1	Male	13,54%	
2	Female	11,46%	
100%			

Table 1. Characteristics of Respondents Based on Talk at Santa Maria Kindergarten in Pare, Kediri Regency.

Based on Table 2, it is known that most of the speaking learning respondents are in the good category as much as 63%, 38% Enough and 0% Less than a total of 24 respondents.

### 2. Special Data

Table 2 Characteristics of Respondents by Language at Santa Maria Kindergarten in Pare, Kediri Regency.

No	Talk	Amount	Percentage
1	Good	15	63%
2	Enough	9	38%
3	Less	0	0%
100%			

Based on Table 2, it is known that most of the speaking learning respondents are in the good category as much as 63%, 38% Enough and 0% Less than a total of 24 respondents..

Table 3 Characteristics of Respondents by Language at Santa Maria Kindergarten in Pare, Kediri Regency.

No	Language	Amount	Percentage
1	Good	15	63%
2	Enough	9	38%
3	Less	0	0%
100%			

Based on Table 3, it is known that most of the respondents in the development of language communication are in the good category as much as 63%, 38% Enough and 0% Less than a total of 24 respondents.

Table 4 Distribution of free speech development in children aged 4-5 years in Santa Maria Kindergarten

No	Language	Amount	Percentage
1	Good	15	63%
2	Enough	9	38%
3	Less	0	0%
			100%

Based on table 4, it is known that most of the respondents have a good distribution of free speech development, which is 63% of the total 24 respondents.

Table 5 Distribution of language development in children aged 4-5 years in Santa Maria Kindergarten in Pare

No	Language	Amount	Percentage
1	Good	15	63%
2	Enough	9	38%
3	Less	0	0%
			100%

Based on table 5, it is known that most of the respondents have good language development, which is 63% of the total 24 respondents.

Table 6 Spearman's rho test results relationship free speech communication with language development at the age of 5 years at Santa Maria Pare Kindergarten.

Correlations

### Correlations

		Free Speech Language	Communication Development
Spearman's rho	Free Speech Language	Correlation Coefficient Sig. (2-tailed) N	1,000 .24 -.452* .026 24
	Communication Development	Correlation Coefficient Sig. (2-tailed) N	-,452* .026 1,000 .24 24

\*. Correlation is significant at the 0.05 level (2-tailed).

Based on table 6, it is known that there is a relationship between free speech communication and language development at the age of 4-5 years in Santa Maria Pare Kindergarten. ( $p = 0.026 < 0.05$  then  $H_0$  is rejected and  $H_1$  is accepted).

#### IV. DISCUSS

##### 1. Speak Communication

The results of this study showed that all respondents who learned to speak freely experienced an increase in speech such as listening, reading and using sign language. In the opinion of researchers, this is because children can speak well. Then the child will get used to and interact with friends freely. The results of the study of 24 respondents found that most of the respondents were 4 years old (29%), 5 years old (71%), male (46%), female (54%). Based on table 4.1, it is known that almost all respondents of free speech learning methods are in good category, namely 15 respondents (63%) of a total of 24 respondents.

Speaking is a form of language that uses articulation or words used to convey meaning. Learning to speak includes three separate but interconnected processes, namely pronouncing words, building vocabulary, and forming sentences. The ability to communicate in early childhood is still at a low level, so there is still a lot of vocabulary that must be mastered to be able to communicate well (4).

Every child has their own history and backgrounds that are often very different, one of which is the work background of parents, and education also affects communication in children. The social environment is related to communication between children and the surrounding environment.

In the opinion of the researcher, the results of the study showed that most of the respondents had the ability to speak clearly this was due to the role of parents and the school environment so that children could speak and interact well. Education means guidance or assistance given intentionally to students by adults so that they When he becomes an adult, the educational background of parents can influence the mindset of children both formal and non-formal and then also affect the aspirations and expectations of parents for their children.

The results of the study show that almost all respondents free speech learning methods are included in a good category for speech and language development. Communicating is a basic need for every child because it is a social being that must live side by side with each other. Children can express their thoughts using language, so that other people can catch what the child is thinking. Through language, communication between children can be well established so that children can build relationships. Language is considered as an indicator of a child's success. Children who are considered to talk a lot, are sometimes a reflection of intelligent children.

##### 2 Development of Language Communication

Based on table 2, it is known that most of the respondents 15 language development are included in the good category, namely 15 respondents (63%) of the total 24 respondents. Language is a child's understanding and recognition of children and their skills in speaking Indonesian will be useful in the formal education process. (7). Children's independence begins with language development, namely children are able to listen, communicate orally, so that language development goals can be achieved effectively. optimally, efforts are needed in the form of strategies and language development involving sensorimotor aspects related to listening activities, comprehension skills, and sound production, this condition has been carried by children since birth.

It is the environment that further enriches children's language communication well. Children's language development in kindergarten is directed so that students are able to use and express thoughts by using words. The language development is directed at students. Based on language development, children aged 4-5 years have developmental characteristics. language, among others: children like to listen and retell the contents of the story in a simple and young way, Saying their name, gender, and age, mentioning other people's nicknames (friends, brothers, sisters, or relatives they already know) Can repeat children's songs and sing simple songs (3)

From the majority of respondents the development of language communication is included

in the good category, this is due to the existence of a speech learning method. This is caused by learning to speak that is applied in schools so as to form independence in the development of basic communication well, while the independence of respondents is good in terms of research on the development of language communication, which has been implemented well but parents do not provide good examples in communication and language. Children do not properly understand the correct language, the results of research that respondents who have less criteria are caused not to provide support in creating the correct language for children and parents who do not understand must act in response to the demands of children, by allowing and leading to their independence.

#### Research results.

The results of the research on data supporting the independence of language development based on age were obtained by most of the respondents aged 5 years as many as 14 respondents (71%), found that most of the sexes were male, 10 respondents (54%) and female, 14 respondents (64%). Children who are in the pre-school category aged 4-5 years, the first 5 years are called the golden years, children experience a very fast pace of progress. Not only physically but also socially and emotionally. The child is no longer a baby but a person who is in the early process of finding his or her identity, the child has become the forerunner of an adult human. Children are difficult to manage and begin to realize that they are also independent humans. Research conducted by experts confirms the severe statements of their parents, such as, protective treatment of girls and being more permissive of boys in their environment. Doing girls differently is the same as explaining to children these women, that is, they always need someone's protection (Hurlock, 2008).

The results of this study show that the majority of children are 5 years old in speaking and language based on age, this is because the first 5 years of age children experience a very fast pace of progress in various aspects of life, including their independence in communicating and the language applied in the kindergarten environment.

### 3 Analysis of the Relationship of Free Speech Communication with Language Development in Children Age 4-5

Based on table 3, it can be seen that there is a relationship between the free speech learning method and the development of language communication at the age of 4-5 years in Santa Maria Pare Kindergarten. ( $p = 0.26 < 0.05$  then  $H_0$  is rejected and  $H_1$  is accepted)

The development of communication and language can improve good communication in speaking, listening, reading, writing and using sign language. Each stage of a child's growth and development consists of several stages and each stage has its own characteristics, independence to do something in the process of learning to speak well. One of the important aspects in children's development is language development where language development is related to other developments (1). Language development involves sensormotor aspects related to listening activities, understanding skills, and sound production. This condition has been carried by children since birth. The next environment that also enriches children's language well is the development of children in kindergarten is directed so that students are able to express thoughts using words (3).

The influence of children's speech and language skills will develop in line with curiosity and high enthusiasm, so that questions arise from children with language skills. The child shows an increased interest in aspects of written language, the child likes to recognize words that interest him and tries to write words that are often found. Children also enjoy learning to write their own names or words related to something meaningful for children (6). One way that is done in kindergarten to optimize all aspects of development in children is to use learning media in the form of tools, games, because in principle activities in kindergarten are done by playing while learning and learning while playing, so that students rejoice in fun learning activities that make children feel happy.

The influence of free speech learning on the development of language communication, caused by the development of speech in children increasing and being able to interact with their peers and the surrounding environment. Talking helps children to increase children's activities in learning. Correct.

## V. CONCLUSION

Research conducted at Santa Maria Pare Kindergarten on the relationship of free speech communication with language development in children aged 4-5 years at Santa Maria Pare Kindergarten in 2017 can be concluded as follows:

1. All respondents of free speech learning children are 24 respondents (100%), this is because children understand what is applied in kindergarten.
2. Most of the respondents were independent of the development of language communication as many as 24 respondents (100%), this is because the child can apply what he learns while at school and quickly interacts well.
3. There is a relationship between free speech communication and language development in children aged 4-5 years at Santa Maria Pare Kindergarten in 2017,  $P = 0.026 < 0.05$ , the strength of the results of this analysis is 0.452 so it is in the low category, this is because lack of speech learning methods.

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# Analysis of Anxiety on the Choice of Birthing Place During Covid-19 Pandemic in Sepanjang Village, Gondanglegi District, Malang Regency

SuciAnggraeni<sup>a,1,\*</sup>, Eli Dwi Lestari<sup>a,2</sup>, Nuryeny Hidajaturokhmah<sup>a,3</sup>

<sup>1,2,3</sup>Institut Ilmu Kesehatan STRADA Indonesia

<sup>1</sup>sucianggraeni87@gmail.com\*, <sup>2</sup>elidwilestari@gmail.com, <sup>3</sup>nuryenyhidajaturokhmah@gmail.com

\* Corresponding author

## ABSTRACT

*Keywords:*  
Pregnant  
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Place

**Background:** Anxiety and fear were at the top most frequently experienced by pregnant women before delivery. This could also be caused by concerns about the smooth delivery process related to the choice of birthing place. The purpose of this study was to determine the relationship between anxiety and the choice of birthing place during Covid-19 pandemic in Sepanjang Village, Gondanglegi District, Malang Regency.

**Methods:** This research is a quantitative research using correlative analytic research type and the research design used is cross sectional. The population of this study were all third trimester pregnant women in Sepanjang Village who were not confirmed positive for Covid-19, as many as 30 people. The sampling technique used was *total sampling*, with a sample of 30 people. The data analysis technique used was *Chi-Square*.

**Results:** Respondents experienced the most anxiety in the moderate category as many as 12 people (40,0%). Most respondents chose the birthing place at *BPM* (Independent Practice Midwives) as many as 16 people (53,3%). There was a relationship between anxiety and the choice of birthing place during Covid-19 pandemic in Sepanjang Village, Gondanglegi District, Malang Regency ( $p$ -value = 0,000).

**Conclusions:** Pregnant women without anxiety and with mild anxiety prefer the birthing place at *BPM*, while those who experience moderate and severe anxiety prefer the birthing place at Public Health Center and Hospital. The public is expected to consult with health workers regarding the anxiety experienced by health workers.

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## I. INTRODUCTION

On March 11, 2020, WHO declared Covid-19 a pandemic. In the era of the Covid-19 pandemic, it had resulted in a high level of anxiety for pregnant women, especially in the third trimester in choosing a place of delivery for a smooth delivery process later. In Indonesia, maternal mortality and neonatal mortality are still a big challenge and need attention in the Covid-19 disaster situation. In this Covid-19 pandemic situation, there are many restrictions on almost all routine services including maternal and newborn health services. However, pregnant women, maternity, postpartum and newborns must still receive health services that were in accordance with standards. Towards delivery, especially if pregnant women do not get motivation from the environment, especially husbands, anxiety and fear occupy the top most frequently experienced rankings<sup>[1]</sup>. Anxiety could get worse if pregnant women experience fear of changes that occur in their bodies, the condition of the fetus they were carrying and mental readiness to face the birth process. Anxiety and fear of labor and birth increased which became: pain, wounds during childbirth, the health of the baby, the ability to be a responsible mother, and how the relationship with her husband changed. The events experienced become a concern and the minds of pregnant women begin to focus on something that is considered the climax, so that the anxiety and fear experienced by pregnant

women will be intensified before delivery<sup>[2]</sup>. According to Rukiyah her book "Midwifery Care for Pregnancy", states that the gestational age of seven months and over, the anxiety level of pregnant women becomes more acute and intensive as the baby's birth approaches. Towards delivery, especially if pregnant women don't get motivation from the environment, especially husbands, anxiety and fear occupy the top rank<sup>[1]</sup>.

Based on data from *Gugus Tugas Percepatan Penanganan Covid-19* as of September 14, 2020, the number of confirmed Covid-19 patients was 221.523 people. Of the total patients confirmed positive for Covid-19 for the group of pregnant women, there were 4,9% of pregnant women who were confirmed positive for Covid-19 out of 1.483 confirmed cases that had accompanying condition data. While high levels of anxiety could aggravate complications that occur and increase MMR and IMR this was in accordance with research conducted by Trisiani&Hikmawati with a sample of 45 pregnant women respondents who experienced moderate anxiety levels of 52,7% while those who experienced anxiety levels high by 57,8%<sup>[3]</sup>.

Pregnant women, childbirth, postpartum and newborns are also vulnerable targets for Covid-19 infection and this condition is feared to increase maternal and newborn morbidity and mortality. Anxiety of pregnant women, especially the third trimester increases, this could also cause by concerns about the smooth delivery process. According to Magrifoh, factors related to anxiety were knowledge, psychology, economy, experience, family support and husband's support<sup>[4]</sup>. Pregnant women with the age of less than 20 years or more than 35 years were of high risk pregnancy age because abnormalities or disturbances in the fetus could occur, so that it can cause anxiety in the pregnant woman. From the data above, it could be said that pregnant women could experience anxiety before delivery, especially regarding the selection of birth attendants in this case was the place of delivery during the Covid-19 pandemic, therefore this study aims to analyze anxiety on the choice of birthing place during Covid-19 pandemic in Sepanjang Village, Gondanglegi District, Malang Regency.

## II. METHOD

This research is a quantitative research using correlative analytic research type and the research design used is cross sectional. This research uses a research instrument in the form of a questionnaire. The variable of pregnant women's anxiety was measured using the *HRS-A* Questionnaire, while the variable for the choice of birthing place was measured using the Questionnaire for the Choice of Birthing Place. The population in this study were all third trimester pregnant women in Sepanjang Village, Gondanglegi District, Malang Regency who were not confirmed positive for Covid-19, totaling 30 people. The sampling technique in this study was *total sampling* and a sample of 30 people was obtained. The statistical test used was *Chi-Square* test, with a significance limit of 5%, namely if the  $p\text{-value} < 0,05$  then  $H_1$  (hypothesis) was accepted, meaning that there was a relationship between anxiety and the choice of birthing place during Covid-19 pandemic in Sepanjang Village, Gondanglegi District, Malang Regency.

## III. RESULTS AND DISCUSSION

### a. Results

Based on Table 1, almost half of the total respondents in this study were aged 21-25 & 26-30 years, namely 11 people each (36,7%), almost half of the respondents in this study had a senior high school education background, namely 14 people (46,7%), most of the respondents in this study were housewives (*IRT*) as many as 20 people (66,7%), half of the total respondents in this study were 2<sup>nd</sup> pregnant as many as 15 people (50,0%) , almost all respondents in this study stated that they needed to carry out routine Covid-19 checks, namely 28 people (93,3%), most of the respondents in this study stated that they had no special reason for choosing their place of delivery, namely 19 people (63,3%), most of the respondents in this study chose the place of delivery based on personal preference, as many as 19 people (63,3%).

**Table 1. Characteristics of Respondents**

No.	Characteristics of Respondents	Frequency	Percentage(%)
1.	Age		
	21 – 25 years old	11	36,7
	26 – 30 years old	11	36,7
	> 30 years old	8	26,6
2.	Education		
	Elementary School	3	10,0
	Junior High School	9	30,0
	Senior High School	14	46,7
	College	4	13,3
3.	Profession		
	Housewife	20	66,7
	Self-Employed	6	20,0
	Employee	4	13,3
4.	How Many Pregnancy		
	1	11	36,7
	2	15	50,0
	3	3	10,0
	4	1	3,3
5.	Need Routine Covid-19 Checks		
	Yes	28	93,3
	No	2	6,7
6.	Reasons for Choosing a Place of Delivery		
	No Reason	19	63,3
	Covid-19Pandemic	6	20,0
	Minor Complications	4	13,3
	Severe Complications	1	3,3
7.	Who Recommends		
	Personal Choice	19	63,3
	Husband	5	16,7
	Family	6	20,0
	Total	30	100

**Table2. Anxiety of Pregnant Women During Covid-19 Pandemic**

No.	Anxiety Category	Frequency	Percentage (%)
1.	No Anxiety	2	6,7
2.	Mild Anxiety	10	33,3
3.	Moderate Anxiety	12	40,0
4.	Severe Anxiety	6	20,0
5.	Extreme Anxiety	0	0
	Total	30	100

Based on Table 2, almost half of the respondents experienced moderate category anxiety as many as 12 people (40,0%). While respondents who experienced mild anxiety were 10 people (33,3%), respondents who experienced severe anxiety were 6 people (20,0%), respondents who didn't experienced anxiety were 2 people (6,7%), and there were no respondents who are experienced extreme anxiety.

**Table 3. Choice of Birthing Place**

No.	Place of Delivery	Frequency	Percentage (%)
1.	BPM (Independent Practice Midwives)	16	53,3
2.	Public Health Center	9	30,0
3.	Hospital	5	16,7
	Total	30	100

Based on Table 3, most of the respondents chose the place of delivery at *BPM* (Independent Practice Midwives) as many as 16 people (53,3%). While the respondents who chose the place of delivery at Public Health Center were 9 people (30,0%) and those who chose the place of delivery at hospital were 5 people (16,7%).

**Table 4. Analysis of Anxiety on the Choice of Birthing Place During Covid-19 Pandemic**

Anxiety	Choice of Birthing Place						Total	
	BPM		Public Health Center		Hospital			
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
No Anxiety	2	6,7	0	0	0	0	2	6,7
Mild Anxiety	10	33,3	0	0	0	0	10	33,3
Moderate Anxiety	4	13,3	8	26,7	0	0	12	40,0
Severe Anxiety	0	0	1	3,3	5	16,7	6	20,0
Extreme Anxiety	0	0	0	0	0	0	0	0
Total	16	53,3	9	30,0	5	16,7	30	100

*p*-value = 0,000  
Decision = H<sub>1</sub> accepted (0,000 < 0,05)

Based on Table 4, Based on Table 4, the most anxiety of pregnant women before delivery in the mild category and choosing a place of delivery at *BPM* (Independent Practice Midwives) as many as 10 people (33,3%). The results of *Chi Square* test between anxiety variable and the choice of birthing place during Covid-19 pandemic in Sepanjang Village, Gondanglegi District, Malang Regency, obtained a value of *p* = 0,000. This result was smaller than the significant level used, namely  $\alpha = 0,05$ , which means H<sub>1</sub> was accepted, thus there was a relationship between anxiety and the choice of birthing place during Covid-19 pandemic in Sepanjang Village, Gondanglegi District, Malang Regency.

## b. Discussion

### 1. Anxiety of Pregnant Women During Covid-19 Pandemic

Based on the results of the study, it was found that almost half of the respondents (pregnant women in the third trimester) experienced moderate anxiety, as many as 12 people (40,0%) of the total respondents. The results of this study indicate that by using the *HRS-A* questionnaire, third trimester pregnant women experience anxiety with various categories. Anxiety was a natural feeling that can be experienced by pregnant women, especially before childbirth due to increased hormones. According to Stoppard, anxiety was caused by an increase in hormones, almost all pregnant women are more emotional and change moods, act extreme towards trivial events, scream, feel unsure and panic<sup>[5]</sup>. The emergence of feelings of fear and anxiety can be found in various levels of immaturity in emotional and psychosocial development in the context of a person's ability to adjust to something that was being faced<sup>[6]</sup>.

The factors that caused anxiety in pregnant women include the mother's fear of the Covid-19 pandemic. Stated that many mothers experience anxiety before delivery, secondly the fear of pregnant women to be infected and infect others, thirdly the information obtained regarding the management of Covid-19 (health protocol; wearing masks, washing hands, keeping a distance, avoiding crowds and reducing mobilization), prevention and treatment obtained from the mass media, fourth was the saturation

of pregnant women which makes them ignore and even distrust the symptoms of Covid-19. The results showed that most of the respondents in this study had a senior high school education background, as many as 14 people (46,7%). The mother's education level affects the mother's mindset and perspective in dealing with every problem. The higher the level of education, the higher the level of knowledge obtained and ultimately affect the absorption of information, including information about anxiety before childbirth. According to Prawirohardjo, low educational status would cause a person to easily experience stress and anxiety due to the lack of information that the person gets<sup>[6]</sup>. Then, most of the respondents during the study stated that 15 people were pregnant with their 2<sup>nd</sup> child (50%) and 11 people (36,7%) were pregnant with their 1<sup>st</sup> child. This was related to maternal parity. A primigravida where the birth of their first child was something exciting, so they couldn't wait to see and propose their baby. Feelings of fear of the birth process, fear of death and fear of babies born with defects were still felt before the birth of the baby. Which states that facing childbirth was a concrete condition that threatens pregnant women, which causes feelings of tension, worry, and fear.

The results also showed that there were 2 respondents (6,7%) who didn't experience any anxiety at all, which normally during the Covid-19 pandemic situation pregnant women would experience anxiety. The results of the study also showed that the 2 respondents felt that they didn't need to routinely check for Covid-19 at health service facilities. This could due to the lack of information that respondents receive, so that knowledge about the Covid-19 pandemic was also lacking and considers this situation not a serious situation that makes respondents anxious. So it can be explained that the lack of preparation and experience of the labor process which is colored by pain, makes pregnant women experience anxiety which will disrupt the delivery process. In addition, factors from pregnant women such as education can also influence pregnant women in overcoming the anxiety they experience. The absence of maternal anxiety can also have a negative impact because with the mother not feeling anxious, she will also not feel the need for regular checkups, especially in this Covid-19 pandemic situation.

## 2. Choice of Birthing Place During Covid-19 Pandemic

Based on the results of the study, it was found that most of the respondents (third trimester pregnant women) chose the place of delivery at *BPM* (Independent Practice Midwives) as many as 16 people (53,3%) of the total respondents. The results showed that most respondents chose *BPM* as their place of delivery. The research location data shows that Sepanjang Village was a rural area that generally prefers a place to give birth in a midwife. Childbirth in *BPM* was a natural thing. This was because *BPM* has spread to all levels of society including rural areas, besides that it was an affordable place because almost every village has *BPM* and costs are cheaper than hospitals or public health centers. This proves that pregnant women's trust in health services, especially midwives, was quite good, so it needs to be improved.

The Covid-19 pandemic situation also affects pregnant women in choosing a place of delivery. Pregnant women feel that they were more worried about giving birth in hospital and public health center because of their perception of being afraid of getting infected due to the large number of Covid-19 patients in hospital. The high burden of hospitals in handling Covid-19 patients must receive attention, especially for handling childbirth and preventing the risk of Covid-19 transmission<sup>[2]</sup>. In addition, according to Midwifery, inadequate and limited facilities and accessibility of services during the Covid-19 pandemic, especially related to delivery services, lack of staff, or limited access to ambulance facilities that were lacking could affect delivery services during the pandemic. because of the long distances, thereby reduced maternal visits to health facilities.

Then, the results of the study also showed that 20 respondents (66,7%) had status as *IRT* (housewives). The choice of place of delivery was also influenced by the economic status of the parents. Economic status was related to parent's occupation. One of the obstacles for mothers to choose an appropriate place of delivery was influenced by the status of the economic situation where mothers have difficulty obtaining costs that were so inaccessible, so that mothers and their families use any place of delivery. So it can be explained that the Covid-19 pandemic situation causes mothers to be more careful in choosing a place of delivery. In addition, the demographics of Sepanjang Village, which is a rural area, are the reason mothers prefer to give birth at *BPM*. The factor of economic status is also a factor that can influence the mother in choosing the place of delivery.

### 3. Analysis of Anxiety on the Choice of Birthing Place During Covid-19 Pandemic

Based on the results of the study, it was found that the third trimester pregnant women in Sepanjang Village, Gondanglegi District, Malang Regency experienced the most mild anxiety and chose the place of delivery at *BPM* (Independent Practice Midwives) as many as 10 people (33,3%). While the results of data analysis between the anxiety variable and the choice of birthing place during the Covid-19 pandemic in Sepanjang Village, Gondanglegi District, Malang Regency. According to *Chi-Square* statistical test with an error rate of  $\alpha = 0,05$ , the  $p\text{-value} = 0,000$  was obtained. The results of  $p\text{-value} = 0,000 < 0,05$  means  $p < \alpha$ , which means  $H_1$  was accepted, there was a relationship between anxiety and the choice of birthing place during Covid-19 pandemic in Sepanjang Village, Gondanglegi District, Malang Regency.

The results also showed that there were 5 respondents (16,7%) with severe anxiety and chose the hospital as the place of delivery. 2 of the 5 respondents had mild complications, 2 respondents chose the hospital because of the Covid-19 pandemic situation, and 1 respondent had severe complications. Most of the studies that have been conducted on Covid-19 and its relationship to pregnancy have focused on the physical effects of the pandemic on infected mothers and their possible transmission. Although there was not much evidence to suggest that Covid-19 could have had an impact on pregnant women or the fetus in the womb, it was important not to ignore the emotional involvement of pregnant women during the Covid-19 pandemic because the mental health of mothers could be associated with short-term and long-term risks to them or their children, both physical health and psychological health. The type of anxiety felt by the mother was the influence of the virus on pregnancy and choosing the place of delivery during a pandemic<sup>[12]</sup>.

The results of this study were in line with research conducted by Ermawati, namely there was a relationship between the level of anxiety facing childbirth with the choice of place of delivery<sup>[7]</sup>. Anxiety was a factor that affects the choice of place of delivery, besides that there were also other factors that influence the choice of place of delivery such as the quality of health services, economic status, education level and parity so that pregnant women who experience severe anxiety levels do not necessarily choose a place of delivery at the hospital. This study was in accordance with research Warganingsih, pregnant women chose health workers as birth attendants due to a sense of security for the safety and health of pregnant women and their babies<sup>[13]</sup>. The anxiety of pregnant women in the third trimester before delivery can be a factor that can influence mothers in choosing a place of delivery. The Covid-19 pandemic situation can trigger anxiety so that respondents are more selective in choosing a place of delivery. But anxiety is not the only factor that can influence, there are still other factors, both internal and external factors.

## IV. CONCLUSION

The conclusion of this study was that pregnant women in Sepanjang Village, Gondanglegi District, Malang Regency experienced the most anxiety in the moderate category, namely 12 people (40,0%), pregnant women in Sepanjang Village, Gondanglegi District, Malang Regency, mostly chose the place of delivery at *BPM* (Independent Practice Midwives) as many as 16 people (53,3%), there was a relationship between anxiety and the choice of birthing place during Covid-19 pandemic in Sepanjang Village, Gondanglegi District, Malang Regency ( $p\text{-value}=0,000$ ).

Community expected to consult with health workers regarding the anxiety experienced, so that anxiety which was also a psychological problem doesn't affect the condition of the fetus. Health workers were expected to improve their performance and keep reminding pregnant women to give birth at health workers. Further researchers could use the results of this study as a reference to carry out research with the same theme, but should add variables other than anxiety and also increase the number of research samples.

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# The Relationship of Environmental Sanitation and Family Attitudes with Events of Dengue Hemorrhagic Fever (DHF)

Nanang Muhibuddin<sup>\*1</sup>, Rischar Beny Riswanto<sup>2</sup>, Ambu Kareri Hara<sup>1</sup>

<sup>1</sup>Community Nursing, Nursing, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>2</sup>Community Nursing, Nursing, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>3</sup>Community Nursing, Nursing Student, STIKes Bhakti Mulia, Kediri, Indonesia

\*Corresponding Author E-mail: [nanang.dr80@gmail.com](mailto:nanang.dr80@gmail.com)

## ABSTRACT

**Keywords:**  
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**Background:** Dengue Hemorrhagic Fever (DHF) is still a public health problem in Indonesia. The increase in dengue cases every year is related to poor environmental sanitation. The purpose of this study was to determine the relationship of environmental sanitation and family attitudes with the incidence of dengue in the working area of UPTD Puskesmas Bendo, Kediri Regency, 2019.

**Methods:** The design was correlational analytic research with cross sectional approach. The population of the entire community working area UPTD Puskesmas Bendo District of Kediri diagnosed with DHF as many as 30 families with a sample of 30 respondents taken a total sampling. The independent variable was environmental sanitation and attitude, the dependent variable was dengue collected by questionnaire and checklist and analyzed by Mc Nemar test and Linear Regression. To the  $p = <0.05$  then  $H_0$  is rejected and  $p \Rightarrow 0.05$  then  $H_0$  is accepted.

**Results:** Environmental sanitation with the incidence of DHF ( $p = 0.031$ ). Family attitudes with the incidence of DHF ( $p = 0.039$ ). Environmental sanitation and family attitudes with the incidence of DHF in the Work Area of UPTD Puskesmas Bendo, Kediri Regency in 2019 ( $p = 0.110$ ).

**Conclusions:** It was concluded that there was a relationship between environmental sanitation and the incidence of DHF, there was a relationship between family attitudes and the incidence of DHF and there was no relationship between environmental sanitation and family attitudes with the incidence of DHF. So that people are more concerned about environmental sanitation to reduce the occurrence of dengue fever as a manifestation of the movement of one house 1 cadre of jumantik.

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## I. INTRODUCTION

Dengue Hemorrhagic Fever (DHF) was still a public health problem in Indonesia. The disease caused by dengue virus is an infectious disease that enters human blood circulation through mosquito bites from the genus Aedes, for example Aedes aegypti or Aedes albopictus (1). Indonesia is an area prone to DHF because the distribution of DHF is only found in tropical regions including Indonesia (2).

WHO estimates that 2.5 billion people are at risk of DHF (1). The incidence of DHF in East Java from January to the beginning of February 2019 contained 3,686 cases, while in Kediri there were 416 cases and 12 people died. Based on the results of a preliminary study at UPTD Puskesmas Bendo on March 22, 2019 there were clients with dengue hemorrhagic fever (DHF) who suffered in January-March 2018 as many as 18 clients and data for the last 3 months (January-March) in 2019 as many as 30 clients who has dengue fever. The results of interviews conducted on 5 clients (respondents) who were stricken with dengue were known that 3 clients followed the advice of health workers such as doing 3M Plus (draining, closing, burying) and 2 clients (respondents) did not follow the advice of health workers. (Sambirejo Village).

Many factors affect the high incidence rate of DHF. An increase in dengue cases every year is associated with poor environmental sanitation, such as irregular drainage of the bathtub, not closing water reservoirs around the house or inside the house, lack of environmental hygiene so that there is

garbage that can hold water and used as a place to lay eggs Aedes mosquitoes, not accustomed to bury used cans and others. This condition is exacerbated by the community's lack of understanding of DHF so that attitudes towards DHF events and prevention are still very negative so that community participation is very low. Aedes aegypti mosquitoes in breeding once lay eggs produce 100-102 eggs that survive for 6 months without water and hatch immediately after 2 days submerged in water. If eradication of mosquito breeding is not carried out, the development of Aedes aegypti mosquitoes will increase and can cause outbreaks.

Until now, especially in the rainy season the larva free rate (ABJ) is still low. Preliminary survey results in the working area of the Bendo Health Center in Kediri District in April 2019 of 53 houses inspected, are still not clean. This shows that the behavior of the community towards the prevention of dengue fever is still very low. These conditions allow the area is very risky for transmission of dengue disease.

The impact of poor environmental sanitation conditions is supported by a negative attitude towards the prevention of DHF, so the risk of DHF is still high. Therefore, every rainy season, the incidence of DHF is always high in various regions in Indonesia.

Given the potential of dengue disease to cause death, prevention efforts are needed. Prevention strategies through treatment are quite difficult considering there is no vaccine for prevention and there is no specific cure for healing (3). On the other hand, patients with dengue fever who are still ill or carrier have the potential to transmit it to others through the Aedes aegypti and Aedes albopictus mosquitoes. Prevention efforts can be made through breaking the chain of transmission. Therefore prevention of DHF can be done through eradicating mosquitoes or mosquito nests and mosquito larvae by means of 3 M Plus (draining, closing, burying) mosquito breeding places (containers) plus the provision of fish (fishisation) in containers. The activity of eradicating mosquito nests or known as PSN is a real behavior of every individual to prevent dengue disease.

## II. METHOD

Correlational analytic research design with cross sectional approach. The population of the entire community working area UPTD Puskesmas Bendo District of Kediri diagnosed with DHF as many as 30 families with a sample of 30 respondents taken a total sampling. The independent variable is environmental sanitation and attitude, the dependent variable is dengue collected by questionnaire and checklist and analyzed by Mc Nemar test and Linear Regression. At  $p = <0.05$  then  $H_0$  is rejected and  $p \Rightarrow 0.05$  then  $H_0$  is accepted

## III. RESULTS AND DISCUSSION

### 1. Results

#### 1. Characteristics of Respondents

Table 1 Characteristics of Respondents at UPTD Puskesmas Bendo, Kediri Regency in 2019

No.	Characteristics of Respondents	f	%
<b>Age</b>			
1	<20 years	1	3.3
2	20-35 years	10	33.3
3	>35 years	19	63.3
<b>Education</b>			
1	Basic School	2	6.7
2	First Middle School	6	20.0
3	High Middle School	19	63.3
4	University	3	10.0
<b>Job</b>			
1	Not Working	4	13.3
2	Farmers	3	10.0
3	Private	16	53.3
4	Civil Servants	7	23.3
Total		30	100

Based on table 1, it was known that most respondents > 35 years old are 19 respondents (63.3%), most respondents have a high school education that is 19 respondents (63.37%) and the majority of respondents work in private sectors, namely 16 respondents (53.3 %) of a total of 30 respondents.

## 2. Environmental Sanitation in the Work Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

Table 2 Environmental Sanitation in the Work Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

No	Environmental Sanitation	f	%
1	Not Eligible	28	93.3
2	Fulfilling Requirements	2	6.7
	Total	30	100

Based on table 2, it is known that almost all respondents have environmental sanitation that does not meet the requirements, namely as many as 28 respondents (93.3) out of a total of 30 respondents.

## 3. Family Attitudes in the Work Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

Table 3 Attitudes of Families in the Working Area of UPTD Puskesmas Bendo District of Kediri in 2019

No	Family Attitudes	f	%
1	Negative	14	46.7
2	Positive	16	53.3
	Total	30	100

Based on table 3, it is known that most of the respondents have a positive attitude in eradicating dengue fever as many as 16 respondents (53.3%) out of a total of 30 respondents.

## 4. The Correlation of Environmental Sanitation with Occurrence of Dengue Fever in the Working Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

Table 4 The Correlation of Environmental Sanitation with Incidence of Dengue Fever in the Working Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

No	Environmental Sanitation	Incidence DHF				Total	
		Occur		Not happen			
		F	%	F	%		
1	Not Eligible	22	73.3	6	20.0	28	
2	Fulfilling Requirements	0	0.0	2	6.7	2	
	Total	22	73.3	8	26.7	30	
						100	

Based on Figure 4, it can be seen that the sanitation conditions do not meet the requirements and there is a DHF occurrence, namely as many as 22 respondents (73.3%).

Table 5 Mc Nemar Test Results of the Correlation of Environmental Sanitation with Incidence of DHF in the Work Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

Variable	p value
Environmental Sanitation - Incidence DHF	0,031
N = 30	
$\alpha = 0,05$	

Based on table 5, it is known that there is a correlation between environmental sanitation and the incidence of DHF in the UPTD Work Area of the Bendo Puskesmas in Kediri Regency in 2019 (Mc Nemar  $p = 0.031 < 0.05$  then  $H_0$  is rejected).

### 5. Relationship between Family Attitudes and Incidence of Dengue Fever in the Working Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

Table 6 The Correlation of Family Attitudes with Incidence of Dengue Fever in the Working Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

No.	Family Attitudes	Incidence DHF				Total	
		Occur		Not Happen			
		f	%	F	%		
1	Negative	12	40.0	2	6.7	14 46.7	
2	Positive	10	33.3	6	20.0	16 53.3	
	Total	22	73.3	8	26.7	30 100	

No. Family Attitudes Total DBD Occurrence Occur Not Happen

Based on Figure 6, it can be seen that negative family attitudes of DHF occur by 12 respondents (40%) while in positive family attitudes DHF occurs by 10 respondents (33.3%).

Table 7 Mc Nemar Test Results Correlation of Family Attitudes with Incidence of DHF in the Work Area of UPTD Puskesmas in Bendo Kediri Regency in 2019

Variabel	p value
Family attitudes - Incidence DHF	0.039
N = 30	
$\alpha = 0,05$	

Based on table 7, it is known that there is a correlation between family attitudes and the incidence of DHF in the UPTD Work Area of the Bendo Puskesmas in Kediri Regency in 2019 (Mc Nemar  $p = 0.039 < 0.05$  then  $H_0$  is rejected).

### 6. Relationship of Environmental Sanitation and Family Attitudes with Occurrence of DHF in the Work Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

Table 8 Linear Regression Test Results Relationship of Environmental Sanitation and Attitude of Family with Incidence of DHF in the Work Area of UPTD Puskesmas Bendo District of Kediri in 2019

Variable	Regression Coefficient ( <b>B</b> )	t	p
Constants	0.356	1.074	0.292
Sanitation	0.492	2.448	0.021
Attitudes	0.295	1.832	0.078
n observation = 30			
$p < 0,005$			

Based on table 8 above, it is known that there is no correlation between environmental sanitation and family attitudes with the incidence of DHF in the Working Area of UPTD Puskesmas Bendo, Kediri Regency. ( $p = 0.292 > 0.005$ )

## 2. Discussion

### 1. The Corelation between Environmental Sanitation and Occurrence of Dengue Fever in the Working Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

Based on table 5, it is known that there is a corelation between environmental sanitation and the incidence of DHF in the UPTD Work Area of the Bendo Puskesmas in Kediri Regency in 2019 (Mc Nemar  $p = 0.031 < 0.05$  then  $H_0$  is rejected).

Sanitation according to the World Health Organization (WHO) is an effort that oversees several physical environmental factors that affect humans, especially those that affect its effects, damage physical development, health, and survival. Sanitation in English comes from the word sanitation which is interpreted as maintaining health. Ehler and Steel argued that sanitation is a surveillance effort aimed at environmental factors that can be a chain of disease transmission (4). Many factors affect the high incidence rate of DHF. An increase in dengue cases every year is associated with poor environmental sanitation, such as irregular drainage of the bathtub, not closing water reservoirs around the house or inside the house, lack of environmental hygiene so that there is garbage that can hold water and used as a place to lay eggs Aedes mosquitoes, not accustomed to bury used cans and others. This condition is exacerbated by the community's lack of understanding of DHF so that attitudes towards DHF events and prevention are still very negative so that community participation is very low.

The corelation between environmental sanitation and the incidence of DHF in the UPTD Work Area of the Bendo Health Center in Kediri in 2019 can be caused by various factors both from the characteristics of the respondents and environmental conditions. Based on the research results, it is known that almost all respondents have environmental conditions that do not meet the requirements. This can happen if someone does not pay attention to the sanitation conditions around his house. Dengue mosquitoes live in clean water, so if there is a pool of clean water around the environment it will become a breeding place.

Environmental conditions that do not meet the requirements are also influenced by factors such as respondents' age, education and occupation. Age factors of the majority of respondents aged  $> 35$  years. In this age group, including the adult age group who should be able to think of the best things for the family, including prevention of dengue fever. However, at this age is a productive age where a person will be more focused on earning a living for his family so that he does not think about other things including environmental conditions that are factors for the breeding of DHF mosquitoes.

Based on work, most respondents work privately. Someone who works in a private sector is required to always be on time with the target work. This situation causes someone to have limited time when at home, especially to pay attention to the environmental sanitation conditions. They pay less attention to environmental sanitation, including the presence of a water reservoir which is a breeding place for dengue mosquitoes.

### 2. The Corelation between Family Attitudes and Incidence of Dengue Fever in the Working Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

Based on table 7, it is known that there is a corelation between family attitudes and the incidence of DHF in the UPTD Work Area of the Bendo Puskesmas in Kediri Regency in 2019 (Mc Nemar  $p = 0.039 < 0.05$  then  $H_0$  is rejected).

A person's attitude towards an object is a feeling of favor or favor (favorable) or a feeling of not supporting (unfavorable) towards the object. Formulation according to Thrustone said that attitude is a degree of positive affect or negative effect that is associated with a psychological object (5). Attitudes are opinions, one's beliefs about objects or situations that are relatively fixed accompanied by certain feelings and provide a basis for that person to respond or behave in the particular way chosen. Attitude is a person's closed response to a particular stimulus or object that already involves the factor of opinion and emotion in question (happy-not happy, agree-disagree, good-not good, and so on). A person's attitude is influenced by personal experience, culture, influence of others, mass media, educational institutions and religious institutions as well as emotional factors in individuals.

The results showed a relationship between family attitudes and the incidence of DHF. This is due to the attitude that underlies a person's behavior including DHF eradication behavior. A positive attitude underlies the emergence of behavior to eradicate dengue mosquito nests. So in this case the eradication of DHF mosquitoes requires predisposition in the form of attitude. Attitude itself is a reaction or response that is still closed from someone to the stimulus or object. An attitude will not necessarily be realized in the form of action. Attitude becomes a real act, required supporting factors or conditions that allow, including conditions from within the individual itself.

### 3. The Corelation of Environmental Sanitation and Family Attitudes with Incidence of Dengue Fever in the Work Area of UPTD Puskesmas Bendo, Kediri Regency in 2019

Based on table 8, it is known that there is no relationship between environmental sanitation and family attitudes with the incidence of DHF in the Bendo UPTD Work Area in Kediri District in 2019 (Linear Regression  $p = 0.110 > 0.05$  then  $H_0$  is accepted).

The results showed no relationship between environmental sanitation and family attitudes with the incidence of DHF. In theory, the breeding of DHF mosquitoes is strongly influenced by environmental factors. The environment in question is primarily a means of clean water and puddles of clean water in the home environment. Dengue mosquito breeding is clean water if there is a puddle of clean water that is not drained will be a very good place for mosquito breeding. While the attitude is not related to the incidence of DHF because the attitude is not yet a real action that supports the eradication of dengue fever mosquitoes. Attitude only underlies the formation of a behavior. If you have a good attitude will form good behavior to prevent dengue fever. The behavior in question includes dislike hanging dirty clothes in the room, draining clean water tubs.

## IV. CONCLUSION

It was concluded that there was a relationship between environmental sanitation and the incidence of DHF, there was a relationship between family attitudes and the incidence of DHF and there was no relationship between environmental sanitation and family attitudes with the incidence of DHF. So that people are more concerned about environmental sanitation to reduce the occurrence of dengue fever as a manifestation of the movement of one house 1 cadre of jumantik.

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# The Effect of Kegel Exercises on The Frequency of Urination in The Elderly in UPSTW Jombang in Pare

Rischar Beny Riswanto<sup>\*1</sup>, Nanang Muhibuddin<sup>2</sup>, Novince Mangngi<sup>3</sup>

<sup>1</sup>*Gerontik Nursing, Nursing, STIKes Bhakti Mulia, Kediri, Indonesia*

<sup>2</sup>*Gerontik Nursing, Nursing, STIKes Bhakti Mulia, Kediri, Indonesia*

<sup>3</sup>*Gerontik Nursing, Nursing Student, STIKes Bhakti Mulia, Kediri, Indonesia*

\*Corresponding Author E-mail: [rizaliben@gmail.com](mailto:rizaliben@gmail.com)

## ABSTRACT

**Keywords:** Kegel Exercises, Urinary Frequency, Elderly

**Background:** As we age, changes in anatomy and function of the urinary organs were caused by weakened of the pelvic floor muscles, wrong pushed habits or a decrease in the hormone estrogen at the age of 50 years and over which causes decreased puboccygeal muscle tone and urethral urinary tract muscles. The purpose of this study was to influence the exercise of Kegel exercises on the frequency of urination in the elderly.

**Method:** The research design was pre experimental with one group pretest - posttest design. The population was all elderly in UPSTW Jombang in Pare, Kediri regency as many as 85 elderly, a sample of 46 respondents used purposive sampling technique. The technique of collecting voided frequency data used a questionnaire. Data analysis used Wilcoxon test with the provisions of the value  $\rho < \alpha$ ,  $\alpha: 0,05$ .

**Result:** The results showed that fine motor development before being given treatment most respondents experienced an abnormal urination frequency that was as many as 27 respondents (58.7%) and after being treated almost all respondents experienced normal urination frequency that was as many as 43 respondents (93.5%). Results of data analysed of sig (2-tailed) values: 0,001.

**Conclusion:** Kegel exercises affect the frequency of urination in elderly people who experience urinary incontinence

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## I. INTRODUCTION

The aging process (aging process) was a process that will be marked by physical-biological, mental or psychosocial changes. Physical changes include cell decline, decreased nervous system, auditory system, vision system, cardiovascular system, body temperature regulation system, respiration system, endocrine system, skin system, urinary system, musculoskeletal (connective tissue) system (1). As we age, changes in anatomy and function of the urinary organs were caused by weakening of the pelvic floor muscles, wrong pushing habits or a decrease in the hormone estrogen at the age of 50 years and over which causes decreased puboccygeal muscle tone and urethral urinary tract muscles (2). Urinary incontinence was involuntary urine expenditure (unconscious / incontinent) at the time and place that was not right outside the desire. Urinary incontinence was spontaneous excretion of urine at any time outside the will (involuntary). This situation was generally found in seniors (3).

According to data from WHO, 200 million people in the world experience urinary incontinence. According to the United States Department of Health and Human Services (Department of Health and Community Services of the United States) reported that in 2016 there were 13 million people in the United States who suffered from urinary incontinence and 85% of them were women, this number was actually still very little from the actual condition, because it still

many cases were not reported (4).

The results of the 2010 population census show that the number of Indonesia's elderly population was 18.52 million, an increase of 7.93% from 2000 which was 14.44 million. In West Sumatra the number of elderly population was 12,443 people. It was estimated that the number of elderly population in Indonesia will continue to grow around 450,000 people per year (3).

In Indonesia the number of patients with urinary incontinence was very significant. In 2006 it was estimated that around 5.8% of the population experienced urinary incontinence, but treatment was still lacking. This was caused because people do not know the right place to seek treatment accompanied by a lack of understanding of health workers about urinary incontinence (5). Based on data from the East Java Health Office in 2017 the number of elderly was 105,588 people and those who receive health services with a variety of disorders in the elderly were around 57.32% and about 28.15% disorders that occur in the elderly, namely disorders of genitourinaria including urinary incontinence (6).

Based on the results of a preliminary study conducted on 19 February 2019 at Jombang UPSTW in Pare, it was known that there were 85 elderly people, with 33 elderly men and 52 elderly women. Elders who were in Jombang UPSTW guesthouse in Pare have an average of > 60 years. Based on the results of interviews with 5 elderly, it was known that all the elderly have complaints about inconsistency of urine. They complained of excessive BAK frequency (more than 7 times a day), with details of 3 men (60%) while 2 women (40%). Besides experiencing urinary inconsistency problems.

Urinary incontinence results from a decrease in pelvic floor muscle strength that can be caused by aging. Most of the elderly who experience urine release, especially when laughing and coughing (Stress Urinary Incontinence / SUI) say they have never done special exercises to reduce these complaints. The high incidence of urine incontinence can cause various complications such as urinary tract infections, pubic skin infections, sleep disorders, pressure sores, and rash symptoms. In addition, psychosocial problems such as being shunned by others because of the smell of urine, insecurity, irritability also often occur and this results in depression and social isolation (5).

During this time the effort made to reduce complaints of incontinence in the elderly was Kegel exercises (Kegel Exercise) which aims to rebuild the strength of the pelvic floor muscles. This exercise was done in series with the type of contraction exercises to increase pelvic floor muscle strength (7). Popular non-operative therapy was Kegel Exercise. Kegel exercise was an active basic muscle contraction exercise that aims to increase pelvic floor muscles. Kegel exercises were very useful for strengthening skeletal muscles at the pelvic floor, thereby strengthening the function of the external sphincte in the bladder (8). Kegel exercises that were applied to the elderly can cure the inability to hold urine (urinary incontinence) and can tighten and restore muscles in the genital and anal area (3).

Based on the above problem, researchers were interested in conducting research on: "The Effect of Kegel Gymnastics on Urinary Frequency in the Elderly in Jombang UPSTW in Pare, Kediri Regency in 2019".

## II. METHOD

In this study, researchers used a pre-experimental research design with a one group pretest posttest approach. The population in this study were all elderly in UPSTW Jombang in Pare, Kediri Regency as many as 85 elderly. A sample of 27 respondents used purposive sampling technique.

Research instruments were tools that will be used for data collection (Notoatmodjo, 2014). The instrument used in this study was a questionnaire. The results of the analysis were carried out with a Wilcoxon statistical test in the calculation process assisted by used the help of Statistics Program for Social Science (SPSS) Version 17.

## III. RESULTS

Characteristics of research subjects based on age, sex, last education and last occupation was known that the majority of respondents aged 75-80 years were 15 respondents (55.6%), most respondents were female respondents ie 15 respondents (55.6%), the majority of respondents with

the last elementary school education were 14 respondents (51.9%) and most respondents with the last job as farmers were 17 respondents (63.0%)

No.	Variabel	N Difference	$\alpha$	P
1.	Urination Frequency Pre Test – Post Test N = 27	Positive : 0 Negative : 27 Ties : 0	0,05	0,001
2.				

Based on data analysis used Wilcoxon test results obtained p value = 0.001 and the level of error ( $\alpha$ ) = 0.05, so  $p < \alpha$ , then  $H_0$  was rejected and  $H_1$  was accepted, meaning that there was an influence of Kegel exercises on the frequency of urination in elderly in Jombang UPSTW in Pare, Kediri Regency 2019.

#### IV. DISCUSSION

The results of this study indicate that Kegel exercises were an effort to prevent urinary incontinence. The mechanism of contraction and increased muscle tone can occur due to stimulation as a result of exercise. Muscle can be seen as a motor that works by converting chemical energy into mechanical energy in the form of contractions and movements to move muscle fibers. The interaction process was activated by calcium ions and adenosine triphosphate (ATP) which were then broken down into adenosine diphosphate (ADP) which gives contraction to the detrusor muscle. Kegel exercises can also cure the inability to hold urine (urinary incontinence). Doing Kegel exercises can also help perfect the ring muscles in the drain hole, both the urinary tract and the intestinal shaft. Finally, the results of this study indicate that Kegel exercises regularly with more frequency in a relatively long time to know the effect of Kegel exercises on decreasing the frequency of urinary incontinence, especially in the elderly.

This was in accordance with the opinion of an obstetrician named Kegel in 1940 which was very useful for strengthening skeletal muscles at the pelvic floor, thereby strengthening the function of the external spingers in the bladder. Pelvic floor muscle training introduced by Kegel, was developed and performed in the elderly with urinary incontinence. Kegel exercise was an active basic muscle contraction exercise that aims to increase pelvic floor muscles. Kegel training was a series of exercises to rebuild pelvic floor muscle strength so that it strengthens the function of the external spincter in the bladder (8).

Another study was also carried out by Widyaningsih (2009) in Astuti (2016) with the title Effect of Kegel Exercise Against Urinary Incontinence Frequency in the Elderly at Pucang Gading Nursing Home in Semarang. The results showed that after doing Kegel exercises a decrease in the frequency of urine incotinence was 21.6% from 10,043 times to 7,871 times. From the t-dependent test results obtained p value of 0,000 so that there was an influence of Kegel exercises on the frequency of urine incontinence in the elderly at Pucang Gading Nursing Home in Semarang.

The results of data analysis used Wilcoxon test showed p value = 0.001 and error level () = 0.05, so  $p < \alpha$ , then  $H_0$  was rejected and  $H_1$  was accepted, meaning that there was an influence of Kegel exercises on the frequency of urination in elderly in Jombang UPSTW in Pare, Kediri Regency 2019.

The results of this study were in accordance with similar studies conducted previously by Mustofa & Widyaningsih (2009) in Astuti (2016) about the effect of kegel training on urinary incontinence frequency in the elderly with a frequency of exercise once a day for four weeks so that they experience and were only done in the same group . For this reason, in this study the training frequency was divided into three different groups and a longer period of time for 6 weeks.

The results of this study indicate the need for regular Kegel exercises in a relatively long time to determine the effect of Kegel exercises on decreasing the frequency of urinary incontinence.

#### V. CONCLUSION

Before being treated, most respondents (58.7%) experienced abnormal urination. After treatment, almost all respondents (93.5%) experienced normal voiding frequency. There was an influence of

Kegel exercises on the frequency of urination in the elderly at UPSTW Jombang in Pare, Kediri Regency in 2019.

It was expected that the results of this study can be used as input / information on health workers to be able to overcome the problem of urination in the elderly and provide non-pharmacological education in an effort to fulfill the convenience of urination in the elderly.

The elderly were expected to do routine Kegel exercises every day in accordance with the training given by the instructor so that the frequency of urination can be better

The results of this study were expected to be able to provide an overview and information regarding urinary problems in the elderly so that appropriate nursing care can be planned in the provision of health services for the elderly to improve quality of life during old age.

It was hoped that researchers will be able to better know the benefits of Kegel exercises on the frequency of urination, so that they can apply it to their work environment, family and community and add to the researcher's experience in conducting research, and can be used as a basis for further research. The results of this study can add knowledge and input for researchers who subsequently conduct the same research with urinary incontinence problems used other nonpharmacological therapies that can be used to treat urinary disorders especially in the elderly.

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# Effectiveness of Gallery Walk Learning Method in The Class of Pregnant Women to The Knowledge of Pregnant Women about Pregnancy Danger Signs in The Region of Tulungrejo Village

Pramita Sandy Ulya Immanura\*<sup>1</sup>, Astri Yunita <sup>2</sup>

<sup>1</sup>Maternity, Midwifery, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>2</sup>Maternity, Midwifery, STIKes Bhakti Mulia, Kediri, Indonesia

\*Corresponding Author e-mail: astrinipongyunita07@gmail.com

## ABSTRACT

**Keywords:** pregnant women, learning methods gallery walk, pregnancy danger signs

**Background:** Pregnant women's class is one of the means for pregnant women to learn together about health during pregnancy, the active learning method is to use the gallery walk method which is a learning method that builds the activeness of learners that can stimulate and strengthen the memory of learners. This program is an integrated and systematic activity to reduce AKI and AKB.

**Methods:** This research was conducted in Tulungrejo Village, Pare District. This research is one group pretest-posttest design. The research population is pregnant women with a pregnancy of 20-32 weeks, a total of 31 pregnant women. Sampling technique is by using total sampling technique. All samples will be given interventions and questionnaires about the mother's knowledge of pregnancy hazard signs.

**Results:** The results showed significant differences in the group before intervention and after intervention of learning methods about pregnancy hazard signs, with a value of  $p = 0.000$ . This shows that the learning method of gallery walk in the class of pregnant women is effective against the knowledge of pregnant women about the dangers of pregnancy in Tulungrejo Village, Pare District.

**Conclusions:** The results of this study are expected to provide input for the place of health services in providing health education to pregnant women about the dangers of pregnancy to be more attractive, organized and improve the quality of service, so that pregnant women feel satisfied while pregnant and enthusiastic.

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## I. INTRODUCTION

A child's skills are closely related to his motor development. Motor is the development of control of body movements through coordinated activities between the nervous system, muscles and brain. Motor development includes gross motor and fine motor. Both abilities are very important so that children can develop optimally. Early Childhood Education (PAUD) is a coaching effort aimed at children from birth to the age of six years that is done through the provision of educational stimulation to help physical and spiritual growth and development so that children have readiness in learning activities that will produce abilities and skills (1).

The incidence of growth and development disorders in children under the age of five is still high, especially motor development disorders obtained (27.5%) or 3 million children experience disorders (2). National data according to the Indonesian Ministry of Health that in 2010, 11.5% of children under five in Indonesia experienced growth and development disorders (3). Examination of detection of the growth and development of children under five and preschool age numbering

3,657,353 children who experienced delayed growth problems in East Java in 2010 by 2.321542 (63.48%) tended to decrease compared to 2009 by 64.03% and still below the target of 80% (4).

Based on the results of a preliminary survey conducted by researchers in May at Artha Kencana Kindergarten conducted on 10 preschool age children, the results obtained were, according to the development of 6 children (60.0%), doubtless 3 children (30.0%), deviation 1 children (10 %). This shows that there is still a sub-optimal fine motor development of pre-school children.

Motor delays can cause children to feel inferior, jealous of other children, disappointment with parental attitudes, social rejection, dependence and shame (5). The impact of fine motor development disorders is that children become less creative, because what they should need cannot be fulfilled, so the ideas they issue are monotonous and they will become the next generation who is left behind (6).

In order for the child's learning process to run well, it is necessary to have allowances with various supporting learning media. In the teaching and learning process in the classroom, media means as a means that functions to channel knowledge from teachers to students. The smooth application of the learning method is more or less determined by the learning media used. Because the learning process is a communication process and takes place in a system, the learning media occupies a fairly important position as one of the components of the learning system. In this case, learning media must be made as attractive as possible by utilizing simple materials from the environment and using materials that are often found in the market. The application of the demonstration method through painting activities in unconventional ways will be able to provide more optimal results in learning and can improve children's fine motor skills.

Based on some of the opinions that have been conveyed above, it can be concluded that painting is an activity that is very suitable to be applied to kindergarten age children, because coloring is a fun activity. In addition, through coloring activities, you can practice skills, neatness and patience as well as express your desire to give or make colors on image objects using dyes and tools used for painting, for example, using a brush.

Based on the background above about coloring pictures on fine motor skills, the researchers are interested in taking the title "The Effect of Painting Activities on Fine Motor Skills in Pre-School Children Age 4-6 Years at Artha Kencana Kindergarten Kec. Majoroto Kediri City".

## II. METHOD

Design is all the processes required in planning and conducting research. The design used was a pre-experimental design with "One Group Pretest-Posttest Design" (Nazir, 2015). Design Models are:

T1	X	T2
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Information :

T1 = Pre-observation before using drawing coloring activities

X = Treatment (picture coloring activity)

T2 = Initial observations after using picture coloring activities

Research instruments are tools or facilities used by researchers in collecting data so that their work is easier and the results are better, in the sense that they are more accurate, complete and systematic, so that they are more easily processed (Arikunto, 2015). The instrument used in data retrieval uses observation sheets and interviews. Observation, namely an observation includes the activity of loading attention to an object that uses all the senses. Interview is a method of collecting data by directly interviewing the respondents surveyed (Hidayat, 2015). Data analysis technique used to test differences in appetite before and after using the Wilcoxon test with  $\alpha = 0.05$ .

### III. RESULTS AND DISCUSSION

#### 1. General Data

Table 1 General Data Characteristics of Respondents

No	Variabel	General Data of Respondents	Amount	Percentage
1	Age	4 years	11	27.5
		5 years	16	40.0
		6 years	13	32.5
2	Gender	Male	22	55.0
		Female	18	45.0
3	Mother's education	Basic education (SD-SMP)		
		Secondary education (SMA)	6	15.0
		(SMA)	23	57.5
		Higher education (Academy/PT)	11	27.5
4	Mother's work	Work	27	67.5
		Doesn't work	13	32.5

Based on table 1, it can be interpreted that most (40%) are 5 years old, as many as 16 children, almost half (55%) are male, as many as 22 children. most (57.5%) of respondents' mothers had high school education as many as 23 people. most (67.5%) of respondents' mothers work as many as 27 people.

#### 2. Special Data

#### Children's Fine Motor Skills Before Painting Activities at Artha Kencana Kindergarten, Majoroto District, Kediri City

Table 2 Distribution of Character Frequency Before Giving Painting Activities at Artha Kencana Kindergarten, Majoroto District, Kediri City

Before Painting	Frequency	Percent (%)
Unable to test	9	22.5
The suspect	28	70.0
Normal	3	7.5
<b>Total</b>	<b>40</b>	<b>100.0</b>

Based on table 2, it can be interpreted that before the implementation of painting activities, most (70%) had a suspect development of 28 children.

#### Children's Fine Motor Skills After being Given Painting Activities at Artha Kencana Kindergarten, Majoroto District, Kediri City

Table 3 Frequency Distribution of Children's Fine Motor Ability Characters After being Given Painting Activities at Artha Kencana Kindergarten, Majoroto District, Kediri City

Before Painting	Frequency	Percent (%)
Suspect	8	20.0
Normal	32	80.0
<b>Total</b>	<b>40</b>	<b>100.0</b>

Based on table 3, it can be interpreted that almost all (80%) have normal development as many as 34 children.

## **Analysis of the Effect of Painting on Fine Motor Skills in Pre-School Children Age 4-6 Years at Artah Kencana Kindergarten, Mojoroto District, Kediri City**

Table 4 Analysis of the Effect of Painting Activities on Fine Motor Skills in Pre-School Children Age 4-6 Years at Artah Kencana Kindergarten, Mojoroto District, Kediri City

			N	Mean	Sum Of Ranks
Fine motor painting – Fine motor before painting	Negative Ranks	0 <sup>a</sup>	.00	.00	
	Positive Ranks	36 <sup>b</sup>	18.50	666.00	
	Ties	4 <sup>c</sup>			
	Total	40			
Z					-5.856 <sup>b</sup>
Asymp.	Sig. (2-tailed)				.000

Based on table 4, it can be interpreted that the development of children before being given painting activities was mostly (70%) namely 28 children who experienced suspected development, a small portion (22.5%) namely 9 children who experienced development could not be tested and (7.5%) ie 3 children experienced normal development. After being given painting activities, most (80%) namely 32 children experienced normal development, a small portion (20%) namely 8 children experienced suspicious development.

The results of the statistical test using the Wilcoxon test (0.005) obtained p value 0.000 = (0.05), so that the p-value 0.05, it was decided that H<sub>0</sub> was rejected or H<sub>1</sub> was accepted. Thus, it can be concluded that there is an effect of painting activities on fine motor skills in pre-school children aged 4-6 years at Artha Kencana Kindergarten, Kec. Mojoroto City of Kediri.

## IV. DISCUSS

### **1. Children's Fine Motor Skills Before Painting Activities at Artha Kencana Kindergarten, Mojoroto District, Kediri City**

Factors that affect children's fine motor development include genetic factors: individuals have several hereditary factors that can support motor development, health factors in the prenatal period: fetuses that have been in the womb in good health, not poisoned, not lacking in nutrition or vitamins can help facilitate children's motor development, factors of difficulty in childbirth: factors of difficulty in giving birth for example in the course of birth using a vacuum device, so that the baby experiences brain damage and will slow down the baby's motor development, health and nutrition: good health and nutrition in early life Post-delivery will accelerate the baby's motor development, stimulation or stimulation: the presence of stimulation, guidance and opportunities for the child to move all parts of the body will accelerate the baby's motor development, protection: excessive protection so that the child does not have time to move rak, premature: births before their time is called premature, will usually slow down the child's motor development, abnormalities: individuals who experience abnormalities both physically and psychologically, socially, mentally will usually experience obstacles in their development, culture: local regulations can affect children's motor development.

In the opinion of the researcher, the ability of children cannot be tested because of the lack of stimulation from both parents, the environment and peers which can affect the development of children. For example, in an environment where children often gather with adults, the child will experience development which is not yet time to enter this development.

This has a positive impact and even tends to be negative because adults talk about adults in which children will participate in this. For example: talking dirty, if the child often gathers with people like that, it is likely that the child will follow dirty things too, so that the child becomes more naughty and disobeys parents' orders.

The purpose and function of children's fine motor development is a process of mastering skills that are reflected in the ability to function small muscles and train children's patience to complete certain tasks. The motor development of children can be seen from the extent to which the child is able to display the results of activities with a certain level of success. So, if the level of success in carrying out tasks well, it means that the motor activities carried out are effective and efficient (7).

Through fun activities that can mature the ability of children's small muscles, it is hoped that there will be no compulsion so that children can be creative using their fingers for initial practice in writing skills.

According to the researcher's opinion, boys tend to be more difficult to manage, want to be creative according to their wishes, are more indifferent to their own circumstances as long as they don't interfere with their activities, in contrast to girls who tend to be more organized and tidy. So that in painting activities, boys are often on their own, running here and there busy with toys and themselves, and difficult and a little understanding carefully.

According to researchers, working mothers greatly influence someone in giving enough time to their children. The more time a mother spends outside the home, the more time the mother is wasted with her child, thus affecting the mother's behavior in providing stimulation in the form of painting to her child. Exercise is considered important if it This causes more stimulation to produce the desired behavior, because each experience is unique, so the child must learn it over and over.

## **2. Children's Fine Motor Skills After being Given Painting Activities at Artha Kencana Kindergarten, Majoroto District, Kediri City**

According to Saputra (2014), development is an increase in the ability to function of all body organ systems due to the increasing maturity of the functions of the body's organ systems, which are reversible and quantitative including: gross and fine movement abilities, hearing, vision, communication, speech, social-emotional, independence, intelligence. , and moral development. The main process of child development is interrelated between biological processes, socio-emotional processes and cognitive processes. These three things will influence each other and throughout the course of human life. During the development process, it is possible for children to face various problems that will hinder the further development process. These developments include the development of social behavior, language, cognitive, physical / motor (gross motor and fine motor) (4).

Children do not think about the goals to be achieved, but rather try to combine various new behaviors, new experiences, the atmosphere of children must be comfortable and fun, not pressured so that children will combine experiences to solve new problems faced, learning at kindergarten age is required to be fun and enjoyable. volunteer. Kindergarten children generally play while learning. Painting in kindergarten is no less important than playing.

In painting, children can express all their feelings. So that the child can experience sublimation, if the feeling cannot be channeled then the child will experience mental stress. Feelings will explode and get out of control. Then the distribution of these feelings through painting activities. Painting as a medium to express feelings and make the painting meaningful. In essence, painting in kindergarten children is the result of scribbles in the form of shapes, colors and lines that are poured on drawing paper, the work has an important and genuine meaning for children because it is an expression of feelings about events, events that have been experienced or have been seen and make a new experience.

After being given painting regularly every day for 4 days with sufficient monitoring the children's fine development began to increase. Almost all respondents became normal in their fine motor development. This can be influenced by the painting activity. This proves that painting activities can improve fine motor skills in children.

### 3. Analysis of the Effect of Painting on Fine Motoric Development of Preschool Children Age 4-6 Years at Artha Kencana Kindergarten, Majoroto District, Kediri City

Similar to the research conducted by Muawanah (2014). Based on the results of the research in the first cycle, the children's fine motor skills were 60%. This shows that this research has not been successful because the criteria for the level of child development has not been achieved by 76%, so this research continues in cycle II. In cycle II, the children's fine motor skills increased by 85%. Based on the results of these studies, it can be concluded that children's fine motor skills can be improved through finger painting techniques.

The painting activity was deliberately chosen as an effort to develop children's fine motor skills. Children's learning process through this activity can be done by children and make things happen based on their imagination. Children can also learn to control their hands, coordinate their thoughts, eyes and hands, and express themselves through art which aims to train the fingers in the development of children's fine motor skills.

This is done so that children can hold the media used in painting activities correctly and independently, and can coordinate their eyes and hands when holding the media used in painting activities and children can write correctly colored media (7).

According to the researcher, by giving the painting method children are stimulated. This affects the results of the study which shows that almost all respondents after following the painting method can increase children's creativity and develop quite well.

## V. CONCLUSION

The results of the research conducted at Artha Kencana Kindergarten, Majoroto District, Kediri City, concluded as follows: 1) Identifying fine motor skills in pre-school age children before painting activities at Artha Kencana Kindergarten, Majoroto District, Kediri City, was almost entirely in the suspect category; 2) identify fine motor skills in pre-school age children after painting activities at Artha Kencana Kindergarten, Majoroto District, Kediri City; and 3) all are categorized as normal and there is an effect of painting activities on fine motor skills in pre-school age children at Artha Kencana Kindergarten, Majoroto District, Kediri City.

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# Attitudes and Knowledge about The Covid-19 Pandemic of Members of The Gbi Bukit Pengharapan Kediri Congregation

Dewi Ika Sari Hari Poernomo<sup>a1\*</sup>, Sandy Kurniajati<sup>b2</sup>

<sup>a1</sup>\*Prodi Keperawatan Program Sarjana, STIKES RS Baptis Kediri Indonesia

<sup>b2</sup>Prodi Keperawatan Program Sarjana, STIKES RS Baptis Kediri Indonesia

\*Corresponding author: [dewikasari82@yahoo.co.id](mailto:dewikasari82@yahoo.co.id)

## ABSTRACT

*Keywords:*  
Covid-19,  
Attitudes,  
Knowledge

**Background:** The public needs to understand about the COVID-19 pandemic for a pandemic situation requires the vigilance of all parties. The knowledge that must be known by the public starts from the understanding and mode of transmission of covid-19, signs of symptoms of covid-19, management and prevention of transmission. The purpose of this description was to determine attitudes and knowledge among members of GBI Bukit Pengharapan Kediri about COVID-19 pandemic.

**Methods:** The design of this research is descriptive. The population in this study were all members of GBI Bukit Pengharapan Kediri. There were 32 samples for this study using consecutive sampling on members of GBI from adolescence to the elderly. The variables in this study were attitudes and knowledge about the covid-19 pandemic. Collecting data using a questionnaire, the data collected is presented in the form of a frequency distribution.

**Results:** The results of this study showed that more than 50% of respondents had a good attitude (59,4%) and enough (40,6%), and more than 50% of respondents had good knowledge about the Covid-19 Pandemic.

**Conclusions:** The conclusion of this study is that most of the GBI Bukit Pengharapan members have good and enough attitudes and have good knowledge about the Covid-19 pandemic.

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## I. INTRODUCTION

WHO (World Health Organization) officially declared the corona virus (COVID-19) as a pandemic on March 9, 2020. This means that the corona virus has spread widely in the world. The Indonesian government is increasing vigilance, especially in terms of preventing the spread of cases. The context of the pandemic suggests to the whole world to believe that the COVID-19 disease can strike any country. Moreover, this virus is a new virus which character is not yet known (1). Corona viruses are a large family of viruses that can cause disease in humans and animals. In humans, it usually causes respiratory tract infections, ranging from the common cold to serious illnesses such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome. Syndrome (SARS). This disease, especially this virus, is genetically very different from the SARS-CoV and MERS-CoV viruses. Until June 2020 the number of COVID-19 sufferers and the death rate due to COVID-19 is increasing, the number of OTG that can transmit this virus is also increasing. The government is aggressively providing warnings and information about preventing the transmission of the COVID-19 virus, but many people still ignore the government's warnings, which have an impact on the increase in patients who are positive for COVID-19. This raises the question of whether people

ignore the impact of covid-19 because of the attitude and knowledge that is still lacking about COVID-19 and its consequences for them.

The increase in the number of COVID-19 cases has taken place quite quickly and has already spread outside the Wuhan area and other countries. As of February 16, 2020, globally, 51,857 confirmed cases were reported in 25 countries with 1,669 deaths (CFR 3.2%). The country details and the number of cases are as follows: China 51,174 cases (CFR 3.2%). The country details and the number of cases are as follows: China 51,174 confirmed cases with 1,666 deaths, Japan (53 cases, 1 death and 355 cases on cruise ship Port of Japan), Thailand (34 cases), South Korea (29 cases), Vietnam (16 cases), Singapore (72 cases), United States (15 cases), Cambodia (1 case), Nepal (1 case), France (12 cases), Australia (15 cases), Malaysia (22 cases), Philippines (3 cases, 1 death), Sri Lanka (1 case), Canada (7 cases), Germany (16 cases), France (12 cases), Italy (3 cases), Russia (2 cases), United Kingdom (9 cases), Belgium (1 case), Finland (1 case), Spain (2 cases), Sweden (1 case), UAE (8 cases), and Egypt (1 case). In Indonesia, on July 12, 2020, the Indonesian government announced 75,699 confirmed cases of COVID-19, 3,606 cases died and 35,638 cases recovered from 460 districts/cities in all 34 provinces (2).

Current research shows that the homology between COVID-19 and having DNA characteristics is spread between people through respiratory droplets from coughs and sneezes. and is often pleomorphic, and is 60–140 nm in diameter. A coronavirus in bats-SARS is with a similarity of more than 85%. When cultured in vitro, COVID-19 can be found in human respiratory epithelial cells after 96 hours. Meanwhile, it took about 6 days to isolate and culture vero E6 and Huh-7 cell lines. A new type of coronavirus found in humans since an extraordinary event appeared in Wuhan, China, in December 2019, was later named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV2), and caused Corona virus Disease-2019 (Covid-19). Covid-19 belongs to the genus with a for elliptic Based on current epidemiological investigations, the incubation period of COVID-19 ranges from 1 to 14 days, and generally will occur within 3 to 7 days. Fever, fatigue and dry cough are considered as the main clinical manifestations. Fever, fatigue and dry cough are considered as the main clinical manifestations. Symptoms such as nasal congestion, runny nose, pharyngalgia, myalgia and diarrhea are relatively rare in severe cases, dyspnea and/or hypoxemia usually occur after one week after disease onset, and worse can rapidly progress to acute respiratory distress syndrome, septic shock, metabolic acidosis difficult to correct and bleeding and cough dysfunction and failure of many programs. The lungs are the organs most affected by Covid-19, as the virus accesses host cells via the enzyme ACE2, which is most abundant in type II alveolar cells of the lungs. The virus uses a special surface glycoprotein, called a “spike”, to link to ACE2 and enter the host cell6. The density of ACE2 in each tissue correlates with the severity of disease in that tissue and some experts argue that decreased ACE2 activity may be protective. And as alveolar disease progresses, respiratory failure and death are possible.

A pandemic situation that requires the vigilance of all parties, the public needs to understand about the Covid -19 pandemic. The knowledge that must be known by the public starts from understanding and how to transmit Covid-19, signs of Covid-19 symptoms, management and prevention of transmission. In the midst of the lack of knowledge and understanding about Covid -19, coordination and synergy are key in creating knowledge about Covid -19. The disconnect between scientists, policy makers who have the knowledge to make policies and health practitioners who have operational experience, makes each party ignore or even avoid the knowledge of each other (3). *Knowledge management* must be a concept that can be applied to filter the best knowledge about Covid -19 and anyone who has the credibility to convey knowledge about Covid -19. Knowledge about how to deal with Covid -19 cannot be conveyed by just anyone who does not have the capacity for in-depth knowledge about Covid -19. (3). The purpose of this study is to describe the attitudes and knowledge of GBI Bukit Pengharapan Kediri members about the Covid-19 pandemic.

## II. METHOD

The design of this research is descriptive to describe the attitudes and knowledge of the members of the GBI Bukit Harapan Kediri Congregation. The population in this study were all members of the GBI Bukit Pengharapan Kediri congregation, with a total sample of 32 people using

*consecutive sampling* of GBI Bukit Pengharapan members from adolescence to the elderly. The variables in this study were attitudes and knowledge about the Covid-19 pandemic. The data collection used a questionnaire with the direct method which was carried out in June 2021. The collected data were analyzed by observing the central tendency and presented in the form of a frequency distribution.

### III. RESULTS AND DISCUSSION

#### RESULTS

The results of the research on attitudes and knowledge of members of the GBI Bukit Pengharapan Kediri congregation can be described in the table below:

Table 1. Attitudes about the Covid-19 Pandemic among GBI Bukit Pengharapan Kediri members (n=32)

Attitude	Total	Perscentage (%)
Less	0	0
Enough	13	40,6
Good	18	59,4
<b>Quantity</b>	<b>28</b>	<b>100</b>

Based on table 1, it shows that respondents have a good attitude (59.4%) and Enough (40.6%) about the Covid-19 Pandemic and no respondent has a poor attitude (0%)

Table 2. Knowledge of the COVID-19 Pandemic among GBI Bukit Pengharapan Kediri members (n=32)

Knowledge	Total	Percentage(%)
Less	0	0
Enough	3	9,4
Good	29	90,6
<b>Quantity</b>	<b>28</b>	<b>100</b>

Based on table 2 shows that the majority of respondents have good knowledge, as many as 29 respondents (90.6%) and no respondents have less knowledge (0%)

#### DISCUSSION

Attitudes that exist in a person require elements of response and stimulus. For example, attitudes related to health services, a person will feel satisfied if the health services received are of high quality. Satisfaction is a response to the stimulus received from health services. The attitude output to someone can be different, if they like it then someone will get, come closer, find out and join, otherwise if they don't like it, someone will avoid and stay away (4) Attitude indicators in the Covid-19 pandemic include: Understanding Covid-19, Management of Covid-19 and Prevention of Covid-19 (2).

GBI Bukit Pengarapan Kediri members have a good and sufficient attitude, this shows that GBI members have a positive response and are willing to understand the Covid-19 problem. This positive attitude, shown in answering the questionnaire about the indicators of understanding, has shown a supportive attitude that Covid-19 is a serious health problem and needs to be addressed immediately. Indicators of the management of Covid-19, GBI members have an attitude that agrees if the management of Covid-19 needs to be carried out, such as the importance of self-isolation, and so on. Covid-19 Prevention Indicators, GBI Bukit Pengharapan members agree in implementing the 3 M (Keeping distance, washing hands and wearing masks) (3). A positive attitude will encourage positive behavior in overcoming the Covid-19 problem.

Attitude levels: *Accepting (Receiving), Responding , Appreciating (Valuing), Responsible* (4). A good attitude towards members of GBI Bukit Pengharapan, Kediri city based on the level of attitude shows that the first has accepted the problem of the Covid-19 pandemic as a dangerous problem and has an impact on public health, the second is willing to respond by responding in the form of an attitude that agrees and will take part in not proceeding well at home, or in the community, the three want to appreciate and consider this problem to be of important value in life in the community so it is necessary for the community to be involved and involved in preventing Covid-19, and the four members of GBI Bukit Pengharapan want to be involved and responsible for carrying out Covid-19 prevention in the community. in the family as well as in life in the community or society by implementing the 3 M principles.

Factors that influence attitudes include: personal experience, the influence of others who are considered important, the influence of culture, mass media, educational institutions and religious institutions, and emotional factors (4). Based on data on the characteristics of GBI Bukit Pengharapan members, with most of them being of productive age, middle and high education, as well as moderate socioeconomic status, these are factors that support a good attitude towards the Covid-19 pandemic. With high education, GBI members will certainly have better analytical power in receiving information, as well as easy access to Covid-19 information. The experience of GBI Bukit Pengharapan members with the presence of Covid-19 cases in the community and also those who have experienced Covid-19 supports a positive attitude that the Covid-19 problem is important to be followed up in its prevention. GBI members are church members, the role of the church as a religious institution that supports efforts to prevent Covid-19 will be followed by church members, this is a strong driver for the formation of a good attitude.

According to Knowledge Notoatmodjo (5) knowledge is the result of knowing and this occurs after someone has sensed a certain object. In general, knowledge has predictive knowledge of something as a result of recognizing a pattern. Knowledge is not something that already exists and is available, Knowledge is a continuous formation by someone who is constantly reorganizing because of new understandings. GBI Bukit Pengharapan members of Kediri City have good majority knowledge, this shows that the understanding of covid includes indicators of understanding, managing and preventing covid has become a new understanding and has been well organized in thought. This understanding has been accepted and has become the concept of knowledge possessed in dealing with the problem of covid-19.

The factors that influence a person's knowledge according to Budiman (4) are: Education, Information/Mass Media, Socio-cultural and Economic, Environment, Experience, and Age. Based on the characteristics of respondents with middle and high education levels, moderate socioeconomic, experiences of members who have been positive for Covid-19 and age at productive age, this supports good knowledge. High education makes it easier for GBI Bukit Harapan members to get information and access information so that it is easy to get new understanding, especially Covid-19. The experience of GBI Bukit Pengarapan members will support understanding and knowledge of COVID-19. GBI Bukit Pengharapan members are of a productive age, of course, it will be easy to access sources of information both conventional and digital about COVID-19.

A pandemic is an event or event in a society or region from a case of a particular disease (or a case of a particular disease that has spread to many countries widely (6). Coronavirus is a viral respiratory infection disease, ranging from the common cold to serious diseases such as *Middle East Respiratory Syndrome (MERS)* and *Severe Acute Respiratory Syndrome (SARS)* (7). Transmission between humans can occur through droplets released when an infected individual coughs or sneezes at a distance of  $\pm 2$  meters. Droplets that land on the mouth or nose can be inhaled into the lungs and cause infection (Albertus, 2020). Contact on items that have been contaminated by droplets from Covid-19 patients, followed by touching the mouth, nose, or eyes without washing hands first It can also be one of the transmission routes for the spread of the virus, although this route is not the main transmission route virus run. (8) stated that there is a relationship between public knowledge and compliance with the use of masks as an effort to prevent COVID-19.

The problem of the COVID-19 pandemic is a health problem that has an impact on the health of GBI Bukit Pengharapan members because it is a transnational pandemic disease, and almost the whole

world has experienced a spike in this case. GBI Bukit Pengharapan members are at risk of transmission through droplets from people who have been infected with the Covid-19 Virus. Only asymptomatic cases who do not isolate but still mobilize are at risk of transmitting to others. Church life through worship with praise, of course, droplets from the mouth can be in the form of aerosols that are transmitted to people. GBI Bukit Pengharapan members with good knowledge will certainly encourage the behavior of people around them to want to wear masks in preventing the transmission of COVID-19.

People infected with this virus will show different symptoms. Symptoms of a coronavirus infection usually depend on the type of virus and how serious the infection is. If you have a mild to moderate upper respiratory infection, such as the common cold, your symptoms of coronavirus are: Runny nose, Headache, Cough, Sore throat, Fever, Overall feeling unwell. Other types of coronavirus can cause more serious symptoms. This infection can lead to bronchitis and pneumonia, especially in people from risk groups. Some of the more severe infections due to coronavirus are those that are generally more common in people with liver and heart disorders, or people with weakened immune systems, infants, and the elderly. (Ministry of Home Affairs, 2020)

People tend to ignore mild symptoms, so that the spread of Covid-19 spreads. GBI Bukit Pengharapan members need to be aware of this, while in cases with severe symptoms, they tend to get health services at health service centers (Hospitals/Public Health Centre) and there is assistance in self-isolation, so that transmission is more closely monitored.

One of the ways to prevent the spread of COVID-19 is vaccination. The relationship between vaccines, immunizations and herd immunity is that vaccines will make a person's body recognize certain diseases, so that when exposed to bacteria/viruses, they will become more immune. High and even immunization coverage will form *herd immunity* so that it can prevent the transmission and severity of a disease (9). Presidential Instruction for the free Covid-19 Vaccination Program for all Indonesian citizens (10).

GBI Bukit Pengharapan members need to support the government's efforts in vaccination to break the chain of transmission of COVID-19. Through vaccination, it is hoped that individuals will have immunity to COVID-19, and as a community/community have group immunity, this will be achieved if the minimum vaccination coverage is achieved at least 70% of the community. There are 4 things that can reduce the risk of being infected or spreading Covid-19 by taking some precautions (WHO, 2020). Includes: Washing hands regularly and thoroughly, Avoid touching eyes, nose, and mouth, Practice coughing and sneezing etiquette by covering mouth and nose with folded elbows or a tissue. If you use a tissue, throw it away immediately after use and wash your hands. Keep a physical distance from other people at least 1 meter.

GBI Bukit Pengharapan members in preventing the transmission of Covid-19 can do these 4 things in their daily life behavior. It is hoped that this behavior can become a pattern of life that is inherent in the community. Through the behavior of washing hands with available infrastructure at home as well as at church and in the community, it will certainly accelerate the formation of behavioral patterns. The behavior not to touch the face, especially the eyes, mouth and nose because it will be risky as a transmission of the entry of the virus in our body, must become a behavior that is a habit of the community. Ethical behavior of sneezing and coughing, by covering the mouth, of course, droplets from excretion do not become aerosols that can transmit Covid-19. The last behavior is the behavior of keeping a distance, by maintaining a minimum distance of 1 meter both indoors and outdoors, minimizing the splash of droplets from other people who are exposed to Covid-19 on our bodies, so that the risk of Covid-19 transmission can be minimized.

#### IV. CONCLUSION

GBI Bukit Pengharapan Kediri members have good attitudes and knowledge about the Covid-19 pandemic. Good attitudes and knowledge will increase the ability of the community at GBI Bukit Pengharapan to be able to prevent the transmission of Covid-19 and be able to have good motivation in supporting government programs in overcoming the Covid-19 pandemic.

## V. ACKNOWLEDGMENT

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# Analysis of Pregnant Women Class With Childbirth Preparation During the Pandemic Period at the Wajak Health Center Malang Regency

Nur Yeny Hidajaturrokhmah<sup>1\*</sup>, Suci Anggraeni<sup>2</sup>, Yamini<sup>3</sup>

<sup>1,2,3</sup> Faculty of Nursing and Midwifery, Institute of Health Sciences STRADA Indonesia, Indonesia

\* Corresponding author: [nuryenyhidajaturrokhmah@gmail.com](mailto:nuryenyhidajaturrokhmah@gmail.com)\*

## ABSTRACT

**Keywords:**  
Pregnant women class,  
Pandemic period, Childbirth preparation

**Background:** The low childbirth preparation of pregnant women during the Covid-19 pandemic is due to the many restrictions on almost all maternal and neonatal health services, including pregnant women class. Along with the COVID-19 pandemic, the government has implemented social distancing, physical distancing, and working from home as an effort to prevent the transmission of COVID-19, so that pregnant women classes are held on a limited basis through a virtual model. The purpose of this study was to know the relationship between the pregnant women class and childbirth preparation during the pandemic at the Puskesmas Wajak, Malang Regency.

**Methods:** The design of this study is a quantitative study analytic observational design with a cross-sectional approach. The population is third-trimester pregnant women with a sample of 30 respondents with a sampling technique using purposive sampling and data collection using a questionnaire. Data analysis used the statistical test of the contingency coefficient. The results showed that the implementation of the pregnant women class was mostly 19 people (63.3%) active. Most of the childbirth preparation was 16 people (53.3%) good.

**Results:** The results of the analysis showed that there was a relationship between the pregnant women class and childbirth preparation in the pandemic at the Health Center Wajak, Malang Regency ( $p$ -value <0.05.). It shows that the more active pregnant women are in participating in the pregnant women class, the better the childbirth preparation.

**Conclusions:** Pregnant women class is a very important activity for every pregnant woman to increase knowledge and understanding of childbirth preparation so that they are better prepared to face childbirth and prevent complications. Pregnant women class can improve childbirth preparation because there is a delivery of knowledge about physical, mental, and financial readiness so that childbirth goes smoothly and safely. It is hoped that pregnant women should actively participate in the implementation of pregnant women classes so that they can know about childbirth preparation so that they can make efforts to prevent complications during pregnancy, maternity, and postpartum.

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## I. INTRODUCTION

Currently, people in the world, including in Indonesia, are experiencing an outbreak of the COVID-19 pandemic which has an impact on health services, especially maternal and neonatal services. Under normal circumstances, maternal and neonatal mortality in Indonesia is still a big challenge, especially during the pandemic. For this reason, to prevent maternal and neonatal deaths, it is necessary to prepare good childbirth for every pregnant woman so that she is ready to face the childbirth period. Childbirth preparation is useful for preparing all the needs during pregnancy and childbirth. Childbirth preparation helps ensure that pregnant women can reach professional childbirth services when it begins and reduce delays when pregnant women experience obstetric complications. The unpreparedness of pregnant women in facing childbirth can affect the mother not being able to anticipate the risks that will occur at the time of childbirth so that it becomes one of the causes of the high maternal and infant mortality rate.

According to the 2016 Inter-Census Population Survey, the maternal mortality rate (MMR) is still high at 305/100 thousand live births, even though the 2015 MMR target is 102/100 thousand

live births, this figure ranks first in Southeast Asia. In East Java, the MMR tends to increase, in 2017 it reached 91.92/100 thousand live births, an increase compared to 2016 which was 91/100 thousand live births. In 2019 it was 89.81/100 thousand live births, this figure decreased compared to 2018 which reached 91.45/100 thousand live births, but the decline was not significant <sup>(3)</sup>. And about 90% of maternal deaths are caused by bleeding, toxemia gravidarum, infection, abortion, and prolonged parturition <sup>(8)</sup>. On the other hand, several studies have shown that the use of Antenatal Care (ANC) is still lacking, including in Indonesia. Although according to the 2018 Basic Health Research the coverage of ANC access (K1) is 96.1%, K4 is only 74.1%. Besides that, the implementation of pregnant women class in Indonesia is also still low, this is based on the 2016 National Health Indicators Survey which showed that most (81.8%) of mothers in Indonesia do not take part in the pregnant women class program implemented by the government. Of the mothers who participated in the pregnant women class, 6.8% participated in the complete program, and 9.0% incomplete the program <sup>(6)</sup>.

Based on a preliminary study conducted on 1-2 July 2021 on 10 pregnant women registered at the Wajak Health Center, Malang Regency by conducting online interviews via Whatsapp (WA) it was found that 6 people (60%) were in the poor category of childbirth preparation and 4 people (40%) was sufficient. Of the 6 people with insufficient childbirth preparation, all of them stated that they were less active in participating in pregnancy class, while out of 4 people with sufficient childbirth preparation, 3 people actively participated in the implementation of pregnant women class during this pandemic through the online method.

The low readiness for childbirth of pregnant women during the Covid-19 pandemic can be caused by the many restrictions on almost all services, including maternal and neonatal health services. For example, pregnant women are reluctant to go to the health center or other health service facilities for fear of being infected, there are recommendations for postponing pregnancy check-ups and pregnant women class. The implementation of pregnant women class is usually carried out routinely once a month, but along with the Covid-19 pandemic, the government has implemented social distancing, physical distancing, and working from home as an effort to prevent the transmission of COVID-19, so that activities for pregnant women class cannot be implemented. The impact of pregnant women if there is no childbirth preparation is the difficulty in determining the place of childbirth, the costs that must be prepared, the materials must be prepared for the baby, not knowing what will happen in the childbirth process, and not being able to anticipate the risks that will occur at the time of childbirth. In addition, the risks that can occur to pregnant women if there is no childbirth preparation are psychological disorders, after childbirth, the mother will experience several changes, both physical changes and psychological changes <sup>(5)</sup>.

The pregnant women class is a means to increase the knowledge and skills of mothers and families regarding pregnancy, childbirth, postpartum, postnatal family planning, prevention of complications, care for newborns, and exercise for pregnant women. During the COVID-19 pandemic, the implementation of the pregnant women class can be carried out through a virtual model. Even during the pandemic, pregnant women can still consult online and carry out pregnancy checks following previous agreements while still paying attention to health protocols. Wahyuningsih and Wintoro <sup>(16)</sup>in their research suggested that there is a relationship between the participation of pregnant women in attending pregnant women class with childbirth preparation. So research by Lucia, Purwandari, and Pesak <sup>(10)</sup>stated that there is an effect of implementing a pregnant women class on knowledge about childbirth preparation. Providing information in pregnant women class by the facilitator regularly and every week with different materials makes pregnant women regularly visiting and attending pregnant women class to stay healthy. By following the implementation of the class, pregnant women are expected to be able to anticipate the risks that will occur at the time of childbirth, so that it goes smoothly and safely.

The purpose of this study was to determine the relationship between the pregnant women class and childbirth preparation during the pandemic at the Wajak Health Center, Malang Regency. Based on these problems, pregnant women class is one of the factors related to childbirth preparation. By taking pregnant women class during an online pandemic, it is hoped that pregnant women will have good preparation in facing childbirth, so this is an important issue. If the research is carried out, it can provide benefits for both respondents and institutions. Therefore, researchers are interested in researching "Analysis of pregnant women class with childbirth preparation during

a pandemic at the Wajak Health Center, Malang Regency."

## II. METHOD

The research method used in this study was a quantitative study with an analytic observational research design, where the research was to explore the causal relationship between variables to conclude a hypothesis. The population in this study were pregnant women in the third trimester in July at the Wajak Health Center, Malang Regency numbered 55 people. Then sampling through inclusion was carried out to obtain 30 people as respondents

## III. RESULTS AND DISCUSSION

### A. Characteristics of Respondents

#### 1. Characteristics of Respondents Based on Age

Table 1 Characteristics of Respondents Based on Age at the Wajak Health Center, Malang Regency in July-August 2021

No	Age	Frequency (f)	Percentage (%)
1	< 20 Years	7	23,3
2	20-35 Years	20	66,7
3	> 35 Years	3	10
Total		30	100

Source: Research primary data in 2021

Table 1 can be interpreted that the age of respondents in the Wajak Health Center area of Malang Regency, 20 people (66.7%) were between 20-35 years.

#### 2. Characteristics of Respondents Based on Education

Table 2 Characteristics of Respondents Based on Education at the Wajak Health Center, Malang Regency in July-August 2021

No	Education	Frequency (f)	Percentage (%)
1	Primary School	0	0
2	Junior High School	11	36,7
3	Senior High School	17	56,7
4	College	2	6,7
Total		30	100

Source: Research primary data in 2021

Table 2 can be interpreted that the majority of respondents' education in the Wajak Health Center area of Malang Regency, 17 people (56.7%) were from senior high school.

#### 3. Characteristics of Respondents Based on Profession

Table 3 Characteristics of Respondents by profession at the Wajak Health Center, Malang Regency in July-August 2021

No	Profession	Frequency (f)	Percentage (%)
1	Civil Servant	2	6,7
2	Private	5	16,7
3	Entrepreneur	6	20
4	Does not work	17	56,7
Total		30	100

Source: Research primary data in 2021

Table 3 can be interpreted that the majority of respondents' profession in the Wajak Health

Center area, Malang Regency, 17 people (56.7%) did not work.

#### 4. Characteristics of Respondents Based on Family Income

Table 4 Characteristics of Respondents Based on Family Income at the Wajak Health Center, Malang Regency in July-August 2021

No	Family Income	Frequency (f)	Percentage (%)
1	< Regency Minimum Wage	10	33,3
2	> Regency Minimum Wage	20	66,7
	Total	30	100

Source: Research primary data in 2021

Table 4 can be interpreted that the family income of respondents in the Wajak Health Center area of Malang 20 people (66.7%), were above the Regency Minimum Wage.

#### B. Characteristics of Variables

##### 1. Characteristics of Variables Based on Implementation of Pregnant Women Class

Table 5 Characteristics of Variables Based on Implementation of Pregnant Women Class at the Wajak Health Center, Malang Regency in July-August 2021

No	Implementation of Pregnant Women Class	Frequency (f)	Percentage (%)
1	Active	19	63,3
2	Inactive	11	36,7
	Total	30	100

Source: Research primary data in 2021

Table 5 can be interpreted that the implementation of the pregnant women class of respondents in the Wajak Health Center area of Malang Regency, 19 people (63.3%) were active.

##### 2. Characteristics of Variables Based on Childbirth Preparation

Table 6 Characteristics of Variables Based on Childbirth Preparation at the Wajak Health Center, Malang Regency in July-August 2021

No	Childbirth Preparation	Frequency (f)	Percentage (%)
1	Good	16	53,3
2	Enough	10	33,3
3	Less	4	13,3
	Total	30	100

Source: Research primary data in 2021

Table 6 can be interpreted that the majority of respondents' childbirth preparation in the Wajak Health Center area, Malang Regency, 16 people (53.3%) were good.

#### C. Cross Tabulation between Variables

##### 1. Cross Tabulation between Age and Implementation of Pregnant Women Class

Table 7 Cross Tabulation between Age and Implementation of Pregnant Women Class at the Wajak Health Center, Malang Regency in July-August 2021

Age	Implementation of Pregnant Women Class					
	Active		inactive		Total	
	f	%	f	%	f	%
<20 Years	3	10	4	13,2	7	23,3
20-35 Years	16	53,3	4	13,3	20	66,7
>35 Years	0	0	3	10	3	10
Total	19	63,3	11	36,7	30	100

Table 7 is interpreted that the implementation of the pregnant women class for respondents under the age of 20 years were at most 4 people (13.2%) being inactive, aged 20-35 years were at most 16 people (53.3%) being active and over 35 years were at most 3 people (10%) being inactive.

## 2. Cross Tabulation between Education and Implementation of Pregnant Women Class

Table 8 Cross Tabulation between Education and Implementation of Pregnant Women Class at the Wajak Health Center, Malang Regency, July-August 2021

Education	Implementation of Pregnant Women Class					
	Active		inactive		Total	
	f	%	f	%	f	%
Junior High School	2	6,7	9	30	11	36,7
Senior High School	15	50	2	6,7	17	56,7
College	2	6,7	0	0	2	6,7
Total	19	63,3	11	36,7	30	100

Table 8 is interpreted that the implementation of pregnant women class in respondents with junior high school education was at most 9 people (30%) being inactive, senior high school was at most 15 people (50%) being active and college was at most 2 people (6.7%) being active.

## 3. Cross Tabulation between Profession and Pregnant Women Class

Table 9 Cross Tabulation between Profession and Pregnant Women Class at the Wajak Health Center, Malang Regency, July-August 2021

Profession	Implementation of Pregnant Women Class					
	Active		inactive		Total	
	f	%	f	%	f	%
Civil Servant	2	6,7	0	0	2	6,7
Private	4	13,3	1	3,3	5	16,7
Entrepreneur	3	10	3	10	6	20
Does not work	10	33,3	7	23,3	17	56,7
Total	19	63,3	11	36,7	30	100

Table 9 is interpreted that the implementation of the pregnant women class in respondents with the profession as a civil servant was at most 2 people (6.7%) being active, the private sector was at most 4 people (13.3%) being active, the entrepreneur was at most 3 people (10%) being active and inactive, while not working were at most 10 people (33.3%) being active.

## 4. Cross Tabulation between Family Income and Implementation of Pregnant Women Class

Table 10 Cross Tabulation between Family Income and Implementation of Pregnant Women Class at the Wajak Health Center, Malang Regency, July-August 2021

Income	Implementation of Pregnant Women Class					
	Active		inactive		Total	
	f	%	f	%	f	%
< Regency Minimum Wage	4	13,3	6	20	10	33,3
> Regency Minimum Wage	15	50	5	16,7	20	66,7
Total	19	63,3	11	36,7	30	100

Table 10 is interpreted that the implementation of pregnant women class in respondents with income below the regency minimum wage was at most 6 people (20%) being inactive, while the income above the regency minimum wage was at most 15 people (50%) being active.

##### 5. Cross Tabulation between Age and Childbirth Preparation

Table 11 Cross Tabulation between Age and Childbirth Preparation at the Wajak Health Center, Malang Regency, July-August 2021

Age	Childbirth Preparation						Total	
	Good		Enough		Less			
	f	%	f	%	f	%	f	%
<20 Years	1	3,3	4	13,3	2	6,7	7	23,3
20-35 Years	15	50	4	13,3	1	3,3	20	66,7
>35 Years	0	0	2	6,7	1	3,3	3	10
Total	16	53,3	10	33,3	4	13,3	30	100

Table 11 is interpreted that the childbirth preparation in respondents under the age of 20 years was at most 4 people (13.2%) being enough, aged 20-35 years was at most 15 people (50%) being good and over 35 years was at most 2 people (6.7%) being less.

##### 6. Cross Tabulation between Education and Childbirth Preparation

Table 12 Cross Tabulation between Education and Childbirth Preparation at the Wajak Health Center, Malang Regency, July-August 2021

Education	Childbirth Preparation						Total	
	Good		Enough		Less			
	f	%	f	%	f	%	f	%
Junior High School	1	3,3	7	23,3	3	10	11	36,7
Senior High School	13	43,3	3	10	1	3,3	17	56,7
College	2	6,7	0	0	0	0	2	6,7
Total	16	53,3	10	33,3	4	13,3	30	100

Table 12 is interpreted that the childbirth preparation in respondents with junior high school education was at most 7 people (23.3%) being enough, senior high school was at most 13 people (43.3%) being sufficient and college was at most 2 people (6.7%) being good.

##### 7. Cross Tabulation between Profession with Childbirth Preparation

Table 13 Cross Tabulation between Profession with Childbirth Preparation at the Wajak Health Center, Malang Regency, July-August 2021

Profession	Childbirth Preparation						Total	
	Good		Enough		Less			
	f	%	f	%	f	%	f	%
Civil Servant	2	6,7	0	0	0	0	2	6,7
Private	4	13,3	0	0	1	3,3	5	16,7
Entrepreneur	2	6,7	1	3,3	3	10	6	20
Does not work	8	26,7	9	30	0	0	17	56,7
Total	16	53,3	10	33,3	4	13,3	30	100

Table 13 is interpreted that childbirth preparation in respondents with civil servant profession was at most 2 people (6.7%) being good, the private sector was at most 4 people (13.3%) being good, the entrepreneur was at most 3 people (10%) less and not working were at most 9 people (30%) being enough.

##### 8. Cross Tabulation between Family Income and Childbirth Preparation

Table 14 Cross Tabulation between Family Income and Childbirth Preparation at the Wajak Health Center, Malang Regency, July-August 2021

Family Income	Childbirth Preparation						Total	
	Good		Enough		Less			
	f	%	f	%	f	%	f	%
<Regency Minimum Wage	5	16,7	3	10	2	6,7	10	33,3
>Regency Minimum Wage	11	36,7	7	23,3	2	6,7	20	66,7
Total	16	53,3	10	33,3	4	13,3	30	100

Table 14 is interpreted that the childbirth preparation in respondents with income below the regency minimum wage was at most 5 people (16.7%) being good, as well as those above the regency minimum wage were at most 11 people (36.7%) being good.

#### D. Statistical Test Results

The results of the statistical test analysis of the relationship between the implementation of pregnant women class and childbirth preparation during the pandemic using the contingency coefficient test with a significance level ( $\alpha$ ) of 5% (0.05) obtained the following results:

Table 15 Contingency Coefficient Test Results Relationship between Implementation of Pregnant Women Class with Childbirth Preparation During a Pandemic

Pregnant Women Class	Childbirth Preparation						Contingency Coefficient Test		
	Good		Enough		Less		Total	$C$	$p$ -value
	f	%	f	%	f	%			
Active	15	50	4	13,3	0	0	19	0,585	0,000
Inactive	1	3,3	6	20	4	13,3	11		
Jumlah	16	53,3	10	33,3	4	13,3	30		

Table 15 is interpreted that the respondent's childbirth preparation by actively participating in the pregnant women class were at most 15 people (50%) in good category and none in the less category, while the respondents who were inactive at most 6 people (20%) enough, 4 people (13.3%) in the less category and only 1 person (3.3%) in the good category. The results of the statistical test of the Contingency Coefficient obtained a p-value (sig.) of 0.000 < ( $\alpha$ ) 0.05, the decision to accept H1. This meant that there was a relationship between the implementation of pregnant women class and childbirth preparation during the pandemic at the Wajak Health Center, Malang Regency. It showed that the more active pregnant women were in participating in the class, the better the childbirth preparation. The contingency coefficient value of 0.585 indicates that pregnant women who were actively participating in the pregnant women class had an effect of 58.5 times better in childbirth preparation than those who were not actively participating in the pregnant women class.

Most of the active pregnant women took part in the pregnant women class, but there were still some who were not active, namely 36.7%. This could be due to the fact that some were still under 20 years old, where at that age they were immature and tend to be unstable, mentally immature, resulting in less attention to the implementation of pregnant women class. Likewise, with junior high school education, their mindset was also still in the poor category so they were reluctant to take pregnant women class even though it was very important to support smoothness in undergoing pregnancy, childbirth, and postpartum. In addition, the presence of pregnant women who were not actively participating in pregnant women class could be due to limited facilities and infrastructure, considering that the implementation of pregnant women online classes might have cellphones and internet packages, so pregnant women who were not actively participating in pregnant women class were most likely because there was no internet package during the pregnant women online class.

With the pregnant women class program promoted by the government so far, it had recommended all pregnant women to take part in these activities for free, so that by pregnant women class, they could add insight and knowledge about childbirth preparation, both low and high-income families, so that indirectly direct childbirth preparation for every pregnant woman was good. Although in general, most of the childbirth preparations were good and sufficient, there was a small proportion who still had relatively poor childbirth preparation, namely 4 people (13.3%). This could be due to the fact that there were people who were still under 20 years old, where at that age they were not yet mentally mature, so they were less active in attending pregnant women class. In addition, some respondents had a junior high school education level, namely 36.7%, with this level of education their understanding of childbirth preparation was very lacking so that of course it could result in less childbirth preparation. Likewise, there was the possibility of pregnant women who were less active in attending pregnant women class because of limited facilities and infrastructure, such as not having internet packages during the implementation of pregnant women class, so that it had an impact on knowledge so that childbirth preparation was lacking.

The results of this study indicated that the implementation of the pregnant women class was beneficial for the readiness of pregnant women in facing childbirth because pregnant women got information on maternal and child health, exchanged opinions, and gained knowledge and skills about childbirth preparation. Overall, the pregnant women class would have a positive impact on pregnant women in the process of preparing for childbirth. Because by taking pregnant women class, pregnant women could increase their knowledge, skills, and motivation related to awareness to improve the health of mothers and babies obtained during learning in pregnancy class, so that they could increase the mental readiness of pregnant women in facing childbirth and would cause conditions that safe, comfortable, relaxed in the face of childbirth. Good childbirth preparation could minimize the occurrence of complications that might occur that could result in death for both mother and baby. Although in general there was a relationship between the pregnant women class and childbirth preparation, in this study there was 1 person (3.3%) with a pregnant women class who were not active but had good childbirth preparation, this could be because there were 2 respondents who had a high level of education. college (Bachelor), with this education they had a better mindset and insight, so they tried to find their information about childbirth preparation, for example, reading health books or MCH books that have been given, accessing the internet, and so on.

The pregnant women class in this study was carried out online due to restrictions on face-to-face activities during the COVID-19 pandemic, so the process of class activities for pregnant women experienced problems due to several factors. Obstacles in implementing pregnant women online classes included unstable signal conditions in some areas and the lack of ability of some pregnant women to use information and communication technology in accessing online meeting applications which were still considered a new experience. Pregnant women classes that were held online were still relatively ineffective due to several existing obstacles.

#### IV. CONCLUSION

Based on the results of the research and discussion, it can be concluded that the majority of respondents at the Wajak Health Center area of Malang Regency were 19 people (63.3%) active. Most of the respondents in the Wajak Health Center area of Malang Regency, namely 16 people (53.3%) were good at giving birth. There is a relationship between the implementation of pregnant women class and childbirth preparation during the pandemic at the Wajak Health Center, Malang Regency (p-value (sig.) 0.000 <0.05.). It shows that the more active pregnant women are in participating in the class, the better the childbirth preparation.

#### V. ACKNOWLEDGMENT

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# The Effect of Progressive Muscle Relaxation Therapy of Pregnant Women's Anxiety with Gestational Hypertension in Bendo Community Health Center Kediri Regency

Dily Ekasari<sup>a,1,\*</sup>, Febrina Dwi Nurcahyanti<sup>a,2</sup>, Atriani Sriwahyuni Dere<sup>a,3</sup>

<sup>a</sup> STIKes Bhakti Mulia Kediri, Matahari Street 1 Pare District, Kediri 64212, Indonesia

<sup>1</sup> dilyekasari89@gmail.com\*; <sup>2</sup> febrina.d.nurcahyanti@gmail.com; <sup>3</sup> atrianisriwahyuni@gmail.com

\*Dily Ekasari

## ABSTRACT

**Keywords:**  
Progressive Muscle Relaxation  
*Pregnancy*  
*Hypertension*

**Background:** Anxiety as an effect of gestational hypertension in pregnant women. Every pregnant woman with gestational hypertension is usually overwhelmed by feelings of fear, worry, and anxiety especially pregnant women with pregnancy complications that increase pain, muscles become tense, and mothers become tired quickly, which can threaten the lives of mothers and fetuses. One way to reduce the anxiety of pregnant women with progressive muscle relaxation therapy. The purpose of this study was to determine the Effect of Progressive Muscle Relaxation Therapy on Anxiety Pregnant Women with Gestational Hypertension.

**Methods:** The research design was pre experimental with one group pretest - posttest design. The population is all pregnant women with gestational hypertension in UPTD Puskesmas Bendo, Kediri Regency with 36 pregnant women, a sample of 20 respondents using purposive sampling technique.

**Results:** The results showed that before being given treatment from 20 respondents, almost all respondents experienced moderate anxiety, namely 19 respondents (95.0%) and after being given treatment from 20 respondents, almost all respondents experienced mild anxiety, namely as many as 17 respondents (85.0%). The results of the data analysis of the value of sig (2-tailed) p: 0.00. Data analysis using Wilcoxon test with the provisions of the value  $p < \alpha$ ,  $\alpha : 0.05$ .

**Conclusions:** Progressive muscle relaxation therapy is suitable for reducing anxiety of pregnant women with gestational hypertension. Suggestions for health center are expected to improve the quality of services provided to patients, especially in pregnant women with gestational hypertension who experience anxiety.

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## I. INTRODUCTION

Hypertension is a medical problem that often appears during pregnancy and can cause complications in 2-3% of pregnancies. Hypertension in pregnancy can cause morbidity and pain in the mother. In addition, hypertension in pregnancy is also still a major source of causes of death in mothers (1). Every pregnant woman with gestational hypertension is usually overwhelmed by feelings of fear, worry, and anxiety. Anxiety and fear can increase pain, muscles become tense, and the mother becomes tired quickly, which in turn will threaten the lives of the mother and fetus. This will increase trauma if the mother experiences pregnancy complications such as hypertension (2).

Pre-eclampsia prevalence is 2.8% of pregnancies in developing countries, and 0.6% of pregnancies in developed countries. The incidence of hypertension during pregnancy in the population of pregnant women in America ranges from 3.6% to 9.1%, preeclampsia 1.4% to 4.0% and the initial signs of preeclampsia as much as 0.3% to 0.7% (WHO, 2017). Based on the 2017 Indonesian Demographic Health Survey (IDHS), MMR recorded 359/100 thousand live births. These deaths have recorded a significant increase compared to the 2012 IDHS results which recorded 228/100 thousand live births (Kemenkes RI, 2017). In 2017 in East Java Province there were 642 deaths. From the data

from 2016 to 2017, the maternal mortality rate has increased. The direct causes of Maternal Mortality Rate (MMR) in East Java Province include: bleeding 21.81%, eclampsia / preeclampsia 36.29%, heart 12.93%, infections 22.90%, and other causes 6.07% (Health Office of East Java Province, 2017).

Based on the results of a preliminary study conducted at Community Health Centre Bendo, Pare District, Kediri Regency, there were 5.23% of pregnant women who had gestational hypertension from 126 pregnant women, and for the last 3 months there were 36 pregnant women with gestational hypertension..

## II. METHOD

The research method used in this study used a pre-experimental design with the "One Group Pretest-Posttest Design" approach (3). The variables in this study are progressive muscle relaxation therapy as the independent variable and anxiety level as the dependent variable. The population of all pregnant women with gestational hypertension in Community Health Centre Bendo, Pare Doistrict Kediri Regency was 36 pregnant women with purposive sampling technique. Sample: All pregnant women with gestational hypertension in Community Health Centre Bendo, Kediri Regency were 20 respondents.

## III. RESULTS AND DISCUSSION

Characteristics of respondents is known that of the total 20 respondents mostly aged 20-35 years, 15 respondents (75.0%), and from 20 respondents almost half the respondents had a junior high school education that was 8 respondents (40.0%). Of the 20 respondents for the majority of respondents working as private / entrepreneurs aged 20-35 years, namely 12 respondents (60.0%), the income of the 20 respondents mostly earned <1,000,000 ie 12 respondents (60.0%). It is also known from 20 respondents that all respondents had received information about health during pregnancy, namely 20 respondents (100%) and 20 respondents had received information about health during pregnancy so all respondents received information from health workers namely 20 respondents (100%), for 20 respondents, the majority of the number of deliveries was 2, 6 respondents (30.0%).

Table 1. Identification of Anxiety Pregnant Women with Gestational Hypertension Before Progressive Muscle Relaxation Therapy is given at Community Health Centre Bendo, Kediri Regency

No	Worry	n	%
1	There is no anxiety	0	0,0%
2	Mild anxiety	1	5,0%
3	Medium anxiety	19	95,0%
4	Severe anxiety	0	0,0%
	amount	20	100%

Based on the table Based on table 7 note that before being given treatment from 20 respondents almost all respondents experienced moderate anxiety that is as many as 19 respondents (95.0%). The level of anxiety is influenced by the age factor of pregnant women where for age> 35 years is generally not the first experience for a woman but often this is an unplanned event. Even though at that age a woman is ready to accept the presence of a child and carry out her duties as a mother, pregnancy in> 35 years has the potential to cause congenital abnormalities resulting in a feeling of anxiety experienced by pregnant women. According to research conducted by Diana Savitri Hidayati in January 2015 with the title psychological background of anxiety of pregnant women>35 years and over, is very influential with the anxiety that she experiences by pregnant women. For pregnant women aged <20 years can cause problems because of physical and emotional conditions that are not 100% ready (Heriani, 2016).

Most respondents (60.0%) work as private employees / entrepreneurs. Lestari (4) said that work is a busy activity done by someone especially to protect their lives and family so that they produce an income in the form of money. As income increases, maintenance and health services can be guaranteed, so that the mother can know the condition of her self and her baby. Income of respondents also affects the level of anxiety of respondents. Most of the respondents' income is the lower class namely <1,000,000 (60.0%). This is supported by the opinion of Stuart (5) which states

that a low economic status in a person will cause that person to experience stress more easily than those who have a higher economic status. According to researchers, if someone does not have enough income it will interfere with the health of pregnant women, especially pregnant women with pregnancy complications such as gestational hypertension because they think of the costs for examinations in hospitals that require no small amount so income also affects the anxiety experienced by pregnant women, especially with childbirth complications such as pregnancy hypertension.

Sources of health information are an important part of whether the information is obtained from print, electronic, or directly from health workers through routine examinations or by attending health education. Supported by the opinion of Novriani, et al (2017) that with good health information it will be more important for health. According to researchers with health information obtained especially in pregnant women with gestational hypertension very well so they are able to know the health problems they face so there will be an awareness within themselves to always check their health.

Table 2. Identification of Anxiety for Pregnant Women with Gestational Hypertension after Progressive Muscle Relaxation Therapy was given at Community Health Centre Bendo, Kediri Regency

No	Worry	n	%
1	There is no anxiety	2	10,0%
2	Mild anxiety	17	85,0%
3	Medium anxiety	1	5,0%
4	Severe anxiety	0	0,0%
	amount	20	100%

Based on table 2 it is known that after being given the treatment of 20 respondents almost all respondents experienced mild anxiety that is as much as 17 respondents (85.0%).

The results of the study for anxiety levels experienced by pregnant women before progressive muscle relaxation where for 19 respondents (95.0%) who experienced moderate anxiety and 1 respondent experienced mild anxiety and after doing progressive muscle relaxation 17 respondents (85.0%) experience mild anxiety. While of the 19 respondents who initially experienced moderate anxiety after doing progressive muscle relaxation therapy 3 respondents did not experience any changes where they still experienced moderate anxiety caused by the age factor of pregnant women for 1 respondent with age > 20 years with a college education level for 2 respondents with 35 years of age with a low level of education, anxiety of pregnant women is not reduced also from income > 1,000,000 for the 2 respondents and for 1 respondent because this is the first delivery / primigravida. Especially with pregnancy complications such as gestational hypertension, there are many factors that cause pregnant women not to experience anxiety reduction. Of the overall respondents there were 85.0% of respondents who experienced a decrease in anxiety after progressive muscle relaxation therapy. There is a significant relationship between progressive muscle relaxation with the decrease in anxiety experienced by the mother in the UPTD Puskesmas Bendo because with progressive muscle relaxation therapy, a mother will feel reduced muscle tension and feel more calm and relaxed (6).

The education factor is also very influential on anxiety experienced by pregnant women, where education, work, the source of information obtained and income also greatly affects the anxiety experienced by pregnant women, especially with pregnancy complications such as gestational hypertension, it will affect the psychological, physical, and social aspects of pregnant women. From the results of research conducted, researchers argue that anxiety can increase maternal blood pressure during pregnancy. This is reasonable because of sudden changes in the activities that respondents usually do, including during pregnancy. So that progressive muscle relaxation therapy is suitable for reducing anxiety of pregnant women with gestational hypertension / high blood pressure 140/90 mmHg. Based on the results obtained after doing progressive muscle relaxation high-risk pregnant women will become more relaxed, reduce muscle tension due to excessive anxiety so that the natural relaxation response in the body is marked by a decrease in blood pressure, becoming more relaxed, giving rise to a calmer and happier feeling so that psychologically the anxiety of pregnant women.

Table 3. Analysis of the Effect of Progressive Muscle Relaxation Therapy on Anxiety Pregnant Women with Gestational Hypertension in Community Health Centre Bendo, Kediri Regency

No	Anciety Pre Test	Anciety Post Test						Total	
		No Anciety		Mild		Mild		F	%
			Anciety	F	%	Anciety			
1	Mild Anciety	0	0,0	1	100	0	0,0	1	100
2	Mild Anciety	2	10,5	16	84,2	1	5,3	19	100
	Total	2	10,0	17	85,0	1	5,0	20	100

Based on table 3 it is known that the results of cross tabulation of 1 respondent who before treatment experienced mild anxiety after being given the treatment all experienced mild anxiety (100%). While of the 19 respondents who experienced moderate anxiety after being given treatment, almost all respondents experienced mild anxiety (84.2%). There is a positive relationship between the effect of progressive muscle relaxation therapy with the anxiety of pregnant women with gestational hypertension because the anxiety felt by the mother will have an impact on the muscle tension felt by the pregnant woman. So it is necessary to do progressive muscle relaxation therapy to reduce muscle tension, if successful, the hypothalamus will adjust and decrease sympathetic and parasympathetic nervous system activity, lower blood pressure and pulse.

No	Variable	A	P
1.	Pre-test-post test anxiety	0,05	0,000
2.	N = 20		

Based on data analysis using Wilcoxon test results obtained p value = 0,000 and the level of error ( $\alpha$ ) = 0,05, so  $p < \alpha$ , then  $H_0$  is rejected and  $H_1$  is accepted meaning that there is an effect of progressive muscle relaxation therapy on anxiety of pregnant women with gestational hypertension in UPTD Puskesmas Bendo, Kediri Regency. There is a positive relationship, blood pressure before and after progressive muscle training therapy from moderate anxiety to mild anxiety. Anxiety level experienced by respondents with a difference of 1 respondent who before treatment experienced mild anxiety and 19 respondents experienced moderate anxiety, after being given treatment all experienced mild anxiety (100%).

#### IV. CONCLUSION

- Provide a statement that what is expected, as stated in the "Introduction" chapter can ultimately anxiety as a result of Gestational Hypertension in pregnant women, this is caused by a reaction that appears to stressors that is an increase in blood pressure and can disrupt sleep patterns or rest that can be triggered by anything both from within, family, community, and the environment. anxiety is a normal response of every individual in dealing with stressors when pregnant women experience a real threat to their pregnancy, then the anxiety response will appear from mild to panic levels, this depends on the severity experienced by the mother.
- Based on the Bivariate analysis, it is known that of the 1 respondent who experienced mild anxiety after being given treatment, all experienced mild anxiety (100%). While of the 19 respondents who experienced moderate anxiety after being given treatment, almost all respondents experienced mild anxiety (84.2%).
- Based on data analysis using Wilcoxon
- test results obtained p value = 0,000 and the level of error ( $\alpha$ ) = 0,05, so  $p < \alpha$ , then  $H_0$  is rejected and  $H_1$  is accepted, meaning that there is an effect of

progressive muscle relaxation therapy on the anxiety of pregnant women with gestational hypertension in the face of labor in Community Health Centre Bendo, Kediri Regency.

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# The Effect Of Murottal Combination Progressive Muscle Relaxation On Stress Level In The Elderly At Lks-Lu, Kasembon Village, Malang Regency

Ahmad Wasis Setyadi<sup>\*1</sup>, Rischar Beny Riswanto<sup>2</sup>, Zainur Rofiq<sup>3</sup>,

<sup>1</sup>Community Nursing, Nursing, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>2</sup>Community Nursing, Nursing, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>3</sup>Community Nursing, Nursing Student, STIKes Bhakti Mulia, Kediri, Indonesia

\*Corresponding Author E-mail: [ahmadwasisw@gmail.com](mailto:ahmadwasisw@gmail.com)

## ABSTRACT

**Keywords:**

Elderly Stress,  
Progressive Muscle  
Relaxation,  
Murottal.

**Background:** Stress that occurs in the elderly can decrease in ability. The purpose of this study was to analyze the effect of progressive muscle relaxation with murottal combinations on stress levels in the elderly in LKS-LU Kasembon Village, Malang Regency.

**Methods:** We conducted pre-experimental research design using one group pretest-posttest design. The population was all elderly who had signs and symptoms of stress in LKS-LU Kasembon Village, Malang Regency with a sample of 30 elderly people using purposive sampling technique. The analysis test used a paired sample t test with a significant level of 0.05.

**Results:** Respondents who had a moderate level of stress before treatment was 14 respondents (46.6%). After treatment, elderly who had a stress level with a mild category and no stress as many as 12 respondents (40%) each. Mean difference score level of stress experienced by the elderly before and after giving progressive muscle relaxation combination murottal was 7,933 with confidence interval was 6,709 to 9,158. Paired sample T test showed a significant  $\rho$  value 0,001 ( $\alpha < 0,05$ ).

**Conclusions:** Progressive muscle relaxation and murottal listening are effective in reducing the stress level felt by the elderly in LKS-LU Kasembon Village, Malang Regency.

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## 1. INTRODUCTION

The aging process can cause various changes in life, both physically, biologically, socially, economically and mentally. One of the mental problems that are often encountered in the elderly is stress (Erlis & Khairani, 2020). Stress is something that often happens in everyday life that is difficult to avoid (Rahayuni et al., 2015). Stress in the elderly will affect the activities of the elderly because it can cause loss of appetite, talk excessively or also withdraw, symptoms of a flushed face or body shivering with cold, and so on (Selo et al., 2017).

Stress will have a negative impact, by triggering symptoms of dizziness, high blood pressure, irritability, sadness, difficulty concentrating, changing appetite, and not being able to sleep. This situation affects the quality of life. Stress that occurs in the elderly is an unbalanced condition that occurs throughout the body that is triggered when the person concerned sees an imbalance between biological, psychological and social resource systems and conditions, where there is a decrease in ability (Sutioningsih et al., 2019). The elderly experiencing stress have to deal with the loss of their role, social status, and separation from loved ones (Ina & Siti, 2020).

According to WHO (*World Health Organization*) in 2020, it is estimated that by 2050 the world's elderly population will increase by 80% today. The Central Statistics Agency (PBS) estimates

that the world's elderly population will reach 15.8% in 2035. Indonesia is one of the top five countries with the largest number of elderly populations in the world, reaching 7.5% in 2020. Based on projected data, the number of elderly people in Indonesia as much as 9.03% in 2020 (BPS, 2020).

Based on Basic Health Research Data (Risikesdas) in 2019, data shows that the prevalence of emotional mental disorders (depression, stress, anxiety, and helplessness) in the elderly group is 28.6% higher when compared to the results of Risikesdas in the previous year which ranged between 23%. The prevalence of people experiencing mental emotional disorders in East Java is 6.5% of the analyzed subjects (Risikesdas, 2020). The prevalence of stress in the elderly is around 8-15% and the results of surveys from various in Indonesia obtained the average prevalence of depression in the elderly is 13.5% with a ratio of women and men is 14.1% vs. 8.6%, where women are twice as more than men (Sri & Anjar, 2021).

Based on the results of a preliminary study at the LKS-LU Kasemon Malang on May 24, 2021, by observing data on the number of elderly people in LKS-LU as many as 52 elderly with the number of male elderly as many as 18 elderly (34.6%) and the number of female elderly as many as 34 elderly (65.4%). The researcher conducted an assessment by conducting structured interviews using a checklist sheet on 10 elderly people with stress symptom questions filled in and directed by the researcher. The results of the structured interview showed that from 10 elderly people who had at least 2-3 signs and symptoms of stress as much as 20-30%. The results of 10 elderly types of signs and symptoms of stress that most commonly occur in the elderly are psychological symptoms as much as 80% and behavior as much as 70%. Psychological symptoms such as; anxious, feeling helpless, irritable, sad and offended, hopeless, and afraid. While behavioral symptoms such as; often silent, lose the zest for life, discouraged, talkative, aggressive, sensitive and lazy to work.

Physiologically, stress experiences *general adaptation syndrome* involving the autonomic nervous system and endocrine system. *General adaptation syndrome* consists of three stages of alert reactions involving the mobilization of defense mechanisms from the body and mind to deal with stressors, the stress response is a generalized and non-specific pattern of nervous and hormonal reactions to any situation that threatens homeostasis, initiated by the brain and regulated by the endocrine system. sympathetic branch of the autonomic nervous system (Septiana & Zulfikar, 2021).

The resistance reaction is the stage where the body tries to survive in the face of prolonged stress and maintains sources of strength, the adaptation stage in which the endocrine system and sympathetic system continue to secrete stress hormones. The psychobiological process is a pathway that stimulates biological systems using autonomic, neuroendocrine and immunological responses to activate the central nervous system, stress is received by the brain as a response that is transmitted to the hypothalamic-pituitary-adrenal (HIPA) axis. HIPA stress also activates the axis of the autonomic nervous system which innervates the tissues of the immune system, resulting in the release of catecholamine substances, causing some of the adrenal medulla to secrete excessive epinephrine and norepinephrine into the blood circulation (Rustam & Tentama, 2020). Based on the theory above states that there are several factors that can affect stress include physiological aspects, behavioral aspects and cognitive aspects. The biological aspect describes individuals who feel disturbed, thereby inhibiting their activities such as delaying laziness and decreasing avoidance functions. Cognitive aspects describe how individuals deal with their environment. (Septiana & Zulfikar, 2021).

Stress management needs to be owned by every individual, including the elderly, in order to be able to cope positively with the stress that afflicts them. Stress management is a program to control or measure stress that aims to identify the causes of stress and know the techniques for managing stress, so that people are better at dealing with stress in life (Rizki, 2017). Promotive efforts need to be made not only to increase the awareness of the elderly about the importance of being physically healthy, but also psychologically healthy. Elderly who have achieved self-integrity will have high self-esteem, value their life as meaningful, see things as a whole (demands and meaning of life), accept the values and uniqueness of others, accept and adjust to the death of their partner, accept the arrival of death, carry out routine religious activities., participate in social activities (Fijriyati & Yanita, 2020).

Stress management is carried out with pharmacological treatment in the form of anti-anxiety (drugsaxiolytic) and anti-depressant (anti- depressant) which in their application cause considerable dependence. Stress that occurs in the elderly can be handled by teaching relaxation techniques as a

non-pharmacological stress treatment (Sari, et al., 2015). Antidepressant drugs take about 2–4 weeks to work and relieve symptoms experienced by people with depression. Consumption of drugs also takes a long time, which is 6-12 months. Do not increase, decrease, or stop antidepressant medications without checking and consulting your doctor. Consideration for dose changes will be made according to the patient's condition and response to therapy. The doctor will reduce the dose of the drug gradually. If drug consumption is stopped suddenly, symptoms of depression will reappear (Merry, 2020).

Solutions for dealing with stress in the elderly based on Psychiatric Medicine and Mental Health use repression, namely by doing progressive muscle relaxation (ROP). ROP which is a type of relaxation therapy by tensing certain muscles then releasing muscle tension and relaxing a group of muscles, and reducing muscle tension when relaxed. ROP is a way to separate the specific settings of the muscle, temporarily tense the muscle, then relax it. ROP is carried out within 15-30 minutes, with a frequency of 2 times a day and within one week to see a decrease in stress levels (1).

Another solution according to Psychiatric Medicine and Mental Health is using projection by having faith in God Almighty to be able to overcome the problem. Projection by listening to the reading of the Qur'an or murottal well can comfort when feeling sad, calm an anxious soul and soften a hard heart, and bring instructions (2). This relaxation therapy uses a specific chorus of sounds designed to create a relaxing effect. Murottal Al-Qur'an is one of the ways we pray and worship (Nia, 2019). Based on the problems above, researchers are interested in researching "The Effect of Murrotal Combination Progressive Muscle Relaxation on Reducing Stress Levels in the Elderly in LKS-LU Kasembon Malang".

## II. METHODS

The design of this study used pre-experimental research. Which only involves one group and there is no comparison or control group (Rukminingsih, 2020). The pre-experimental research design used approach *one group pretest-posttest design*, which was to reveal cause and effect by involving one group of subjects. This study was observed twice, namely before the experiment and after the experiment (3). This research was conducted in June – July 2021 at LKS-LU Kasembon Malang . The population is all elderly who have signs and symptoms of stress as many as 32 and 30 samples with inclusion and exclusion criteria and who have mild to severe DASS results. The independent variable was progressive muscle relaxation with murottal combination, the dependent variable was the level of stress in the elderly. The dependent variable was collected by questionnaires and checklists and analyzed by using the paired sample T-test. Accuracy of  $p = <0.05$  then  $H_0$  was rejected and  $p = >0.05$ , then  $H_0$  was accepted.

Table 1 *One Group Pre-test and Post-test Design*

Kelompok	<i>Pre-test</i>	Treat	<i>Post-test</i>
Ekperiment	$O_1$	X	$O_2$

Description:

$O_1$  = Stress level in the elderly before giving progressive muscle relaxation murottal combination.

X = Giving progressive muscle relaxation combination murottal.

$O_2$  = level of stress in the elderly after the administration of a combination of progressive muscle relaxation murottal.

### III. RESULTS AND DISCUSSION

#### Characteristics of Respondents

Table 1 General Data of Respondents in LKS-LU Kasembon Malang in 2021.

No.		Frequency	Percentage (%)
<b>Age</b>			
1	60 - 70 years	10	33,3
2	71 - 80 years	15	50
3	81 - 90 years	3	10,0
4	>90 years	2	6,7
	Total	30	100
<b>Gender</b>			
1	Male	12	40
2	Female	18	60
	Total	30	100
<b>Previous Education</b>			
1	No school	10	33,3
2	Elementary School	18	60
3	Junior High School	2	6,7
4	Senior High School	0	0
5	College/University	0	0
	Total	30	100
<b>Previous Jobs</b>			
1	Not Workong	5	16,7
2	Labor	7	23,3
3	Farmer	11	36,7
4	Private	4	13,3
5	Entrepreneur	3	10
6	Civil Servant	0	0
	Total	30	100
<b>Environmental Situations</b>			
1	Heavy Life Burden	13	43,3
2	Conflict	11	36,7
3	Frustration	6	20
	Total	30	100
<b>Family Economic Status</b>			
1	High	4	13,3
2	Medium	17	56,7
3	Low	9	30,0
	Total	30	100
<b>Health Information Resources</b>			
1	Television	18	60
2	Mobile Phone	1	3,3
3	Radio	9	30
4	Newspaper/magazine	0	0
5	Health worker	2	6,7
	Total	30	100

Source: LKS-LU Husnul Khotimah in August 2021, n=30.

Based on table 1 above, from 30 respondents, the data shows that half of the respondents have an age of 71 - 80 years as many as 15 respondents (50%), most of the respondents are female as many as 18 respondents (60%), most of the respondents have an elementary school education level ( SD) as many as 18 respondents (60%), almost half of the respondents work as farmers as many as 11 respondents

(36.7%), almost half of the respondents have an environmental situation with a heavy living burden as many as 13 respondents (43.3%), most of the respondents 17 respondents (56.7%) had family economic status in the medium category, and 18 respondents (60%).

Table 2 Stress Levels of Respondents Before Giving Murottal Combination Progressive Muscle Relaxation at LKS-LU Kasembon Malang in 2021

No.	Stress Level in Elderly	Frequency	Percentage (%)
1	Normal	0	0
2	Mild	8	26,7
3	Moderate	14	46,6
4	Severe	5	16,7
5	Very severe	3	10
	Total	30	100

Based on table 2, it is known that from 30 respondents, it was found that almost half of the respondents had a moderate level of stress as many as 14 respondents (46.6%).

Table 3 Respondents' Stress Levels After Giving Murottal Combination Progressive Muscle Relaxation at LKS-LU Kasembon Malang in 2021

No.	Tingkat Stress Lansia	Frequency	Percentase (%)
1	Normal	12	40
2	Mild	12	40
3	Moderate	6	20
4	Severe	0	0
5	Very severe	0	0
	Total	30	100

Based on table 3, it is known that from 30 respondents, it was found that almost half of the respondents had a level of stress in the mild category and 12 respondents (40%).

Table 4 Test Results The Effect of Giving Progressive Muscle Relaxation Murottal Combination to Stress Levels in the Elderly Using *Paired Sample T Test*

Variabel	n	Mean	Standard Deviation	p value
Stress Levels Before and After Treatment	30	7.933	3.279	0,000
Confidence Interval of the Difference		Lower = 6,709 and Upper = 9,158 (95%)		

\*Trust rate value of 95% with  $\alpha = 0.05$

Based on 4 above, the results of the *paired sample t-test* on stress levels before and after giving the murottal combination ROP are that the value is significant or *value*  $0.000 > (0.05)$  which means that there is an effect of murottal combination ROP on the stress level of the elderly in LKS-LU Kasembon

Malang in 2021. The difference score between the average stress levels experienced by the elderly before and after giving the murottal combination ROP is 7.933 and the difference in stress levels in the elderly is between 6.709 to 9.158.

## **Discussion.**

### **1. Identification of Stress Levels before Giving Murottal Combination Progressive Muscle Relaxation.**

The results of the study based on table 2, it is known that from 30 respondents, it was found that almost half of the respondents had a moderate level of stress as many as 14 respondents (46.6%). While a small proportion of the elderly experienced stress levels before giving murottal combination ROP with heavy and very heavy categories as many as 3-5 respondents (10% - 16.7%).

According to Stanley & Beare (2017), stress is a condition experienced by the elderly when there is a mismatch between the demands received and the ability to cope. Stress occurs in the elderly when the stressor is felt and perceived as a threat, causing anxiety which is the beginning of physical and psychological health disorders in the form of changes in physiological, cognitive, emotional, and behavioral functions. Elderly who experience prolonged stress will be able to cause various diseases that can make the elderly more helpless. Stress in the elderly who live in the family can be caused by conflicts in the family, such as behavior that is not in accordance with expectations, desires and ideals and opinions that cannot be united (Khaidir & Nora, 2018).

The opinion of the researcher on the results of the study which shows that the level of stress in the elderly with the medium category is due to the age of the elderly who are classified as old age, namely the age of 71 - 80 years, because at that age there is a lot of decline in function. The older the age, there will be a very large decrease in strength, even though they do not do strenuous physical activity, the elderly will still feel tired. Gender factors can affect stress levels in the elderly with female gender due to elderly women experiencing depression faster than men this is due to hormones in women being more volatile or causing anxiety and for recovery the slowest because women use feelings in dealing with any problems both from family and from yourself. The level of stress in the elderly in the medium category is also caused by the education of the respondents, most of whom are elementary schools, who have low knowledge of coping mechanisms in solving their life problems, so that respondents find it difficult to meet the heavy needs of life. The respondents' occupations, which on average are farmers, have a low economic level, so that family members are unable to care for them on the grounds that family members work and choose to be cared for by LKS-LU.

### **2. Identification of Stress Levels After Administration of Murottal Combination Progressive Muscle Relaxation.**

The results of the study based on table 3, it is known that from 30 respondents, it was found that almost half of the respondents who were given murottal combination ROP had stress levels in the mild category and not stressed as many as 12 respondents (40%). While a small number of respondents after giving the murottal combination ROP had a moderate level of stress as many as 6 respondents (20%).

According to Nova et al (4), stating that ROP therapy is a relaxation technique given to the elderly that can calm the mind and relax stiff muscles. This ROP is carried out starting from the muscles in the legs, hands, abdomen, chest, and face by lifting certain muscles and then releasing the tension, and the

elderly can feel both when the muscles are tense and relaxed. This ROP therapy can be combined with other therapies, namely murottal with religious improvement by listening to the reading of the verses of the Qur'an with tartil will get peace of mind (2).

The researcher's opinion about the stress level of the elderly has decreased that at the beginning of the data that most of the respondents have a stress level, then after giving the murottal combination ROP it can reduce the number of moderate stress levels to a small percentage of all respondents. This can be influenced by the activeness and compliance of respondents in following the therapy of giving murottal combination ROP which is guided by the researcher. Murottal combination ROP therapy has a positive impact so that it helps respondents to relax and reduce stress. The main factor that makes respondents to be active in these activities, because the average age of the elderly is above 70 years trying to accept their situation, so that the elderly can adapt to their environment by organizing their beliefs and surrender to God.

### **3. Analysis of the Effect of Murottal Combination Progressive Muscle Relaxation on Stress Levels in the Elderly at LKS-LU Husnul Khotimah.**

The results of the study based on 4 above, the results of the paired sample t test about the level of stress before and after giving the murottal combination ROP that the value is significant or *value* 0.001 > (0.05) which means that there is an effect of murottal combination ROP on the stress level of the elderly in LKS -LU Kasemon Malang in 2021. The difference score between the average stress levels experienced by the elderly before and after giving the murottal combination ROP is 7.933 and the difference in stress levels in the elderly is between 6.709 to 9.158.

ROP therapy as a therapy to help relieve some symptoms related to stress that can relieve muscle tension consciously (Fitrianti & Putri, 2018). ROP is easy to do because it can be done alone without being assisted by others and can be done in groups (5). The combination of listening to the reading of the Qur'an properly and calmly can comfort when feeling sad, calm an anxious soul and soften a hard heart, and bring instructions, and lighten the burden (2).

The researcher's opinion about the results of the study above is that the level of stress experienced by the elderly after the administration of murottal combination ROP is carried out on the elderly living in LKS-LU that the condition of stress levels can disrupt emotional stability. Elderly who experience stress will show symptoms of irritability, excessive anxiety about everything, feeling sad, and depressed. Other emotional symptoms are also characterized by a feeling of not being able to overcome the problem of feeling afraid or discouraged, feeling depressed and restless.

Researchers also assume that listening to the recitation of the holy Qur'an can reduce stress hormones, activate natural endorphins, increase feelings of relaxation, and distract from fear and tension. Murottal combination ROP therapy is very effective for reducing the level of perceived stress because it can provide a relaxing effect and has very minimal contraindications, and by listening to murottal respondents have high confidence that God can help alleviate and solve problems experienced by respondents. The results of this study are in line with the results of research conducted by (Sari Rahayu and Endarsih, 2018).

## **IV. CONCLUSION**

1. The stress level of the elderly before treatment shows that almost half of the respondents have a moderate level of stress as many as 14 respondents (46.6%)
2. The stress level of the elderly after the treatment shows that almost half of the respondents have a level of stress with a mild category and no stress as many as 12 respondents (40%)

3. There is an effect of murottal combination ROP on the stress level of the elderly in LKS-LU Kasembon Malang in 2021 with an average difference between 6.709 to 9.158.

## V. ACKNOWLEDGMENT

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# Analysis of Food Diversity Consumption in Stunting Toddlers

Lia Agustin<sup>1</sup>, Dian Rahmawati<sup>2</sup>, Yunda Dwi Jayanti<sup>3</sup>

<sup>1,2</sup>Akademi Kebidanan Dharma Husada Kediri, Kediri, Indonesia

<sup>3</sup>RSUD Kilisuci, Kediri, Indonesia

[liaagustin77.la@gmail.com](mailto:liaagustin77.la@gmail.com)

## AB STRAC T

**Keywords:**  
Diversity of Food Consumption,  
Stunting Toddlers

**Background:** Stunting is a child malnutrition that occurs in several countries with a height value compared to the age of -2 SD. Stunting is often considered a common thing in society. This growth disorder starts from pregnancy until the child is 5 years old. Micro and macronutrient deficiency in infants is a problem that is often experienced in Indonesia. The purpose of this study was to determine the description of the consumption of food diversity in stunting toddlers.

**Methods:** The research method used in this study is descriptive with a cross sectional approach. The population is stunting toddlers in Bangkok village with 25 toddlers. The sampling technique is total sampling. The research variable is the consumption of food diversity in stunting toddlers. Data obtained from interviews and filling out the IDDS questionnaire. The results were processed by means of univariate analysis of each food consumption variation of stunting toddlers.

**Results:** The results showed. toddlers consume about 84% of cereals/tubers, 60% of eggs and 60% of fats and oils. In conclusion, 56% of stunting toddlers consumed a variety of foods based on the results of interviews and IDDS filling.

**Conclusions:** This study shows that stunting toddlers in Bangkok village need to increase the diversity of food types. Socialization to parents needs to be improved and supervision of children's growth and development also needs to be improved by health workers

**Conclusions:** Pada penelitian ini menunjukkan balita stunting di desa Bangkok perlu peningkatan keragaman jenis pangan. Sosialisasi kepada orang tua perlu ditingkatkan dan pengawasan tumbuh kembang anak juga perlu ditingkatkan oleh tenaga kesehatan

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## I. INTRODUCTION

Stunting remains a major problem in the world. Although the incidence is decreasing, the affected children are increasing. The impact of stunting is mortality, morbidity and other impacts such as child cognitive. Stunting is also one of the descriptions of the welfare status of a country, with the number of stunting cases reflecting that the poverty rate in the country is also increasing [1]. The incidence of stunting in Indonesia from 2013 was 37.2%, this number continues to increase from 2010 (35.6%) and 2007 (36.8%) [2]. The process of introducing several types of food to toddlers needs to be done early, because each type of food has a different nutritional value [3].

The type of food given to toddlers is one of the determinants of stunting. Children in the first 2 years require very complex nutrition because complementary feeding begins after 6 months of birth [4]. In East Java Province, the prevalence of stunting under five is 26.7% of the total population of children under five in East Java Province [5]. To support the growth and development of toddlers, choosing the type of food is very important to meet the nutritional needs. In general, there are 6 nutrients needed by the body, namely carbohydrates, fats, proteins, vitamins, minerals such as iron (Fe) and zinc (Zn)[6].

Diverse food consumption habits among toddlers in Indonesia are still a problem. Food diversity is seen from 4 or more types of food eaten from 7 types of food groups [5]. In Indonesia, most of the feeding for toddlers is dominated by the type of food sourced from carbohydrates and the lack of intake of animal protein, fruit and vegetables [7]. Several studies have shown that low dietary diversity is associated with an increased risk of stunting and other nutritional problems such as overweight, dyslipidemia, metabolic syndrome [8].

Research related to the diversity of food consumption in stunting toddlers in Bangkok Village, Gurah District, Kediri Regency. Based on this, the purpose of this study is to find out the description of the food diversity consumption of stunting toddlers.

## II. METHOD

The research method used in this study is descriptive with a cross sectional approach. The population is stunting toddlers in Bangkok village with 25 toddlers. The sampling technique is total sampling. The research variable is the diversity of food consumption in stunting toddlers. The data used are primary data obtained from interviews and filling out the IDDS questionnaire. Food diversity is measured using the recall method, after which the data is entered in the IDDS (Individual Dietary Diversity Score) questionnaire consisting of 9 food groups. If the score is 0-5 then the food is categorized as not diverse, but if the score is more than 5 then it is called diverse. univariate analysis method for each food variety of stunting toddlers.[9]

## III. RESULTS AND DISCUSSION

Table 1. Characteristics of Respondents

No	Characteristics of Respondents Based on	Jumlah	Percentase
1.	Mother's Age		
a.	< 20 years	1	4
b.	21 - 35 Years	14	56
c.	> 36 Years	10	40
2.	Mother's Education		
a.	No School - Elementary school/ equivalent	2	8
b.	Middle school/equivalent	9	36
c.	High school / equivalent - College	14	56
3.	Child Gender		
a.	Man	11	44
b.	Woman	14	56
4.	Birth Weight		
a.	Low Risk (2500 grams - 4000 grams)	19	76
b.	High Risk (< 2500 grams / > 4000 grams)	6	24

### 2020 Research Primary Resources

Based on the data above, it was found that the mother's age was at the most moderate risk, namely the age of 21-35 years around 56%, the mother's education was at most higher education 56%, namely high school / equivalent -college. Data Most children are female, namely 56% and the child's birth weight is the most low risk 76%, which is around 2500 grams to 4000 grams.

Table 2. Consumption of Food Diversity for Stunting Toddlers

Consumption Pattern Based on IDDS	Types of Diversity of Food Consumption of Stunting Toddlers										Foods Rich in Vitamin A from Fruits and Vegetables		Fruit		Vegetables		Fats and Oils	
	Cereals and Tubers		Animal Meat		Processed Milk		Egg		Nuts		Foods Rich in Vitamin A from Fruits and Vegetables		Fruit		Vegetables		Fats and Oils	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Consuming	21	84	8	32	12	48	15	60	5	20	10	40	1	4	11	44	15	60
Not Consuming	4	16	17	68	13	52	10	40	20	80	15	60	24	96	14	56	10	40
<b>TOTAL</b>	<b>25</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>25</b>	<b>100</b>	<b>25</b>	<b>100</b>

### 2020 Research Primary Resources

From the above, it was found that toddlers consumed cereals/tubers around 84%, egg foods and 60% fats or oils.

**Table 3. Consumption of Food Diversity by IDDS in Stunting Toddlers**

Diversity of Food Consumption According to IDDS in Stunting Toddlers	Amount	Percentage
Not Diverse	14	56
Diverse	11	44
Total	25	100

2020 Research Primary Resources

Based on the data above, it was found that Toddlers did not consume various kinds of food, the calculation results were around 56%.

#### IV. DISCUSSION

In this study, the education of mothers of children under five was mostly high school / equivalent, the higher the level of mother's education would affect the mother's work. The higher the education of the mother, the easier it will be for the mother to get a job [10]. The high educational status and occupation of the mother have an impact on the mother's upbringing. Mothers who are busy with work will entrust their children to caregivers. Caregivers can be from their own families such as parents or grandmothers of toddlers or other people who are paid to care for toddlers. This is supported by research from Nabuasa, in 2013 entitled the relationship between parenting and stunting in toddlers aged 24 - 59 months. Toddlers who have a history of poor parenting have a 14.5 times chance of experiencing stunting when compared to toddlers who have a history of good parenting [11]. Research conducted in Aceh also stated that one of the risk factors for stunting, namely parenting, poor parenting has an 8 times greater chance of influencing stunting [12]. One of the good parenting styles can be seen from the provision of food to toddlers. Toddlers need to grow and develop, for that they need adequate nutritional intake.

Consuming a variety of foods will have a good impact on the growth and development of children. Diversity of food consumption is the variety of food groups consisting of staple foods, side dishes, vegetables and fruits and water as well as diversity in each food group. Diverse food is an important requirement to produce a balanced nutritional quality food pattern (Kemenkes RI, 2014). This is in accordance with research conducted by Widyaningsih, 2018 which states that toddlers with diverse food intakes have a 3,213 times risk of experiencing stunting when compared to toddlers who have diverse food intakes [7].

Fulfillment of complete nutrition for toddlers is a determining factor for optimal growth and development processes. Malnutrition under the age of 2 years will affect the brain development of toddlers [10]. The need for micronutrients is the need for nutrients that play an important role in the growth of toddlers. The education and knowledge of parents [13] or a caregiver for toddlers greatly influences the pattern of feeding parenting. Toddlers with less access to food consumption can be seen from the quality and quantity of the incomplete daily menu composition. In line with this, food insecurity, menu compositions that are not nutritious, unbalanced and do not vary both in quality and quantity can cause growth delays and malnutrition in toddlers [3]. Malnutrition for a long time if not immediately addressed until the age of two years will cause stunting conditions that persist into adulthood. Malnutrition in stunting toddlers will have an impact on the intelligence and psychology of toddlers [14].

#### V. CONCLUSION

Diversity of food consumption in stunted toddlers showed that 56% or most of the toddlers did not consume various kinds of food. Most of these toddlers consumed cereals/tubers, eggs and also types of fat/lots of oil. Socialization about the introduction and provision of types of food can be started from the age of 6 months.

## VI. ACKNOWLEDGMENT

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# The Attitude of Mother in Prevention Efforts Stunting in Toddlers Aged 2-3 Years in Bangkok Village, Gurah District, Kediri Regency

Betristasia Puspitasari<sup>a,1\*</sup>, Rofik Darmayanti<sup>b,2</sup>

<sup>a</sup>Akademi Kebidanan Dharma Husada Kediri, Kediri, Indonesia

<sup>b</sup>Akademi Kebidanan Dharma Husada Kediri, Kediri, Indonesia

<sup>1</sup>[betristasya@gmail.com](mailto:betristasya@gmail.com) \*, <sup>2</sup>[rofik.darmayanti@gmail.com](mailto:rofik.darmayanti@gmail.com)

## AB STRAC T

*Keywords:*  
Attitude\_1  
Mother\_2  
Stunting  
Prevention  
Efforts \_3  
Toddler\_4

**Background:** Stunting is a chronic malnutrition problem caused by lack of nutritional intake for a long time, resulting in impaired growth in children, namely the child's height is lower or shorter (dwarf) than the standard age. Stunting not only affects cognitive but will also affect the growth and development of a country because it will result in reduced quality human resources. The purpose of this research is to find out the attitude of mothers in stunting prevention efforts in toddlers aged 2-3 years.

**Methods:** The research method used is descriptive with a cross sectional approach. The research population was all mothers who had toddlers aged 2-3 years in the village of Bangkok, Gurah district, Kediri regency. The research sample was all mothers who had toddlers aged 2-3 years in the village of Bangkok, Gurah district, Kediri regency as many as 72 mothers of toddlers, sampling techniques using Total Sampling. The single variable is the attitude of the mother in efforts to prevent stunting in toddlers aged 2-3 years. Data collection techniques with questionnaires. Data processing uses editing, coding, scoring and tabulating and then analyzed using the T Score.

**Results:** The results of the research obtained most of the respondents had a positive attitude in stunting prevention efforts as many as 40 respondents (55.56%) and who had a negative attitude in stunting prevention efforts as many as 32 respondents (44.44%).

**Conclusions:** Based on the results of the research, it can be concluded that most respondents have a positive attitude in stunting prevention efforts in toddlers aged 2-3 years. Although there are still negative attitudes, for that it is necessary the role of health workers in increasing the knowledge of toddler mothers about stunting and prevention through health counseling.

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## I. INTRODUCTION

Indonesia still faces nutritional problems that have a serious impact on the quality of human resources (HR). One of the problems that is currently a major concern is the high nutritional status of children under five (Stunting) [1].

Most people may not understand the term called stunting. Stunting is a chronic malnutrition problem caused by a lack of nutritional intake for a long time, resulting in growth disorders in children, namely the child's height is lower or shorter (short) than the standard age. Stunting is a developmental disorder in children that can cause their bodies to be short in stature[2].

The results of the 2013 Basic Health Research, the prevalence of stunting in Indonesia reached 37.2%. This means that approximately 8.9 million Indonesian children experience suboptimal growth, or 1 in 3 Indonesian children are stunted. More than 1/3 of children under 5 years old in Indonesia are below the average height[1]. The prevalence of stunting under five in 2018 was 30.8% [3].

The causes of stunting are poor nutrition experienced by pregnant women and children under five, limited health services including ante natal care, post natal care, lack of access to nutritious food

and lack of knowledge of mothers about health and nutrition before and during pregnancy, as well as after the mother give birth [1].

The causes of nutritional problems are influenced by two factors, namely direct factors and indirect factors. The direct causes are food factors and infectious diseases. Indirect causes include food security in the family, parenting, health care and inadequate environmental sanitation. The four indirect factors are interrelated with the mother's education, knowledge, income, and skills [4].

In addition, maternal health attitude and behavior factors also influence the incidence of stunting in Indonesia. According to research conducted by Picauly, it shows that mother's attitude can be influenced by mother's knowledge about nutritional fulfillment during pregnancy. Mother's knowledge about nutritional fulfillment is very important which will have an impact on her attitude. Someone who has a good attitude towards nutrition will have a tendency to behave well in meeting their nutritional needs, and vice versa. Lack of attitude towards the behavior of fulfilling nutritional needs if it is manifested in the form of behavior will lead to inadequate nutritional intake which will be related to health problems [5].

In an effort to achieve optimal growth and development of children, especially during the toddler years, preparations are needed from both parents, especially mothers and health workers. high risk during pregnancy then assist in delivery and care for the baby and mother after delivery [6].

Efforts to prevent stunting must be started by mothers from the period of pregnancy, especially in the first 1,000 days of life, one of which is the mother's knowledge and attitudes about stunting prevention. Strengthening interventions to increase knowledge and attitudes of mothers about health and nutrition, the need for nutritional packages (Supplementary Food Provision, Vitamin A. Blood Supplemental Tablets) for pregnant women and toddlers, understanding parenting and fostering child development [7].

Based on the description of the background above, the authors are interested in conducting research with the title "Mother's Attitude in Handling Stunting In Toddlers Age 2-3 Years in Bangkok Village, Gurah District, Kediri Regency."

## II. METHOD

The design used in this research is a descriptive study with a Croos Sectional approach. The variable in this study the single variable is the mother's attitude in preventing stunting in toddlers aged 2-3 years. The research population is all mothers who have toddlers aged 2-3 years in the village of Bangkok, Kec. Gurah Kab. Kediri as many as 72 mothers of children under five years old. The sample of this research is all mothers who have toddlers aged 2-3 years in the village of Bangkok, Kec. Gurah Kab. Kediri as many as 72 mothers under five, the sampling technique used Total Sampling. The data collection technique was a questionnaire. The data analysis technique was with a T score.

## III. RESULTS AND DISCUSSION

### 1. Tabel 1. Characteristics of Respondents by Age

NO	Age	Frequency	Percentage
1.	< 20	17	23,61
2.	20-25	23	31,95
3.	>25	32	44,44
Amount		72	100

Based on table. 1, it can be seen from 72 respondents that most of the respondents aged > 25 years were 32 people (44.44%).

## 2. Tabel.2 Characteristics of Respondents by Education

NO	Education	Frequency	Percentage
1.	SD	9	12,50
2.	SMP	33	45,83
3.	SMA	25	34,72
4.	PT	5	6,94
	Amount	72	100

Based on the table. 2 can be known from 72 respondents mostly educated junior high 33 respondents (45.83%) and a small percentage educated elementary as many as 9 respondents (12.50%).

## 3. Tabel. 3 Characteristics of Respondents by Job

NO	Job	Frequency	Percentage
1.	IRT	51	70,83
2.	SWASTA	7	9,72
3.	WIRASWASTA	12	16,67
4.	PNS	2	2,78
	Amount	72	100

Based on the table. 3 can be known from 72 respondents mostly worked as IRT as many as 51 respondents (70.83%) and a small percentage of Private as many as 7 respondents (9.72%)

## 4. Table.4 Maternal Attitudes in Stunting Prevention Efforts

NO	Attitudes	Frequency	Percentage
1.	Positif	40	55,56
2.	Negatif	32	44,44
	Amount	72	100

Based on table 4, it can be known from 72 respondents mostly have a positive attitude as many as 40 respondents (55.56%) and who have a negative attitude as many as 32 respondents (44.44%). From the results of the research, respondents who had a positive attitude in efforts to prevent stunting in toddlers aged 2-3 years as many as 40 respondents (55.56%) and who had a negative attitude as many as 32 respondents (44.44%). Attitudes toward a behavior are influenced by the belief that it will lead to the desired outcome. This belief can stem from the experience of the behavior in question in the past. [8].

Attitudes are strongly influenced by the mother's experience, everyone's experience is different, this experience is influenced by age. From the results of the study, most of the respondents were positive. There are several factors that affect the mother's attitude. Age factors can affect the attitude of the mother in efforts to prevent stunting. Berdasarkan hasil pada tabel 1dari 72 responden didapatkan bahwa sebagian besar responden berumur > 25 tahun sebanyak 32 orang (44,44%).

The older you get, the more mature a person's maturity and strength will be in thinking about being able to work. In terms of public trust, a more mature person will trust more than a person who is not high enough maturity [9]. The higher the age of the respondent the more experience gained and

vice versa. This will affect the attitude of the mother in efforts to prevent stunting. With an adult age, the mother will be positive in supporting stunting prevention efforts. In this case, the level of education of respondents also affects the attitude of respondents. Based on the results in table 2 of 72 respondents, most were middle educated as many as 33 respondents (45.83%) and a small percentage of elementary education as many as 9 respondents (12.50%).

Education means the guidance one gives to the development of others towards certain ideals that determine man to do and fill life to achieve salvation and happiness. Education is needed to get information such as things that support health so as to improve the quality of life [9]. In this study, a small percentage of 9 respondents (12.50%) were elementary, others were educated in junior high school, high school and PT. Knowledge is a very important domain for the formation of one's actions. Knowledge is needed as support in cultivating self-confidence as well as attitudes and behaviors every day. As we know that education has an important role in every change in behavior to achieve the goal, with higher education will make a person who has a good intellectual and attitude in understanding the health information around him. As a parent who has a toddler aged 2-3 years, with the provision of formal education that is owned it is natural that the mother will be able to be positive in efforts to handle stunting, so that children can grow up well without anyone experiencing stunting.

The respondent's work also affected the respondent's attitude. Based on the results on the table. 3 obtained from 72 respondents mostly worked as IRT as many as 51 respondents (70.83%) and a small percentage of Private as many as 7 respondents (9.72%).

Working for mothers will have an impact on family life. Most of the respondents worked as housewives. Housewife's work is a noble work. Respondents who work as housewives will have a lot of free time at home. So that with this free time, the mother can increase her knowledge about stunting prevention either by exchanging experiences with friends or by reading books, magazines and also through electronic media both television, radio and the internet. In addition, information from health workers for mothers who have toddlers is also needed in realizing optimal toddler growth and development to avoid stunting. With the increase in information obtained by the mother will add knowledge that has an impact on positive attitudes in efforts to prevent stunting. In addition, mothers who work as housewives will tend to have free time to care for their children. Thus the mother can meet the nutritional needs needed by her toddler so as to create a good nutritional status of toddlers and grow flowers optimally and avoid stunting.

#### IV. CONCLUSION

Based on the results of the study can be concluded from 72 respondents most respondents have a positive attitude in efforts to prevent stunting in toddlers aged 2-3 years as many as 40 respondents (55.56%).

#### V. ACKNOWLEDGMENT

The author thanked the mothers of toddlers aged 2-3 years who were willing to be respondents and to all those who had helped until we could complete this research.

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# Developing ESP Nursing Based on CLT in STIKES RS Baptis Kediri

Yoyok Febrijanto<sup>a,1,\*</sup>, Erva Elli Kristanti<sup>b,2</sup>

<sup>a</sup> STIKES RS Baptis Kediri, East Java, Indonesia

<sup>b</sup> STIKES RS Baptis Kediri, East Java, Indonesia

<sup>1</sup> yoyokfeb@gmail.com\*, <sup>2</sup> erva.kristini@gmail.com

\* Yoyok Febrijanto

## ABSTRACT

*Keywords:*

ESP Nursing

CLT

Material Development

**Background:** 5 ESP nursing materials is an important component in the success of educational programs, especially in the field of nursing. The development of English learning is now more emphasis on the authenticity of the material that is contextual activities or work involved, one of which is in nursing profession. Communicative language teaching (CLT) sets principles about the teaching of communicative competence not confined to verbal communication but also includes written communication, consists of four skills especially on ESP nursing based on nursing care (assessment, nursing diagnosis, planning(intervention & implementation, and evaluation) as the main source of objective achievement in teaching learning process.

**Methods:** The development method used R&D adapted from Borg and Gall's model involved 24 students, 1 expert in English education, 2 experts in nursing education, and 1 practitioner of hospital. Researchers developed materials (4 chapters) based needs analysis (students' need and reviewing existing syllabus) with four language skills. Result of expert validation (materials evaluation based on contents, exercises, communication, and general elements) was very good (average score 3.5)

**Results:** result of students' try out to give the decision of the product quality, the average score was 3.2, it meant the materials was acceptable and eligible to be used by the nursing students as autonomous learning.

**Conclusions:** In conclusion, the final product can be used as a model of instructional materials to teach English nursing as ESP materials.

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## I. INTRODUCTION

An instructional material (ESP Nursing) is one important component in the success of educational programs, especially in the field of nursing. The development of learning English is now more emphasis on the authenticity of the material that is contextual activities or work involved, one of which is in nursing profession. The learning in the context of real (natural) is more effective than learning English focused on mastery of grammatical competence. Some textbooks/course books, there is no longer compatible with the latest developments in language learning theory, for example, in the textbooks/course books still feature-based grammar lessons. The weakness, when students are directly involved in the context of real communication, they are not able to speak fluently and accurately, in other words the need for improved communication competence is huge demand.

### Principles of Communicative Language Teaching

According to Richard<sup>(1)</sup>, communicative language teaching (CLT) can be understood as a set of principles about the goals of language teaching, how learners learn a language, the kinds of classroom activities that best facilitate learning, and the roles of teachers and learners in the classroom. CLT sets as its goal the teaching of communicative competence. Communicative competence includes the following aspects of language knowledge: (1) Knowing how to use language for range of different purposes and functions. (2) Knowing how to vary our use of language according to the setting and the participants (e.g. knowing when to use formal and

informal speech or when to use language appropriately for written as opposed to spoken communication). (3) Knowing how to produce and understand different types of texts (narratives, reports, interviews, conversations), and (4) knowing how to maintain communication despite having limitations in one's language knowledge (e.g. through using different kinds of communication strategies).

In recent years, language learning has been viewed from a very different perspective. It is seen as resulting from processes such as: (1) interaction between the learner and users of the language, (2) collaborative creation of meaning, (3) creating meaningful and purposeful interaction through language, (4) negotiation of meaning as the learner and his or her interlocutor arrive at understanding, (5) learning through attending to the feedback learners get when they use the language, (6) paying attention to the language one hears (the input) and trying to incorporate new forms into one's developing communicative competence, and (7) trying out and experimenting with different ways of saying things. The kinds of classroom activities that best facilitate learning with CLT began a movement away from traditional lesson formats where the focus was on mastery of different items of grammar and practice through controlled activities such as memorization of dialogs and drills, and toward the use of pair work activities, role-plays, group work activities and project work.

The type of classroom activities proposed in CLT also implied new roles in the classroom for teachers and learners. Learners now had to participate in the classroom activities that were based on cooperative rather than individualistic approach to learning. Students had to become comfortable with listening to their peers in group work or pair work tasks, rather than relying on the teacher for a model. They were expected to take on a greater degree of responsibility for their own learning. Teachers now had to assume the role of facilitator and monitor. Rather than being a model for correct speech and writing and one with the primary responsibility of making students produce plenty of error-free sentences, the teacher had to develop a different view of learners' errors and of her/his own role in facilitating language learning.

Communication is now not limited to oral communication but also includes written communications. Communication consists of four skills of reading and listening skills as receptive as well as productive speaking and writing skills. For nursing students have the language skills that match the competency of nursing, especially in nursing care (assessment, nursing diagnosis, intervention & implementation, evaluation) is necessary, because the challenges of the working world in the era of ASEAN Economic Community (AEC) requires nurses have the skills/competency to communicate English in the line of duty nursing.

CLT is a method of teaching and learning. The purpose of this method is to guide students have English skills better. This method is also intended to achieve communicative competence. Its competence is designed through the implementation of student centered learning in the classroom. The idea of student-centered learning is shown through task-based language teaching (Task-Based Language Teaching- TBLT) as the core of the communicative approach or CLT. The important concept in this approach is to engage students in real world communication through a series of communicative duties with the balance between fluency and accuracy <sup>(2)</sup>. Teachers provide communicative task to give description that build student competence in producing and enriching the English proficiency on nursing. To achieve communicative competence as a goal in language classes, Brown <sup>(3)</sup> states that there are four kinds of communicative competence that teachers should pay attention to, (1) organizational competence (discourse grammar), (2) pragmatic competence (functional and sociolinguistic), (3) strategic competence, (4) psychomotor ability. Those our competences towards the principle that the same accuracy is important with eloquence have the feeling that the language used accurately, fluently, and acceptably.

Several factors affect the characteristics of the CLT. Brown <sup>(3)</sup> defines the following characteristics: (1) overall goal, focus to all destinations within the communicative competence. (2) relationship of form and language function, this technical is designed by asking students to use as a pragmatic, authentic, and function for meaning purposes. (3) fluency and accuracy, focus to students comprehensive process and production focusing on accuracy based techniques communication. (4) focus on real-world communication context, students in the class required to use the target language either both receptive and productive in context without preparatory training held outside class. (5) autonomy and strategic involvement, the students were given the opportunity to focus on the learning process itself through increased awareness according to the

learning style and through the development of strategies that fit the expected results and comprehension. (6) Teacher's role, teacher's role is as facilitator and mentor, not the person of who knows everything. (7) Student's role, students actively participate in language learning independently both in class and outside class.

Characteristics of task-based language teaching (TBLT) as the core of the communicative approach, TBLT and content-based instruction involves students not only focus on the form of the language or the language itself, but also focus on how to use the language in communicative interactions, conversations, and the use of language <sup>(4)</sup>. In fact, in a social context or in the workplace, it is almost impossible to ask students about the structure of language such as the present tense, past tense, simple passive sentences, and grammar. What happens in the interaction between people is based on science that has students. However, it does not mean that the grammar is not necessary in the real world communication. TBLT not mean grammar totally ignored by paying priority meaning in communication. There are two approaches applied in TBLT to make an accurate and objective communicative activities: focused approach focused approach forms and meanings. Focus on form comes before the students engage in communicative activities. The purpose of this method is intended communicative students can apply the structures they have learned in real-world tasks. Educators try to teach students about grammar communicative to limit inaccuracies although they are welcome when generating a language with many inaccuracies. Educators give students the opportunity to use the language in the classroom to authentic communication with a focus on the meaning <sup>(5)</sup>.

### Principles of Materials Development

There are sixteen principles that Tomlinson <sup>(6)</sup> summarizes of what he thinks many SLA researchers would agree to be the basic principles of SLA relevant to the materials development for the teaching of languages. These principles are briefly outlined in this section. They are as follow:

1. Materials should achieve impact.
2. Materials should help learners to feel at ease.
3. Materials should help learners to develop confidence.
4. What is being taught should be perceived by learners as relevant and useful.
5. Materials should require and facilitate learner self-investment.
6. Learners must be ready to acquire the points being taught.
7. The learners' attention should be drawn to linguistic features of the input.
8. Materials should provide the learners with opportunities to use the target language to achieve communicative purposes.
9. Materials should take into account that the positive effects of instruction are usually delayed.
10. Materials should take into account that learners differ in learning styles.
11. Materials should take into account that learners differ in affective attitudes.
12. Materials should permit a silent period at the beginning of instruction.
13. Materials should maximize learning potential by encouraging intellectual, aesthetic and emotional involvement, which stimulates both right and left brain activities.
14. Materials should not rely too much on controlled practice.
15. Materials should provide opportunities for outcome feedback.
16. Teachers preparing instructional materials based communication competence, as a source of learning for students is a challenge.

An instructional material is one important component in the success of the education program. Instructional materials referred to in the form of textbooks, teaching materials (textbooks), or instructional media plays an important role in teaching. Textbooks should serve as towing the interest and motivation of learners and readers. Motivation reader can arise because the language is simple, flowing and easy to understand. Motivation can arise due to many ideas and new ideas. Motivation can arise, because the textbook contains a variety of information that is relevant to the needs of learners and readers. Teaching materials (textbooks) is a handbook of the course, prepared by experts related fields, meet the standards of textbooks, officially published,

and disseminated <sup>(7)</sup>. In English teaching on nursing, teaching materials compiled based communication competence is seen as the main source in the achievement of objectives in teaching and learning.

## II. METHOD

The research design was research and development (R&D). According to Latief <sup>(8)</sup>, "educational research and development is a research design aimed at developing educational products, like curriculum, syllabus, textbooks, instructional media, modules, assessment instrument, etc". The objective is to develop ESP Nursing material uses communicative English language teaching based on nursing care (assessment, nursing diagnosis, intervention & implementation, and evaluation). The development method used is adapted from Borg and Gall's model. The product was course book for 3-year nursing study program in second semester at STIKES RS Baptis Kediri. The research involved 24 students and 1 expert of English education, 2 experts of nursing education, as well as 1 hospital practitioner. Development model is based on Borg and Gall's model. (1986) in Gunadi <sup>(9)</sup>. The researchers proposed R&D cycle as follow: (1) student's need analysis, (2) developing materials, (3) validation by experts, (4) revision, (5) and try out the product.

## III. RESULTS AND DISCUSSION

### Student's Need Analysis - Observation

In the process of English teaching learning, a teacher often faces some problems, such as students' low motivation and students' poor capability in language skills. Students are not interested in English since they consider it as a difficult and boring subject. They seem to have a heavy burden when the teacher asks them to write a composition, doing presentation or role-plays to practice communicative skills. In this research, it leads the researcher (also as the teacher) to observe the students of Undergraduate nursing study program, STIKES RS Baptis Kediri in order to know the causes of the problem. The result of the observation showed that in writing skill, the students do not organize their writing well, their ideas are not coherence, they do not use right tenses in the right context, they have lack of vocabulary and their understanding of mechanic is low. So, they cannot continue their writing. They also think that time for writing is limited. Because of these, they become unmotivated and have low interest in writing. Some students even give up and do not try to solve their problem. In contrary, the students like to listen from the teacher's explanation without giving questioning feedback; it becomes teacher center learning because of passive classroom situation. They like to read the materials in their handbook given by the teacher, but when the teacher asks them to answer the questions or discuss to make a composition, it seem they prefer discuss other things so that they need a lot of times to finish it. Even, in speaking skill, they seem that they don't have self-confident.

### Reviewing of Related Literature

Doing this step, the researchers did reviewing related literature by recheck the contents of already existing syllabus and other relevant document such as curriculum. The institutional curriculum of Undergraduate nursing program for *Mata Kuliah Pengembangan dan Kepribadian (MPK)* consist of 6 credits that were distributed in semester 1, English (MPK 1205) for 2 credits; semester 2, English for Nursing I (MPK 2206) for 2 credits; and semester 3, English for Nursing II (MPK 3207) for 2 credits. It seemed that English for Special Purposes (ESP on Nursing was important for the students. It was appropriate for preparing students' language competency as professional nurses.

Particularly in English for ESP Nursing, the competency elements that must be achieved understood speaking in nursing, reporting in nursing and presentation of nursing activity and its situation related to nursing. The teacher might have different interpretation one to another according to these competencies. Based on this concept so the researchers proposed communicative language teaching (CLT) approach that developed communication materials which had correlation to nursing field in the instructional materials based on nursing process (assessment, nursing diagnosis, planning, implementation, and evaluation). Meanwhile reviewing previous syllabus done to check relevant and appropriate materials taught in first semester. The researchers found that the students had received theory of nursing process. According to researchers, the subject was appropriately placed in second semester.

To help the students be in active learning, Burns and Erikson (2001) summarize there are five approaches, which are worth implementing in a language curriculum: problem based learning, cooperative learning, project based learning, service learning, and work-based learning. In the Standard ESP curriculum, the aspects covered are on activating students' activeness in experiential learning based on the contents they have. So, problem based learning, project based learning, and service learning are types of learning that are helpful for the students to improve their English proficiency by doing something with their English to do something they really know.

### **Development of Teaching Materials (Book Mapping)**

From result of problem identification, get information from requirement analysis. The researcher developed a teaching material consisting of 4 chapters. Researchers include four language skills arranged in textbooks. All language skills were integrated into a single book followed by learning outcomes and indicators. Learning outcomes and indicators were developed based on the elements of competence consisting of speaking comprehension in nursing, nursing reporting and presentation of nursing activities and situations related to nursing care. Here is the development of teaching materials in research development based on competence in implementing nursing care consisting of: (1) Nursing Assessment, (2) Nursing Diagnosis, (3) Nursing Intervention & Implementation, and (4) Nursing Evaluation.

### **Result of Expert Validation**

There were three experts involved in this step. 1 first-expert was in English Education, 2 second-expert were in nursing education at STIKES of Baptist Hospital Kediri, and 1 third-expert was a hospital practitioner. Consultation with experts about developing material was needed because nursing students used the material. So, the book should fit their needs and the nursing profession. The book should prepare them to become professional nurses in the future. The results of the consultation make the textbook better. Evaluations for expert validation include content, exercises, communications, and general elements, as well as whole comments about textbooks. Quantitative evaluation results from all three experts and one hospital practitioner were reflected in the following tables.

**Table 1 Result of Expert Validation on Content**

No.	Expert Validation												Score	Description		
	A. Contents															
	1	2	3	4	5	6	7	8	9	10	11	Total	Average			
1	3	3	4	4	3	3	4	3	4	4	4	39	3,5	4	Needed re-arrange layout and sub-chapters	
2	3	3	3	4	4	4	3	3	3	3	3	36	3,3	4		
3	3	3	3	3	3	3	3	3	3	3	2	32	2,9	3		
4	3	3	2	3	3	2	2	2	2	3	2	27	2,4	3	Needed arrangement of sub chapter .	
Average					3,5	3,25	3	3	2,75	3	3,25	2,75	3,02	3,5		
Description													Very Good	Very Good		

**Table 2 Result of Expert Validation on Exercises**

No	B. Exercises										De
	1	2	3	4	5	6	7	Total	Average	Score	
1	4	4	3	3	3	3	4	24	3,4	4	Very good
2	4	3	3	3	3	3	3	22	3,1	4	
3	3	3	3	3	3	3	3	21	3	3	
4	3	2	3	2	3	2	2	17	2,4	3	Properly
Average	3,5	3,25	3	2,753	3	2,7	3		2,97	3,5	
Description										Very Good	

**Table 3 Result of Expert Validation on Communications**

No	C. Communications										Total	Average	Score	Description
	1	2	3	4	5	6	7	8	9	10				
1	4	3	3	3	3	3	3	3	3	3	31	3,1	4	More exercises properly based on real fact.
2	2	2	3	4	4	3	4	3	3	3	31	3,1	4	
3	3	3	3	3	3	3	3	3	3	3	30	3	3	
4	2	3	2	2	3	3	3	3	3	3	27	2,7	3	There were communicative exercices
Average	2,75	2,75	2,75	3	3,25	3	3,25	3	3	3		3,0	3,5	
Description											Good	Very good		

**Table 4 Result of Expert Validation on General Element**

No	D. General Element										Total	Average	Score	Description
	1	2	3	4	5	6	7	8	9	10				
1	3	3	2	4	3	3	3	4	3	2	30	3	3	Need rearrange layout and consistency of vocabulary level on every chapter
2	4	3	4	4	3	4	3	4	4	4	37	3,7	4	
3	3	3	3	3	3	3	3	3	3	3	30	3	3	The book was relevant used for nursing students
4	2	3	3	3	4	3	3	2	2	2	27	2,7	3	Stillsome words were difficult in terms.
Average	3	3	3	3,5	3,75	3,75	3	3,25	3	2,75		3,0	3,25	
Description											Good	Very Good		

Consultation with experts about teaching material was really needed because students used the textbook. The consultation was conducted on August, 5, 2021. The results of the consultation make teaching materials better. Evaluations for expert validation are contents, exercises, communication, general elements, as well as overall comments on teaching materials.

The first evaluation is about the content. Of the three experts above, they rate very good for content. From table 7, showed the validation results of the expert about the textbook content was very good (with an average of 3.5), which means no revision is required. The input from the expert includes "the need for layout arrangement and arrangement of sub-chapters". Experts think that the contents of the book speak about the actual topic of nursing and its content accommodates the curriculum of the nursing studies program and their content are well organized and challenges the learners to think critically about English in care. Although, the expert agrees that the content is very good, it still provides some recommendations to make the book better by stating that the textbook content reflects certain English in the care that students often use in both teaching and learning activities and clinical practice as reflected in sub-chapter. From the recommendations of experts, researchers review and revise sub-chapters in each chapter by adjusting the four language skills with a focus on nursing procedures and nursing documentation that support nursing content.

The second evaluation is about exercise. Exercise as the main aspect of this textbook because it talks about student activity. From table 8, the results of the expert validation of the exercises in the textbooks are very good (with an average of 3.5), they are considered very good and good for practice. The first expert thinks that exercising was according to topics and activities encourages

students to speak in English, in understanding the practice in textbooks, the expert states that having no difficulty in understanding the exercises, the practice is not difficult and not easy, it is appropriate for students, and in completing the exercise in this textbook, the expert states that the student is able to complete all the exercises. Although, the three experts agreed that the exercises were excellent and good at understanding and completing the practice in textbooks, but he also gave some recommendations to make the book better by saying to try to make a shorter example of patient review.

The third evaluation is about communication. Communication is the main aspect of this book because it talks about students' communication skills and activities. From table 9, the result of expert validation about textbook communication is very good (with average 3.5). Input from the expert to be enhanced communication practice in real situations (condition of student practice at the Hospital). The first expert is considered very good and good for communication. He thinks that the communicative activity of the book captures the true daily life, the expert feels a useful expression for communication at the hospital, especially in nursing terms, and the conversation captures the true and understandable conversations in everyday life that can be applied to nursing terms. Though, the third expert agrees that communication is excellent in textbooks because the communication of this book is useful for learning in a particular language setting and the conversation is not difficult to understand, but it also provides some recommendations to make the book better. By listing some meaningful terms in nursing diagnoses as an application of nursing science especially in nursing documentation. From an expert's recommendation, the researcher examines and revises and adds the term in an appropriate nursing diagnosis in chapter 2 by distinguishing meaning in diagnosis especially medical diagnosis and nursing diagnoses.

The fourth evaluation is about the common elements. From table 10, the results of expert validation about the general elements of textbooks are very good (with an average of 3.25). The expert input is the need for layout layout and vocabulary consistency on each chapter and still found the words which difficult to interpret. From the expert's recommendation, the researcher revises the layout arrangement by differentiating the sub-chapter from either bold or italic writing, while for vocabulary consistency with difficult words accompanied by a particular meaning in the "vocabulary" sub-section in accordance with the evaluation .

### Try Out Results

After revising the material, the material was tested in this study twice in the class. This procedure is done to obtain inputs for teaching materials and to know acceptance or acceptability of teaching materials. The researchers chose two units to be tested namely Chapter 1 Assessment (Nursing Assessment) and Chapter 2 Nursing Diagnosis (Nursing Diagnosis). Researchers choose these units because they think the unit is very important to learn. The topic relates to the daily activities of the nurse. But that does not mean other units are not important either. Researchers conducted trials on September 15 and 21, 2021.

**Table 5 Result of Try-Out to Students**

No	Try-out										Average	Score	
	Items												
No	1	2	3	4	5	6	7	8	9	10	Total	Average	Score
1	4	3	3	3	3	4	2	3	2	2	29	2,9	3
2	3	2	3	2	2	2	3	3	4	3	27	2,7	3
3	3	4	3	2	4	2	2	3	4	3	30	3	3
4	3	4	3	3	3	2	2	3	3	3	29	2,9	3
5	3	3	4	3	3	3	3	4	3	4	33	3,3	3
6	3	3	4	4	3	3	4	3	4	4	35	3,5	4
7	3	3	3	3	3	2	3	3	2	2	27	2,7	3
8	3	2	4	1	3	4	3	3	3	2	28	2,8	3
9	4	4	3	3	2	3	3	3	3	4	32	3,2	4
10	3	3	4	3	4	4	3	2	4	4	34	3,4	4
11	3	4	3	3	3	4	2	3	3	2	30	3	3
12	4	1	3	1	3	4	1	2	2	1	22	2,2	3

No	Try-out										Average	Score
	Items											
1	2	3	4	5	6	7	8	9	10	Total		
13	3	2	4	3	3	2	3	3	2	3	28	2,8
14	3	2	4	3	2	3	3	4	3	3	30	3
15	1	2	3	4	3	2	1	2	3	3	24	2,4
16	3	3	4	3	4	2	3	3	4	33	3,3	4
17	2	2	3	3	3	3	3	3	3	28	2,8	3
18	2	2	3	4	3	3	3	3	2	27	2,7	3
19	3	3	4	3	4	2	2	3	3	2	29	2,9
20	3	2	4	2	3	3	4	3	2	4	30	3
21	2	1	2	3	2	3	2	1	2	2	20	2
22	3	3	2	3	2	2	4	3	3	4	29	2,9
23	3	3	3	4	4	3	3	3	2	31	3,1	4
24	2	1	3	3	4	4	2	2	2	3	26	2,6
Average	2,9	2,7	3,4	3	3,25	3,1	2,9	3,1	3,2	3,3		2,9
Description											Good	Very Good

Researchers want to have some improvements in learning materials. Researchers created several models of new activities or tasks in the development of materials. It is more interesting for students to make students more interested in learning. Several models of new activities or tasks are proposed in the CTL approach that focuses on communication practice, therefore researchers contribute to material feature conversations, phrases used in the field of nursing as speech enhancement, and vocabulary related to medical / nursing skills as improved reading skills, writing ability. Researchers follow ideas written syllabus and material mapping. Researchers think that 4 written language skills in learning materials. The students are expected to be motivated to follow all activities because the textbooks are communicative and there are integrated skills there. All language skills are integrated into a single book followed by learning outcomes and indicators. Learning outcomes and indicators are developed on the basis of competence elements consisting of speaking comprehension in nursing, nursing reporting and presentation of nursing activities and situations related to nursing to help students understand the material well. Based on this idea, researchers revise the four chapters that describe the outcomes and indicators of learning and each topic is arranged chronologically. It starts with a nursing assessment whereby students get information about nursing and patient health until students learn nursing activities up to nursing evaluation as the main topics in this product and make nursing documentation.

In addition, Harmer<sup>(2)</sup> argues that the type of ESP teaching materials should be integrated or called multi ESP learning materials. This makes the researcher confident about the model of teaching materials written. It combines the four language skills into integrated skills, and the book is communicative for students as ESP students.

The material that develops above shows that students need English that has a correlation with their field related to nursing care. So, they need nursing English since they studied in college. English for nursing is very beneficial to them.

As Hutchinson and Walter (1994: 18) state that ESP is a language learning approach, based on the needs of learners. So by giving English for care as their needs in their classes, it is easier to understand the material provided and tailored to the ESP approach. ESP training is an approach to teaching English for non-English students to meet their needs in English learning related to their specialization. In this case, to provide what they need, the English teaching materials developed by researchers determine English for Nursing. This subject has a correlation with the field and according to their needs in their future carrier. Instructional materials talk about their background knowledge, life experiences and their real task in care. As a result, the students as users of this textbook got their needs by practicing more exercises through this textbook. Developing materials also give grammatical focus in each chapter. This need is also given to the teaching materials by giving the grammar material in each unit. Researchers provide easy grammar material, followed by

switching to more difficult grammar. This reason by giving easy grammar first, it provides a solid foundation for learning ESP in their classes.

From table 5, the result of students' try out to give the decision of the product quality, the average score was 3.2, it meant the materials was acceptable and eligible to be used by the nursing students as teaching learning process. In conclusion, the final product can be used as a model of instructional materials to teach English nursing as ESP materials.

#### IV. CONCLUSION

In conclusion, the result from data of need analysis showed that most students agree to develop English materials that are suitable and related to their profession with 4 language skills using communicative language teaching based on nursing process (assessment, nursing diagnosis, planning, implementation, and evaluation). Developing teaching/learning materials has been described from the points of view of the definition, the principles, the procedure, and the practical undertaking of them with the case of developing learning materials for ESP. Developing teaching/learning materials for ESP is more demanded than that for general English because the availability of the ESP learning materials in public is very rare. Because of this, it is suggested that teachers of ESP develop their own specific materials for their own target language learners. In developing the ESP learning materials, every teacher can follow any approach he/she is familiar with and he/she can develop his/her teaching materials by applying the principles and procedures of language teaching materials including formulating their teaching objectives and syllabus, adapting and or supplementing the existing materials, and or creating their own materials. There may be some other possible ways of developing teaching/learning materials than the one described in this paper. As the consequence, the same level of specific language for the same level of students may have different teaching/learning materials especially if the materials developer and the proficiency level of the students are different.

Therefore, there will never be perfect teaching/learning materials that can be used anywhere, anytime for the same level of students. I strongly suggest that a teacher develop his/her own teaching materials for his/her own specific target learners. If a teacher has to use a textbook for some reason, still s/he has to adjust it with the target learners. There may be some parts of the textbook, which are not exactly suitable for the target learners.

The researchers gave some suggestions that the product can be used as a model of instructional materials to teach English nursing for English teachers, and the institution. The product material did not cover all of student's need so the researcher also suggests to use other resources from books or website as discover learning to know more information from the topic discussion. The researcher gives suggestion about product dissemination. This book is also appropriate to use for second semester students of Diploma Nursing Program because they also study English in Nursing I in that semester as main course book or supplementary book. The last, the researcher hopes there are any further development products about ESP material for nursing program. The researcher knows that they are still a lot of topic that can be developed such as concerning in nursing documentation, procedures in nursing intervention or concerning in nursing care.

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# Negative Social Stigma Impact on Nurses' Anxiety (In The Covid-19 Pandemic Disaster)

Heru Suwardianto<sup>1\*</sup>, Selvia David Richard<sup>2</sup>

<sup>1</sup> Nursing Department, STIKES RS. Baptis Kediri, Kediri, Indonesia

<sup>2</sup> Nursing Department, STIKES RS. Baptis Kediri, Kediri, Indonesia

<sup>1</sup> herusuwardianto@gmail.com\*; <sup>2</sup> selviadavid.richard@yahoo.co.id  
\* Corresponding author

## AB STRAC T (10 PT)

*Keywords:*  
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COVID-19

a new psychosocial problem. In society, stigmatizing nurses can contribute to nurses' anxiety. The purpose is to analyze the social stigma impact on nurses' anxiety during the COVID-19 pandemic.

**Methods:** The design in this research was Cross-Sectional. The population was all nurses in the Kediri city, with a sample size of 577 respondents. The formula to get this sample size used the Slovin formula with accidental sampling. The independent variable was social stigma impact and the dependent variable was anxiety. The research instrument was the Zung self-rating anxiety scale questionnaire. Statistical test using Odd Ratio and Spearman-rho with  $\alpha < 0.05$ .

**Results:** The results showed that most nurses were affected by negative stigma (61.4%) in public, with 9.4% of nurses being affected by the extreme impact in public. Most of the respondents experienced mild anxiety (54.6%) and 6.6% of respondents experienced extreme anxiety. The results showed that social stigma had an effect on nurses' anxiety ( $p=0.000$ ) with a sufficient level of correlation coefficient (0.432). The negative social stigma impact can be 6.7 times exposed anxiety from mild to extreme anxiety.

**Conclusions:** Social stigma can cause anxiety; it was necessary to have proper health education and information related to the COVID-19 Pandemic Disaster to change perceptions and improve stigmatization conditions in nurses.

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## I. INTRODUCTION

As COVID-19 spread, nurses spoke out about the stigma they experienced. Nurses as health workers have sacrificed their time, energy, soul, and body to help patients during this pandemic and have also sacrificed their lives for their patients by volunteering to get closer to the risks they will face [1]. During the Pandemic, there was a lot of negative stigma news, cornering nurses regarding the "sincerity" of caring for patients, will health workers stop treating COVID-19 patients? Of course not. This is a human responsibility attached to nurses to carry out their duties with various risks. Everyone agrees and understands that there was a social panic related to COVID-19. Nurses are stigmatized by some circles as health workers. The development of social media has accelerated changes in perceptions and various stigmatizations of nurses. The stigma label turned into a discriminatory act against nurses, one of whom was evicted from their boarding house or residence [2]. Not only nurses but also doctors and other health workers were treated the same [3]. Other cases include the rejection of the body of a nurse who died due to COVID-19 [4]. The lack of community ability to filter information and disseminate information wisely is one of the problems in spreading irresponsible issues. Also important in the COVID-19 pandemic is the influence of various stigma factors. The existence of social restrictions in society reduces some individual freedoms and exacerbates the stigma given to

nurses or disease survivors.

WHO has raised global alert levels to very high levels and declared COVID-19 a pandemic [5],[6]. WHO data in 2021 (12/6/2021) there are 176 more cases of COVID-19 with 3.8 million deaths and continues to grow. Government data July 2020, Indonesian data there are more than 1.9 cases with the addition of more than seven thousand cases per day with 52 thousand more deaths, and these cases are increasing every day [7]-[9]. The data also shows that there are 135 cases of health workers being expelled from their homes due to the negative stigma of the COVID-19 Pandemic [10]. April 2020 data found 474 false issues related to COVID-19 on social media, with a total of more than a thousand and one hundred issues circulating.

When news of the COVID-19 Pandemic circulates on social media and there is no responsibility in spreading it, it triggers a change in public perception, which in turn leads to negative behavior changes as a result of the intrusion of negative stigma. Untrue and irresponsible news is caught by the community which results in triggering panic, anxiety, fear in the community and even health workers so that people cause feelings of anger, suspicion, anxiety, exaggerated views, and even inappropriate or inappropriate actions. irrational. The community's rejection of the bodies of nurses who died from COVID-19, and the expulsion of nurses from boarding houses, rented houses, or residences made nurses feel disappointed, sad, depressed because they were fighting for the community. Nurses are aware of the various obstacles that occur and the challenges they are facing in their profession, one of which is the negative stigma impact they face. The impact of negative stigma on nurses greatly affects their psychological and mental health. The sequelae are burnout, work fatigue, and other health problems. Moral support, respect, and appreciation for health workers must be given, not because of their duty to carry it out but the risks that must be faced and their choice to accept responsibilities whose risks are higher than what they get.

Nurses hope that all parties will be supportive so they can work according to their roles. Furthermore, public awareness must continue to be built and developed properly in accepting untrue news, so that public perceptions can be rationalized according to the facts. [11]. Family support, community support, and also the support of workplace institutions in supporting nurses in terms of psychological, mental, and personal protection tools used, so that nurses feel psychologically safe and also their work safety. Positive support is needed for nurses. This research and article have never been done before and we need to understand the level of stigma that nurses face at large.

## II. METHOD

The research method uses a Cross-Sectional Design. The research population was Nurses in Kediri city. The research sample amounted to 577 respondences with the Slovin formula. Data collection by *accidental sampling*. The independent variable was social stigma impact, the dependent variable was anxiety. The research instrument used closed questions about stigma and used the *Zung self-rating anxiety scale questionnaire*. Data were collected and statistical tests were performed using Odd Ratio and Spearman-rho with <0.05. The research has obtained a permit and a letter of *ethical clearance* in this study.

## III. RESULTS AND DISCUSSION

Table 1. Social Stigma Impact and The level of anxiety

No	Variables	$\Sigma$	%
<b>Social stigma Impact</b>			
1.	No impact	223	38.6
2.	Mild impact	118	20.5
3.	Moderate impact	113	19.6
4.	Severe impact	69	12.0
5.	Extreme impact	54	9.4
<b>Anxiety</b>			

No	Variables	$\Sigma$	%
<b>Social stigma Impact</b>			
1.	Mild anxiety	315	54.6
2.	Moderate anxiety	157	27.2
3.	Severe anxiety	67	11.6
4.	Extreme anxiety	38	6.6

Table 2. Statistical Test and Odd Ratio

Test Statistical	Value
Odds Ratio	6.671 (6.7)
Spearmen-Rho	=0.000
Correlation Coefficient	0.432

Most nurses are affected by social stigma, that is, more than sixty percent of nurses. This phenomenon is a negative associative state or stigma given by the community and felt by nurses as affected. Based on research [11] one of the causes of discrimination due to social stigma is that nurses are the closest part to the spread of COVID-19 infection. Nurses are the first and foremost officers to deal directly with COVID-19 patients. Nurses face a lot of pressure. Nurses are at high risk of infection if their protective equipment does not meet the standards and even if their immunity is not good.. The cause of the negative stigma impact towards nurses can occur because one of them is incorrect information and is disseminated massively. This resulted in a change in the perception and assessment of the community towards nurses to be different. Changes in knowledge can occur at any time, including during a pandemic that makes people's perceptions change [12],[13]. Society is a social creature by building interactions with fellow humans and other groups, if the biological function functions properly then the social role also supports it. However, healthy biological conditions do not always have related social conditions, as in the case of the COVID-19 Pandemic Disaster, social behavior changes the nature of stigmatization, which is assumed that certain people spread diseases that can threaten their biological conditions. Stigma is a physical and social attribute that reduces a person's social identity, one of which is a nurse, and also disqualifies the person from being accepted by society. Stigma is an attribute that underestimates a person as a human being who is "not the same as a normal person" and usually leads to negative things. The identity of nurses caring for COVID-19 patients has been eroded because they are no longer in the same physical and social condition as other people. Stigma can lead to negative behavior towards the recipient of the stigma, from rejection, expulsion, and acts of violence. The identities embedded by different communities then kill other identities for reasons of the safety of many people and in the name of the general public. This was a stigma associated with damage to the threat to the public body associated with the spread of COVID-19 infection. The cause of social stigma is due to the fear of unknown COVID-19 and untrue information and the general public and general fear of being infected. The impact of stigmatizing behavior includes nurses not getting permission to live in the area where they live by residents [14], People assume nurses are carriers of the COVID-19 virus. Some terminated the contract of residence, were expelled from their boarding house, and the bodies of the deceased nurses were refused by the residents for burial. The current stigma is not just a change of view but has moved to negative behavior that is detrimental and has no norms.

The results showed that almost half of the respondents had mild and severe anxiety. The spread of COVID-19 is a separate cause of anxiety, plus the social stigma that the community attaches to nurses. The public can choose not to engage in harmful negative behavior and not to discriminate if the reference to COVID-19 is not clear. Anxiety experienced by nurses can develop related to physical conditions and also their work as nurses. Social stigma in society can create panic and also increasingly uncontrollable in the spread in society. Nurses who experience anxiety can have effects such as decreased fatigue, burnout, decreased energy, and also no longer focus on completing their work. Nurses must focus on holding patients close and their immune system must also be maintained during this pandemic. The role-feeling that interferes with the nurse while performing her

duties must also be controlled. The emergency of the COVID-19 disaster has changed the environment in which nurses work. The results of the study <sup>[15]</sup> corroborate these results that stigma has an impact on one's performance, and affects work communication, fatigue, lack of compassion, burnout, fear, anxiety, and decreased individual self-esteem. Stigma is related to the threat of the spread of COVID-19 <sup>[16]</sup>. Stigma also occurs in disease survivors as well. People think that those closest to COVID-19 should be avoided and there should be discriminatory actions. Many people have been stigmatized negatively because of the COVID-19 pandemic. Many incidents of stigmatization of health workers and also survivors of the disease have an impact on anxiety. The quality of life of those who are treated differently by the community due to the COVID-19 pandemic may decline. Unfounded public beliefs regarding the spread of COVID-19 can result in actions that are detrimental to nurses. The COVID-19 pandemic has claimed many lives and has become serious stress worldwide <sup>[17]</sup>. The COVID-19 pandemic has affected more than a hundred countries, and stigma and discrimination are changing the way people think and act. Even those who are not infected also experience social stigma.

Anxiety in nurses can have a psychological impact and affect the performance of important organ systems in the body. Anxiety will release adrenaline and suppress endorphins which make the heart beat faster and important organs perform their functions faster. In the end, the body will feel tired, sore, and feel bad in the body. This condition if it occurs continuously will have an impact on the health of the individual. The higher the level of anxiety and the longer the duration of the anxiety, it can cause the body to get sicker and lower body's immunity. Anxiety is important to prevent. The solution in preventing anxiety is relaxation, ignoring the stigma that exists in society, seeking entertainment, and getting peace by taking a vacation, music therapy, brain gym, yoga or other relaxation techniques, and cognitive therapy. Anxiety is an impact that is felt by all nurses during this pandemic, but prevention must be done by various parties.

Given the widespread concern of the disorder, the many social and ethical implications of changing, impacting on anxiety as well as the mental toll that nurses face. Stigmatized individuals experience anxiety to the severe and widespread occurrence of low self-esteem and a sense of worthlessness in society. Many studies and experiences have occurred due to stigma, one of which is mental health disorders. Disturbances in social interaction, bullying, and discrimination make nurses need mental health assistance to restore their spirits. Efforts to increase public awareness regarding the stigma they give need to be continued. The right understanding, as well as the provision of correct information, needs to continue to be given to the community so that they can provide positive and constructive communication and social action in their community. Even nurses also feel valued and cared for by social support in the community. In today's society is very important to be given correct information and also to build their cognitive ability to be able to contribute in making a positive impact and helping health workers suppress the spread of COVID-19. Media behavior also needs to straighten out and reduce people's fears.

#### IV. CONCLUSION

Based on the results of the study that negative social stigma has an impact on nurses' anxiety, the correlation strength is quite strong. Negative social stigma affects nurses' anxiety 6.7 times. The need for providing the right understanding to the public regarding incorrect information triggers social stigma impact in society.

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# Analysis of Factors Related to Mortality in Hemorrhagic Stroke Patients

Fidiana Kurniawati<sup>a,1,\*</sup>, Dyah Ayu Kartika Wulan Sari<sup>b,2,\*</sup>

<sup>a</sup> Program Study of Diploma III STIKES RS. Baptis Kediri, Indonesia

<sup>b</sup> Program Study of Diploma III STIKES RS. Baptis Kediri, Indonesia

<sup>1</sup>Email First Author\*: [fidianakurniawati@gmail.com](mailto:fidianakurniawati@gmail.com) <sup>2</sup>Email Second Author\*: [dyah.ayu.kartika.ws@gmail.com](mailto:dyah.ayu.kartika.ws@gmail.com)

## ABSTRACT

**Keywords:** Covid-19, Attitudes, Knowladge

**Background:** Hemorrhagic strokes have severe neurological impairment and higher mortality rates in the acute phase. The purpose of this study was to explain the relationship between body temperature, blood pressure, cholesterol and blood sugar levels, with mortality in hemorrhagic stroke patients in hospital of Baptist Kediri.

**Methods:** This research method was quantitative research with analytic observational research with cross sectional approach. The sample was 119 respondents from hemorrhagic stroke in January 2016 - December 2017 at hospital of Baptist Kediri. The bivariate analysis used the Chi-Square test, while the multivariate analysis used multinomial logistic regression.

**Results:** The results showed the bivariate test of body temperature  $P\ 0,002 < = 0,05$  and  $r = 0,588$ , blood pressure  $P\ 0,007 < = 0,05$  and  $r = 0,525$ , cholesterol  $P\ 0,000 < = 0,05$  and  $r = 0,614$ , and blood sugar  $P\ 0,000 < = 0,05$  and  $r = 0,663$ . The results showed that hemorrhagic stroke patients with hyperglycemia had a 2.114 times greater chance of experiencing mortality compared to ischemic stroke patients with hyperthermia, hypertension, and hypercholesterolemia.

**Conclusions:** The conclusion showed that a relationship between body temperature, blood pressure, cholesterol and blood sugar levels with the mortality of hemorrhagic stroke patients. Hyperglycemia is dominant factors with mortality in hemorrhagic stroke patients. Regular monitoring of body temperature, blood pressure, cholesterol and blood sugar levels can be a determinant for the next management and information for nurses regarding the worsening condition of hemorrhagic stroke patients.

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## I. INTRODUCTION

Stroke consists of ischemic stroke and hemorrhagic stroke. Hemorrhagic stroke has more severe neurological disorders and a higher mortality rate in the acute phase than ischemic stroke [1]. Hemorrhagic stroke is a stroke that occurs when an artery supplying the brain ruptures or bleeds. There are 2 types of hemorrhagic stroke, namely intracerebral hemorrhage and subarachnoid hemorrhage. In both types of hemorrhagic stroke, causing swelling and increased intracranial damage can damage cells and tissues in the brain and cause death. [2]

Based on data from the Global Burden of Ischemic and Hemorrhagic Stroke in 1990-2013, ±13 million people experience a stroke per year, while 4.4 million of them die in 1 year. The average percentage of stroke mortality is 22.9% per month. The mortality percentage of stroke patients is 75.2% higher in developing countries than in developed countries. The research of Shamshirgaran *et al.*, (2018) two-thirds of global strokes occur in middle-income countries [3] while most stroke cases occur in low-middle income countries. [4]

The largest increase in stroke incidence occurred in Southeast Asia [5]. Based on data from SEAMIC (South East Asian Medical Information Center), Indonesia has the highest mortality rate compared to other countries in Southeast Asia, due to stroke [6]. Stroke is the number one cause of mortality, based on diseases that cause death in Indonesian hospitals. The prevalence of stroke in East

Java ranks fourth, which is 16%, while the Health Profile of Kediri Regency reports that the number of stroke sufferers in Kediri reaches 1,431 people. [7]

Net Death Rate (NDR) is the death rate 48 hours after the patient is admitted for every 1,000 patients discharged. The NDR value that is considered to be still tolerable is < 25 per 1000 or 25. The results of the preliminary study, the NDR of hemorrhagic stroke patients in 2015 was 36, while the NDR of hemorrhagic stroke patients in 2016 was 34 and the NDR of hemorrhagic stroke patients in 2017 was 33. Based on these data, it shows the mortality rate of ischemic stroke in the hospital of Baptist Kediri is a concern because it exceeds the NDR standard limit according the Ministry of Health in Indonesia.

The high prevalence of stroke in Indonesia is influenced by several risk factors, including an increase in body temperature in the acute phase, high blood pressure, an increase in blood sugar, and an increase in blood lipids [8]. Identification of risk factors is very important to control the incidence of a disease. Thus, identifying risk factors for hemorrhagic stroke can play a role in controlling the incidence of hemorrhagic stroke by taking primary prevention measures. American Heart Association in the guidelines for initial management of patients with hemorrhagic stroke, which focuses on diagnosis, management of coagulopathy and blood pressure, prevention and control of injuries due to intracranial pressure, the role of surgery, outcome prediction, rehabilitation, secondary prevention of factors that aggravate / worsen the prognosis of hemorrhagic stroke patients. These risk factors include an assessment of the level of consciousness, assessment of blood pressure, and blood sugar levels in an emergency. Diagnostic tests to determine risk factors include assessing body temperature, increased blood pressure, blood cholesterol levels and blood sugar levels.

## II. METHOD

This research was a quantitative research with an analytic observational research type with a cross sectional approach. Respondents in this study were hemorrhagic stroke patients who met the inclusion criteria who experienced stroke onset in January 2016 – December 2017 at the hospital of Baptist Kediri. The sampling technique used was purposive sampling of 119 hemorrhagic stroke patients. Bivariate analysis used the Chi-Square test, while multivariate analysis used multinomial logistic regression analysis to determine the dominant factors associated with mortality.

## III. RESULTS AND DISCUSSION

### RESULTS

Table 1. Characteristics of Respondents by Gender

Gender	Frequency	Percentage (%)
Male	89	74,78
Female	30	25,22
Total	119	100

Based on the data table 1 showed that most respondents had male sex as many as 89 respondents (74,78%)

Table 2. Characteristics of Respondents by Age

Age	Frequency	Percentage (%)
36 – 45 years	0	0
46 – 55 years	20	16,82
56 – 65 years	47	39,49
> 65 years	52	43,69
Total	70	100

Based on the data table 1 showed that the most respondents were > 65 years old as many as 52 respondents (43,69%).

Table 3. Characteristics of Respondents based on Factors related to Mortality

Variable	Mortality					
	Immortality		Mortality		P value	r
	F	(%)	F	(%)		
<b>Body temperature</b>						
Hypothermia	0	0	2	1,7		
Normal	23	19,3	18	15,1	0.002	0.588
Hyperthermia	31	26,0	45	37,9		
<b>Blood Pressure</b>						
Hypotension	8	6,7	15	12,6		
Normal	24	20,2	7	5,9	0.007	0.525
Hypertension	31	26,0	34	28,6		
<b>Cholesterol</b>						
Hypocholesterolemia	0	0	0	0		
Normal	19	15,9	3	2,6	0.000	0.614
Hypercholesterolemia	31	26,0	66	55,5		
<b>Blood Sugar</b>						
Hypoglycemia	0	0	4	3,3		
Normal	10	8,5	7	5,9	0.000	0.663
Hyperglycemia	17	14,3	81	68,0		

Based on the data table 3 showed that most respondents (37,9%) with hyperthermia has died, most of the respondents (28,6%) with hypertension has died, almost all respondents (55,5%) with hypercholesterolemia has died and almost all respondents (68%) with hyperglycemia has died.

Table 4. Cross Tabulation of Factors Related to Mortality of Hemorrhagic Stroke Patients

Independent Variable	Dependent Variable							
	Mortality				Immortality			
	Category	Sign	Exp (B)	Lower	Upper	Sign	Exp (B)	Lower
Body temperature	0.006	0.064	1.080	1.489	0.003	1.103	1.339	1.019
Blood Pressure	0.007	0.118	0.833	0.890	0.005	0.940	0.918	0.858
Cholesterol	0.000	-1.772	0.252	0.470	0.000	-1.304	0.303	0.417
Blood Sugar	0.000	-2.114	0.059	0.438	0.012	-1.811	0.219	0.056

Based on table 4 showed that the hemorrhagic stroke respondent variable who experienced an increase in blood sugar/hyperglycemia levels in the mortality event had an odd ratio value of -2.114, which means that there is a greater chance of a relationship with mortality than not dying.

Table 5. Test the Goodness of the model

Test the Goodness of the model	Pseudo R-Square	
	Cox and Snell	Nagelkerke
	0,504	0,672
	0,386	

Based on table 5 showed the Nagelkerke value of 0,672, which means the diversity of data on independent variables (body temperature, blood pressure, cholesterol and blood sugar) in this study was able to explain the mortality of 67,2% while the remainder is explained by other independent variables that are outside the research model.

## DISCUSSION

### A. Relationship of Body Temperature with Hemorrhagic Stroke Mortality

Based on the results of the study, data from 119 respondents showed that most of the 76 respondents (63.9%) of hemorrhagic stroke patients at Baptis Hospital Kediri experienced hyperthermia, and 43 respondents (36.1%) experienced normothermia and there was a relationship between body temperature and mortality p value 0.002.

According to the results of research by Rahmawati, (2015), explained that an increase in body temperature  $>37.2^{\circ}\text{C}$  upon admission to the hospital affects the incidence of mortality in patients with intracerebral hemorrhage stroke [9]. Patients with body temperature at hospital admission  $> 37.2^{\circ}\text{C}$  had a risk of 7.73 times to experience mortality compared to patients whose body temperature at hospital admission was  $37.2^{\circ}\text{C}$ , the OR value (CI 95%) was 7.73 ( 2.86 – 20.89). These results are in line with the results of Haryuni's research, (2017), there is a relationship between increased body temperature and the incidence of mortality in hemorrhagic stroke patients [10]. This result is in line with the results of a meta-analysis of fever or higher body temperature is significantly associated with worse outcome and a worse risk with fever is death. Fever after intracerebral hemorrhage is associated with longer ICU and hospital stay, poor functional outcome, and increased mortality [11]. High body temperature after intracerebral hemorrhage is associated with hematoma expansion, cerebral edema, increased intracranial pressure, and early neurologic damage resulting in death. The results of this study are supported by the research of Godoy *et al.*, (2010), who found an initial increase in the leukocyte count ( $>9.9 \times 10^9/\text{L}$ ) was associated with death within 30 days in patients with intracerebral hemorrhagic stroke ( $p < 0.0001$ ) and an initial increase in the leukocyte count was associated with hematoma volume at hospital admission. [12]

### B. Relationship of Blood Pressure with Hemorrhagic Stroke Mortality

Based on the results of the study, there were 119 respondents who obtained data that had normal blood pressure values as many as 54 respondents (45.4%), and hypercholesterolemia as many as 65 respondents (54.6%). This showed that most patients had increased blood pressure, and there was a relationship between blood pressure and mortality, p value of 0.007.

According to Udani, (2018), hypertension is the single most important risk factor for ischemic stroke and hemorrhagic stroke [13]. The higher the blood pressure, the greater the risk of having a stroke. Hypertension causes impaired ability of cerebral blood [14] vessel autoregulation. In acute high blood pressure, blood pressure rises suddenly and very high due to forced dilation. This sudden high blood pressure bypasses the vasoconstrictive response and causes a breakdown of the blood-brain barrier with focal leakage of fluid through the overstretched artery wall and the formation of cerebral edema. High systolic blood pressure is associated with hematoma expansion, neurological damage, and hemorrhagic stroke death [15]. In developed countries, the incidence of hypertensive ICH has decreased with improvements in blood pressure control [16]. The results of the research by Darotin *et al.*, (2017) are in line with the results, which state that there is a relationship between abnormal blood pressure and mortality in hemorrhagic stroke patients [17]. Blood pressure monitoring in the stroke care unit is very necessary to reduce post-stroke mortality and disability by about 20% and is very necessary to help decision making for clinicians to provide antihypertensive therapy. [18][19]

The results of data analysis showed that there was a slight difference between non-hypertension (45.4%) and hypertension (54.6%), this was influenced by the fact that the majority of patients with non-hypertension experienced a decrease in blood pressure. Decreased blood pressure values during an acute stroke can be a sign of extensive brain damage and/or the presence of accompanying coronary heart disease, so that it still affects mortality/decreased disease prognosis. [17]

### C. The Relationship of Cholesterol with Hemorrhagic Stroke Mortality

Based on the results of the study, there were 119 respondents who obtained data that had normal cholesterol values as many as 22 people (18.5%), and hypercholesterolemia as many as 97 people (81.5%). This showed that most patients had hypercholesterolemia and there was a correlation between cholesterol and mortality p value 0.000.

Hypercholesterolemia or increased blood cholesterol is one of the risk factors for morbidity and mortality due to stroke [6], [20]. High cholesterol triggers atherosclerosis, narrowing, or hardening of the arteries that can lead to heart disease, stroke, and other major health problems. If the cholesterol continues to accumulate and form plaques in the blood vessels, then the transportation of blood in the body is hampered and can interfere with the work of the body as a whole. The results of the Udani, (2018), study explained that the results of hypercholesterolemia had a relationship with the death of stroke patients with a p value of 0.014 [13]. Based on the results of research by Deng *et al.*, (2018), also explained that an increase in triglycerides in acute stroke patients can also increase short-term survival, thereby triggering mortality [6] [21]. According to the results of Udani's research, (2018). This is contrary to the results of Wang *et al.*, (2013), the percentage of the group of hemorrhagic stroke patients who have hypercholesterolemia which is higher than hypcholesterolemia does not mean that hypercholesterolemia is a risk factor for hemorrhagic stroke [21]. Increased morbidity and mortality is associated with increased blood cholesterol and LDL levels, as well as decreased HDL levels. [15]

#### D. Relationship of Blood Sugar with Hemorrhagic Stroke Mortality

Based on the analysis results obtained normal blood sugar data as many as 21 respondents (17.65%) and hyperglycemia data there were 98 respondents (82.35%) who experienced mortality. Statistical analysis showed that there was a relationship between abnormal blood sugar and mortality in hemorrhagic stroke patients with p value 0.000.

Maintaining normoglycemic conditions is an important part of stroke management. Blood sugar levels should be controlled as quickly as possible in the range of 100-150 mg/dL. As for people with diabetes mellitus, it is recommended that blood sugar targets be between 100-200 mg/dL [17]. High blood glucose during the acute phase may increase the risk of death and poor outcome in patients with hemorrhagic stroke regardless of the presence of diabetes mellitus. However, more recent studies have shown an increased incidence of systemic and cerebral hypoglycemic events and possibly even an increased risk of death in hemorrhagic stroke patients. Optimal management of hyperglycemia should be implemented and hypoglycemia in hemorrhagic stroke and hypoglycemia should be avoided. [15]

#### E. Dominant Factors Associated with Mortality in Hemorrhagic Stroke Patients.

Based on the results of the multinomial logistic regression test, it was found that several dominant factors or most related to mortality in hemorrhagic stroke patients included cholesterol and blood sugar. The test results showed that the most strongly associated factor with mortality was blood sugar with a p value of 0.012 and a coefficient of -2.119 and indicated that the direction was negative. Based on these coefficients, it means that hemorrhagic stroke patients who experience hyperglycemia cause patients to have a tendency to experience mortality. The results of this multivariate test mean that hemorrhagic stroke patients who experience hyperglycemia have a 2,119 times greater chance of experiencing mortality than hemorrhagic stroke patients who experience increased body temperature, increased cholesterol, increased blood pressure. Based on the results of the coefficient, the variable that is most strongly associated with mortality is an increase in blood sugar.

The greater the number of risk factors owned by the patient, the worsening of neurological deficits and an increased risk of death in stroke . Based on the results of the study on hemorrhagic stroke patients, it was found that the risk of causing death was 3 times higher when compared to ischemic stroke. Based on this, it can be concluded that life expectancy is higher in ischemic stroke patients than hemorrhagic stroke. The ischemic stroke type has a higher survival that is more than one year [22]. Intracerebral hemorrhagic stroke cases account for almost 13% of all stroke cases, and produce a wider range of disorders. Intracerebral hemorrhagic stroke is the most severe, more fatal, and disabling. Cases of mortality that occurred within 30 days were 32%-50% of patients and 80% of patients survived paralysis for six months after intracerebral hemorrhage. [9]

Hemorrhagic stroke patients who experience hyperglycemia have a relationship with risk factors for diabetes mellitus with the incidence of suffering from stroke, this shows that diabetes mellitus tends to be doubled in causing various vascular diseases, but only a small part of the effect of diabetes mellitus is caused by blood fat, blood pressure and obesity. Diabetes mellitus is a health disorder which is a collection of symptoms caused by an increase in blood sugar (glucose) levels due to insulin

deficiency or resistance [13]. Diabetes mellitus can cause quite dangerous effects. In addition, diabetics are at a higher risk of having a heart attack or stroke compared to those who have stable blood sugar levels.

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# The Level of Knowledge of Pregnant Women About COVID-19 Pandemic in Ngumpul District, Jogoroto, Jombang

Vivin Eka Rahmawati<sup>1</sup>, Sabrina Dwi Prihartini<sup>2</sup>, Helmi Annuchasari<sup>3\*</sup>

<sup>1</sup>Midwifery, Health Faculty, UNIPDU, Jombang

\*vivineka74@gmail.com

## ABSTRACT

*Keywords:*  
Knowledge Level,  
Pregnant Women,  
COVID-19

**Background:** Corona virus spreads through droplet transmission from person to person and contact of surface contaminated with mucous membranes. Current data suggest that pregnant women require more intensive care and mechanical ventilation compared to the normal population. Explain the research background broadly and highlight the research objective. This study aimed to describe pregnant women of knowledge level about COVID-19 pandemic in Ngumpul district Jogoroto Jombang.

**Methods:** This was a descriptive study. A total sample of 72 pregnant women in Ngumpul District, Jogoroto, Jombang. Univariate analysis data to describe the level of knowledge of pregnant women.

**Results:** the result of this study indicate that the characteristics of pregnant women are mostly between the ages of 20-30 years 58 (80,55%), less than half of pregnant women are included in the 3rd trimester as much as 28 (38,89%), less than half of pregnant women as housewives 35 (48,62%), and most the last education of pregnant women is high school as much as 57 (79,1%). The result of the frequency distribution show the level of knowledge of pregnant women about the covid-19 pandemic, namely pregnant women in the good knowledge category as much as 63 (87,5%).

**Conclusion:** That more than half of the respondents have good knowledge, there are still some pregnant women who have less and moderate knowledge. As a health worker to provide education this can be improved

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## I. INTRODUCTION

Corona virus disease (COVID-19) is a public health problem of global concern of global concern caused by the human coronavirus (SARS-COV-2) (1). This virus has spread all over the world and caused chaos (2). Corona virus can spread from person to person through transmission of coronavirus droplets and contact of contaminated surfaces with mucous membranes (3). Symptoms of COVID-19 range from mild (or asymptomatic) to severe illness and are primarily characterized by fever, dry cough, dyspnea, headache, sore throat, and rhinorrhea, and sometimes hemoptysis. The main route of transmission is close contact (about 6 feet or two arms long) with someone who has respiratory droplets of COVID-19 when an infected person coughs, sneezes, or talks and touches a surface or object with the virus and then touches their mouth, nose, or eyes (4).

Everyone is at risk of infection, including pregnancy, pregnant women have an increased risk of being infected with COVID-19 compared to the general population. Current data indicate that pregnant women require more intensive care than the general population (5).

Cytokine storms that occur in people infected with COVID-19 are likely to predispose pregnant women with COVID-19 to increase morbidity and even mortality (6). The cumulative effect of the disease on a woman is most likely to have a detrimental effect on herself and the developing fetus. It affects the developing fetus including Intra Uterine Growth Retardation (IUGR), preterm birth, abortion, and stillbirth (7). Although vertical transmission is uncertain, the fear and anxiety associated with infection may lead to increased demand for abortion and operative delivery (8). Against the background above, it becomes important that great efforts should be made to prevent

pregnant women and their fetuses from the shadow of COVID-19. This can only be achieved if a pregnant woman has knowledge of how to prevent contracting the virus and transmitting it to his family and others.

## II. METODE

The design of this research is descriptive. The research sample was 72 pregnant women. Sampling technique with total sampling. The research instrument was a questionnaire which had previously been tested for validity and reliability. The research site is in the Gathering Area of Jogoroto, Jombang. Analysis technique with frequency distribution analysis.

## III. RESULT AND DISCUSSION

A woman's body undergoes immunological changes during pregnancy to avoid rejection of the fetus and placenta. In pregnancy the immune response may change in each trimester and during the postpartum period, shifting from a pro-inflammatory to an anti-inflammatory state. In table 1 it can be seen that the age of pregnant women is between 20-30 years (80.55%) in a healthy reproductive period. Younger ages have better internet access so that they will increase their level of knowledge and are more likely to take better preventive actions (9). Older age is associated with less knowledge, possibly due to lack of access to knowledge and formal education (10).

**Tabel 1. Frequency Distribution Characteristics of Pregnant Women**

Characteristics	Frequency	Percentage (%)
<b>Age</b>		
<20 years	5	6,95
20-30 years	58	80,55
31-35 years	5	6,95
>35 years	4	5,55
<b>Trimester</b>		
Trimester I	13	18,05
Trimester II	31	43,06
Trimester III	28	38,89
<b>Profession</b>		
Government employees	5	6,94
Privat employess	19	26,38
Entrepreneur	9	12,50
Housewife	35	48,62
Other	4	5,56
<b>Education</b>		
Primary school	1	1,38
Junior high school	6	8,34
Senior high school	57	79,17
Collage	8	11,11
<b>Level of Knowledge</b>		
Good	63	87,5%
Enough	6	8,34%
Poor	3	4,16%

In Table 1, a total of 31 (43.06%) pregnant women are included in the second trimester, gestational age is related to the psychology of pregnant women (11). The work status of the mother is mostly housewives 48.62%. Job status either directly or indirectly provides experience and knowledge for the person (12). Most of the respondents who were pregnant women had high school education, namely 57 (79.17%), the higher a person's education level, the higher the level of knowledge (13). Women with formal education, secondary education or

tertiary education are 10.61 times more likely to have a good knowledge of COVID-19 compared to women without formal education(10). In a study conducted by Fikadu Y (2021) that pregnant women with adequate knowledge were more active in attending antenatal care and visiting health centers (9). Same with Bekele D (2021) who stated that the better knowledge about COVID-19 had an effect on preventive measures against COVID-19 (4). These actions are practiced by keeping a distance and washing hands frequently.

**Tabel 2. Cross tabulation of characteristics with mother's level of knowledge (n=72)**

Characteristics	Level of Knowledge					
	Good		Enough		Poor	
	Frequency	%	Frequency	%	Frequency	%
<b>Age</b>						
<20 years	3	4,16	1	1,38	1	1,38
20-30 years	52	72,22	4	5,55	2	2,77
31-35 years	4	5,55	1	1,38	0	0
>35 years	4	5,55	0	0	0	0
<b>Trimester</b>						
Trimester I	13	18,05	0	0	0	0
Trimester II	26	36,11	2	2,78	3	4,16
Trimester III	24	33,34	4	5,56	0	0
<b>Profession</b>						
Government employees	4	5,56	1	1,38	0	0
Privat employess	17	23,63	2	2,78	0	0
Entrepreneur	8	11,13	1	1,38	0	0
Housewife	31	43,06	1	1,38	3	4,16
Other	3	4,16	1	1,38	0	0
<b>Education</b>						
Primary school	0	0	0	0	1	1,38
Junior high school	2	2,78	2	2,78	2	2,78
Senior high school	55	76,38	2	2,78	0	0
College	6	8,34	2	2,78	0	0

Overall it can be stated that the mother has a good level of knowledge about COVID-19. This can be seen from table 2.

#### IV. CONCLUSION

In this study, it was found that the level of knowledge of pregnant women about COVID-19 was in the good category of 87.5%. More than half of the respondents have good knowledge, and there are still some pregnant women with sufficient and less knowledge. As a health worker, it is important to increase education for pregnant women.

#### V. ACKNOWLEDGEMENT

Finally, I would like to thank everyone who was important to the successful realization of this research. This research is still far from perfect, but it is hoped that it can be useful not only for researchers, but also for readers. For this reason, suggestions and constructive criticism are most welcome.

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# The Correlation of Community's Perception and Anxiety of Adverse Events Following Immunisation Covid-19 in The City District Kediri City

Erma Herdyana<sup>a,1</sup>, Siti Komariyah<sup>b,2</sup>

<sup>a</sup>Midwifery Academy, Dharma Husada, Kediri, Indonesia

<sup>b</sup>Midwifery Academy, Dharma Husada, Kediri, Indonesia

<sup>1</sup> [herdyanaerma@gmail.com](mailto:herdyanaerma@gmail.com), <sup>2</sup> [sitikomariyah.dh@gmail.com](mailto:sitikomariyah.dh@gmail.com)

E-mail : [herdyanaerma@gmail.com](mailto:herdyanaerma@gmail.com)

## ABSTRACT

**Keywords:**  
Perception  
Anxiety  
Covid-19  
Vaccine

**Background:** The Covid-19 pandemic is now entering its second year of 2020. Based on data from WHO, in 2020 it was stated that WHO had identified 10 of the 42 COVID-19 vaccine candidates who had gone through the third clinical trial stage, While in Indonesia there are 3 types of Covid-19 vaccines. (Putri, 2020). Currently, a policy program has been issued, that is vaccination activities are carried out by the Indonesian government as an effort to have community immunity (herd immunity), especially in East Java the coverage of the Covid-19 vaccine is still low below 40%. (Kompas, 2021). This allows people to still be worried about side effects of the Covid-19 vaccine. The purpose of this study is to analyze the public's perception and anxiety of adverse events following immunisation.

**Methods:** This type of research is analytic with a cross sectional approach. The study was conducted in the City District, Kediri City with a sample that met the research criteria of 140 respondents using a simple random sampling technique. Contingency coefficient test was carried out with SPSS and the level of significance = 0.05.

**Results:** Based on the test results obtained  $p$  value  $0.000 <$  significance (0.05) so that the research hypothesis is accepted which means that there is a relationship between public perception and anxiety of adverse events following immunisation Covid-19 Vaccine.

**Conclusions:** Socialization activities about the Covid-19 vaccine still need to be carried out to provide understanding to the whole community.

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## I. INTRODUCTION

According to Matsumoto & juang, perception is the process of gathering information about the world through the sensing that we have. Each person's perception is different in interpreting the sensing he receives. Public perception of the Covid-19 vaccine has an impact of course on community participation. As for the data of people who have received the first Covid-19 vaccine by 61.5% and 39.2% have received the second Covid-19 Vaccine and 32.2% have received the third Covid-19 Vaccine. Based on the description above it can be concluded that public participation in the interest to get the Covid-19 vaccine with high enthusiasm, as a form of formation of immunity (herd immunity). The purpose of this study is to find out the Relationship of Public Perception and Anxiety to The Incidence of Follow-up To Covid-19 Vaccine in Kediri City Sub-District. Anxiety experienced by the community is also related to the type of vaccine available. The public began to look for information about the side effects of various types of vaccines that will be obtained. This anxiety and fear increases when the public gets information about of adverse events following immunisation Covid-19. Based on survey data, 22% were doubtful about the effectiveness of Vaccine Covid-19 and 12% were concerned about the side effects of Covid-19 vaccine. Based on the publication on Pubmed August 2021, the long-term impact of Covid-19 80% of survivors experienced 1% of the effects of smaping, while the incidence of long-term effects is generally 1 year including: 58% fatigue, 44% headache, 27% visual impairment, 25% hair loss, 24% naïve tightness (dyspnea). Public participation in the interest in getting the Covid-19 vaccine with high enthusiasm, as a form of formation of immunity (herd immunity). The high participation of the community to get the Covid-19 Vaccine is in line with community anxiety as well as the effects of Post-Immunization Follow-up Events (KIPI in

Indonesian). Based on survey data, 22% have doubts about the effectiveness of Vaccine-19 and 12% concerns about the side effects of Covid-19 Vaccine.

## II. METHOD

This research with this type of analytical research uses a crosssectional approach. The study sample was respondents who conducted the Covid-19 Vaccine in Kediri City Police using a sampling technique with simple random sampling purposive and obtained 140 respondents at the data collection on October 10 - 31, 2021. Independent variables in this study is the public's perception of the covid-19 vaccine, and the dependent variables in This study is anxiety of people who will get vaccinated Covid-19. Using analysis Contingency coefficient.

## III. RESULTS AND DISCUSSION

### 1. Results

The results showed that the general data consisted of Characteristic Respondents based on Age, Gender, Education, Occupation, Information Sources, Public Perception of KIPI covid-19 vaccination, Public anxiety when going to undergo Covid-19 vaccination, while the special data in this study is the relationship of public perception about adverse events following immunisation Covid-19 with anxiety which will to Covid-19 vaccination.

#### a. Age

Table 1. Characteristics of Study Respondents based on Age in Kediri City District, Kediri City

No	Age	Total	Percentage (%)
1	21-35 years	27	19,0
2	36-45 years	47	33,1
3	46-60 years	39	27,5
4	>60 years	29	20,4
Total		142	100

Source: Primary Data, 2021

From the results of the study, the most respondents aged 36-45 years, are 53 respondents (37.8%) and a small percentage of respondents aged >60 years are 15 respondents (10.7%)

#### b. Gender

Table 2. Characteristics of Study Respondents based on Gender in Kediri City District, Kediri City

No	Age	Total	Percentage (%)
1	Man	63	45,0
2	Woman	77	55,0
Jumlah		140	100

Source: Primary Data, 2021

From the results of the study, the most respondents based on gender are woman 77 respondents (55,0%) and a small percentage of respondents based on gender man, are 63 respondents (45,0%)

#### c. Education

Table 3. Characteristics of Study Respondents based on Graduates Education in Kediri City District, Kediri City

No	Education	Total	Percentage (%)
1	Graduate junior high school	57	40,7
2	High school graduation	83	59,3
Jumlah		140	100

Source: Primary Data, 2021

From the results of the study, the most respondents based on Graduates Education is High school

graduation 83 respondents (55,0%) and a small percentage of respondents based on Graduate junior high school is 63 respondents (40,7%)

d. Occupations

Table 4. Characteristics of Study Respondents based on Occupations in Kediri City District, Kediri City

No	Occupation	Total	Percentage (%)
1	Jobless	23	16,4
2	Freelance	63	45,0
3	Entrepreneur	7	5,0
4	Farmer	47	33,6
Jumlah		140	100

Source: Primary Data, 2021

From the results of the study, the most respondents based on Occupations is Freelance 63 respondents (45,0%) and a small percentage of respondents based on Occupations is Entrepreneurs 7 respondents (5,0%)

e. Source of information

Table 5. Characteristics of Study Respondents based on Occupations in Kediri City District, Kediri City

No	Source of information	Total	Percentage (%)
1	Television	93	66,4
2	Social Media	31	22,1
3	Others	16	11,5
Jumlah		140	100

Source: Primary Data, 2021

From the results of the study, the most respondents based on Occupations is Freelance 63 respondents (45,0%) and a small percentage of respondents based on Occupations is Entrepreneur 7 respondents (5,0%)

f. Community's Perception of adverse events following immunisation Covid-19

Table 6. Characteristics of Study Respondents based on Community's Perception of The Incidence of adverse events following immunisation Covid-19 in Kediri City District, Kediri City

No	Perception	Total	Percentage (%)
1	Positive Perception	79	56,4
2	Negative Perception	61	43,6
Jumlah		140	100

Source: Primary Data, 2021

From the results of the study, the most respondents based on Community's Perception of The adverse events following immunisation Covid-19 is Positive Perception 79 respondents (56,4%) and a small percentage of respondents based on Occupations is Negative Perception 61 respondents (43,6%)

- g. Anxiety of Community's Who Will Get Vaccinated Covid-19

Table 7. Characteristics of Study Respondents based on Anxiety of Community's Who Will Get

Vaccinated Covid-19 in Kediri City District, Kediri City			
No	Anxiety	Total	Percentage (%)
1	Basic Anxiety	10	7,0
2	Intermediate Anxiety	112	80,0
3	Advance Anxiety	18	12,7
Jumlah		140	100

Source: Primary Data, 2021

From the results of the study, the most respondents based on Anxiety of People Who Will Get Vaccinated Covid-19 of adverse events following immunisation Covid-19 is Intermediate Anxiety 112 respondents (80,0%) and a small percentage of respondents based on Basic Anxiety is 10 respondents (7,0%)

- h. The Correlation Of Community's Perception And Anxiety of Adverse Events Following Immunisation Covid-19 In The City District Kediri City

Table 8. The Correlation Of Community's Perception And Anxiety of Adverse Events Following

Perception	Anxiety of Adverse Events Following Immunisation Covid-19				Total
	Basic Anxiety	Intermediate Anxiety	Advance Anxiety		
Positive Perception	0 (0,0%)	70 (50,0%)	9 (6,4%)		79 (100%)
Negative Perception	10 (10,0%)	42 (30,0%)	9 (0,0%)		61 (100%)
Total	10 (7,0%)	112 (80,0%)	18 (12,7%)		140 (100%)
Koefisien kontingensi				0,000	

Source: Primary Data, 2021

From the results of the contingency coefficient test with the signification of  $\alpha$  (0.05) obtained  $p$  value of 0.000. Because the value of  $p$  value obtained by  $0.000 <$  signification of  $\alpha$  (0.05) then the research hypothesis is accepted which means there is a Relationship between Community's Perception And Anxiety of Adverse Events Following Immunisation Covid-19 In The City District Kediri City

## 2. Discussion

Adverse reactions, also known as side effects, are considered to be caused by a vaccine. The intensity of these reactions may range from mild to moderate to severe. They often resolve on their own, and may or may not require medical intervention. Not everyone vaccinated against COVID-19 experiencing a post-follow-up reaction or event Immunization. If a reaction arises, that's something natural.

### Public perception of covid-19 vaccination

- a. Community's perception of adverse events following immunisation Covid-19 vaccination

Everyone has a different perception in translating the acceptance of information received and influenced by several factors, including the source of information, type of work, age, level of education, and allow many other influencing factors that have not been identified in this study.

Positive Perception provides the results of a dominant study of 79 respondents (56.4%) about

people's perception of post-immunization events, so this shows that the public is enthusiast to get the Covid-19 vaccine despite knowing of the occurrence of follow-up after Covid-19 immunization. This is supported by data that the highest percentage based on the highest level of education factor is high school graduates as many as 83 respondents (59.3%) and influenced by the source factor of information, that is 93 respondents (66.4%). This perception will form a behavior that makes someone take action, in this case that is to do the Covid-19 Vaccination. This is supported by data that the highest percentage based on the highest level of education factor is high school graduates as many as 83 respondents (59.3%) and influenced by the source factor of information, that is 93 respondents (66.4%). According to Pieter in Janiwarti and Saragih (2011) Behavior is the totality of a person's imagination and reaction. Immediately visible or invisible. The onset of behavior due to interrelationation from internal and external stimuli processed through the learning process and reinforcement involving cognitive, affective, and motor components. While the negative perception of respondents can be attributed to the high level of education who are still junior high school graduates, that is 50 respondents (40.7%). According to Azyumardi Azra stated that the level of education is an activity of a person in developing his abilities, attitudes, and forms of behavior, both for the present life and at the same time preparation for life. With regard to the participation of respondents in the Covid-19 vaccine, this shows the impact of the level of education so as to give a negative perception, but it is not a major factor in terms of one's decision-making to get immunization of the Covid-19 vaccine, although it has a negative perception but the source of information is also able to change one's behavior.

In this study shows that the positive perception of the community towards the occurrence of post-immunization follow-up is not an obstacle in a person to continue to get the Covid-19 Vaccine despite the information circulating post-immunization events and supported by the determining factor of a person to behave, namely from the positive perception supported by age factors, sources of information and education levels.

b. Anxiety of People Who Will Get Vaccinated Covid-19 of adverse events following immunisation Covid-19 vaccination

The results of this study showed that the anxiety experienced by respondents belonged to 3 (three) levels of the anxiety category, are mild, moderate and severe anxiety. The highest percentage of anxiety experienced by respondents was Intermediate Anxiety, in 112 respondents (80.0%). The next level of anxiety was Advance Anxiety with 18 respondents (12.7%) and Basic Anxiety 10 respondents (7.0%). Anxiety is something that afflicts almost every person at any given time in his or her life. Anxiety is a normal reaction to a situation that is very stressful in a person's life. Anxiety can arise alone or join other symptoms of various emotional disorders (Ramaiah, 2003 in Asrori, 2016). Anxiety experienced by respondents can be caused by the work factor in this case the highest is not working by 23 respondents (16.4%) and the education level factor of junior high school graduates 50 respondents (40.7%) and get information that is still just following the information of others so that they do not fully understand themselves, that is in 16 respondents (11.5%). Respondents' anxiety about the adverse events following immunisation Covid-19 vaccination with Intermediate Anxiety is something that generally occurs, in this case the Covid-19 pandemic that occurred since 2020 until now there are still cases, but in line with this the acceleration of the Covid-19 vaccine also provides significant results based on data from WHO and the Indonesian Covid-19 Task Force. It is also a support for people's anxiety today. The high level of respondents with the level of high school graduates' education also affects the level of anxiety of respondents

Anxiety experienced by the community is also related to the type of vaccine available. The public began to look for information about the side effects of various types of vaccines that will be obtained. The availability of vaccines allows the public to choose in place of registration of the implementation of the vaccine in accordance with the vaccine desired by the community with the provisions of each and the availability of the type of vaccine. The vaccines available today are Sinovac vaccine and Astra Zeneca with the dominant vaccine is Sinovac vaccine in various vaccination services. In this case, the higher the public is looking for information about different types of vaccines. then vaccine anxiety against the adverse events following

immunisation Covid-19 will be reduced.

- c. The Correlation of Community's Perception And Anxiety of Adverse Events Following Immunisation Covid-19 In The City District Kediri City

Based on the data of the highest research results obtained, the perception of respondents to the adverse events following immunisation Covid-19 was 79 respondents (56.4%) with Intermediate anxiety 112 respondents (80.0%). The results of the analysis with the contingency coefficient test showed that with the signification of  $\alpha$  (0.05) obtained a p value of 0.000. Because the value of p value obtained by  $0.000 < \text{signification of } \alpha$  (0.05) then the research hypothesis is accepted which means there is a relationship between people's perceptions and anxiety of adverse events following immunisation Covid-19 vaccine in In The City District Kediri City. The results of this study are relevant to the research conducted by Dina Kholidiyah et al. (2021) in research title Public Perception Of Covid-19 Vaccine With Anxiety Who Will Get Vaccinated Covid-19 Vaccination. The incident of the Covid-19 pandemic makes people anxious about the physical and psychological impact. The acceleration of the Covid-19 vaccine in Indonesia as a form of herd immunity is an effort that is sought for all Indonesian people, one of which is an effort to reduce psychological anxiety that has a very impact on health.. In addition, education that continues to be carried out by the Government of Indonesia through various cross-sectors is sought so that the public understands the benefits of the Covid-19 vaccine. The acceleration of the Covid-19 vaccine will succeed in line with the high participation of the community, and along with the vaccination there is a post-immunization follow-up event that has an impact on the community so that it is afraid to immunize, so that various educational efforts are needed through various approaches.. Through the education of the Covid-19 Vaccine and the incidence of follow-up after the Covid-19 vaccine immunization there is an increase in knowledge so that community understanding is formed, and the high knowledge of the community is able to affect the anxiety of the community about adverse events following immunisation Covid-19 vaccine.

#### IV. CONCLUSION

- a. According to the study's findings, more over half of respondents have an unfavorable view of covid-19 immunization. There were 79 people who responded (56.4%), and nearly half of them (61 respondent) thought covid-19 immunization was a good idea (43.6 percent )
- b. When it comes to getting the Covid-19 vaccine, there is a lot of fear among the public. According to the findings of the survey, the majority of respondents had Intermediate anxiety, with 112 respondents (80.0%), and a minor percentage of respondents had Basic anxiety, with 10 respondents (7.0 percent)
- c. A p value of 0.000 was derived from the results of the contingency coefficient test with a significance of (0.05). The research hypothesis is approved since the p value obtained by 0.000 signification (0.05) indicates that there is a relationship of Community's Perception And Anxiety of Adverse Events Following Immunisation Covid-19 In The City District Kediri City

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# Food Safety Analysis Based on Food Handlers at Girl Islamic Boarding School Hidayatul Mubtadia'at Lirboyo

Panca Radono<sup>1</sup>; Anie Sofia Africhiati<sup>2</sup>

<sup>1a</sup> Institut Ilmu Kesehatan Strada Indonesia, Kediri, Indonesia

<sup>2b</sup> Institut Ilmu Kesehatan Strada Indonesia, Kediri, Indonesia,

<sup>1</sup> fiverado@gmail.com;\*

\* Corresponding author

## ABSTRACT

*Keywords:*

*Behavior of food handler.  
Food Safety*

**Introduction:** Food is a basic human need that is used for growth and development process. Food safety problems occur because of the food product is exposed to a dirty environment, so the food becomes contaminated by substances that can harm human health. The purpose of this study was to determine food handler's behavior with the implementation of food safety in food at girl Islamic boarding school hidayatul mubtadia'at lirboyo.

**Methods:** The research design used in this study was observational, using cross-sectional approach. The population of all food handlers in Girl Islamic Boarding School Mubtadia'at Lirboyo., by simple random sampling technique obtained a sample of 32 respondents. The independent variable in this study was the behavior of handler's food, while the dependent variable was food safety. The research instrument used a questionnaire and the results were analyzed using Spearman Rank test.

**Result:** The results showed 32 respondents have less behavioral food security in the medium category that is 16 respondents (50.0%). Results of analysis using Spearman rank test showed a p-value = 0.000 < $\alpha$  = 0.05 so that H0 rejected and H1 accepted meaning there is a food handler behavior with food safety in the operation of the food in Girl Islamic Boarding School Mubtadia'at Lirboyo.

**Discussion:** The behavior of the food handlers or managers of the most important procedures in order to maintain food security. Procedures maintain the cleanliness of one of them is related to the attitudes and behavior of clean. With this expected pattern of preventive measures such as sanitation managers of food handlers and handlers in Islamic boarding school.

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## I. INTRODUCTION

Food is a basic human need that is used for the process of growth and development. In addition to the process of growth and development, food also contains nutrients needed by the human body and also needed by microorganisms (such as bacteria and fungi) to sustain life. Therefore, food must be processed and stored properly to prevent food contamination from microorganisms. Every ready-to-eat food always undergoes a process of preparation, selection of raw materials, processing, storage, transportation to presentation. Of all these stages, there is a risk of causing food poisoning if food control is not carried out properly and correctly<sup>1</sup>.

According to Djarisman (2004) in Ilmi (2014), food is a basic human need for survival and as a source of energy to carry out physical and biological activities in everyday life. The food needed must be healthy in the sense of having optimal and complete nutritional values such as vitamins, minerals, carbohydrates, proteins, fats, and others. Food must also be pure, clean and intact in the sense that it does not contain contaminants and must be hygienic<sup>2</sup>.

According to Ilmi (2014), food poisoning is often found. Food poisoning is usually caused by consuming food or drink contaminated with toxic chemicals. However, food poisoning is also caused by poor food preparation and presentation, poor hygiene, cross-contamination, vector animals such as insects and rodents that land on food ingredients or after serving<sup>3</sup>.

In food management the things that must be considered are the source of food ingredients whether they are not polluted by insecticides and other pollution and not in a damaged state, in transportation basically has two objectives, namely food ingredients are not damaged and polluted, food storage does not occur contamination, Food processing is usually in the kitchen, so it is necessary to pay attention to the sanitation of the kitchen and its handlers as well as the storage and presentation of food to maintain sanitation<sup>3</sup>.

Rapiasih & Prawiningdyah (2010), said that the most important factors in determining foodborne diseases are the lack of knowledge of food handlers and ignorance of safe food management. Based on the records of BPOM Pekanbaru, on April 20, 2011, a case of food poisoning occurred at the Dar El Hikmah Islamic Boarding School. And this case is a big case because it caused a total of 161 victims, although no one died. In 2007, 54 students of the Al Falah Abu Lam'u Islamic boarding school in the sub-district of Want Jaya, Aceh Besar, Nanggro Aceh Darussalam, were rushed to the hospital. They are suspected of having food poisoning served by the pesantren<sup>4</sup>.

In 2016, 14 students of the Nurul Huda LDII Islamic boarding school in Tempurejo Village, Pesantren District, Kediri City, were suspected of having food poisoning a few hours after eating sahur in the boarding school environment (Beritajatim.com). And there are many more incidents of food poisoning that occur in various Islamic boarding schools as a result of food processing that is not in accordance with the principles of food hygiene and sanitation. Based on this background, the researcher is interested in carrying out research entitled "Food Safety Analysis Based On Food Handlers At Girl Islamic Boarding School Hidayatul Mubtadia'at Lirboyo"

## II. METHODS

The research design used in this study was observational, using an approach cross-sectional. The total population is all food handlers at the Pondok Pesantren Putri Hidayatul Mubtadia'at Lirboyo, with a simple random sampling technique obtained from a sample of 32 respondents. The independent variable in this study is the behavior of the handler, while the dependent variable is food safety. The research instrument used was a questionnaire sheet and the results were analyzed using test Spearman rank.

## III. RESULTS AND DISCUSSION

### *Characteristics of Respondents*

Characteristics of respondents in this study include the characteristics of respondents based on age, education, and length of work.

No.	Behavior	$\Sigma$	%
1	Less	18	56,3
2	Enough	11	34,4
3	Good	3	9,4
<b>Total</b>		<b>32</b>	<b>100,0</b>

Table 1 Characteristics of respondents based on age, education, and length of work for handlers at the Hidayatul Mubtadia'at Lirboyo Islamic Boarding School

Table 2 Behavior of Food Handlers at Pondok Pesantren Putri Hidayatul Mubtadia'aat Lirboyo

Characteristics	$\Sigma$	%
<b>Age</b>		
15-20 years	14	44
21-30 years	18	56
<b>Education</b>		
Basic (elementary, junior)	6	19
Secondary Education (High School)	26	81
<b>Period of working</b>		
<1 year	1	3
1-2 years	6	19
>2 years	25	78

Table 3 Food Safety in Food Service at the Putri Hidayatul Mubtadia'aat Lirboyo Islamic Boarding School.

No.	Keamanan Pangan	$\Sigma$	%
1	vulnerable, unsafe	0	0,0
2	vulnerarable, safe	0	0,0
3	Average	18	56,3
4	Good	14	43,8
	<b>Total</b>	<b>32</b>	<b>100.0</b>

Table 4 Relationship Behavior With food handlers Food Safety In Food Operation In Pondok Putri Hidayatul Mubtadia'aat Lirboyo Islamic Boarding School.

Behavior		Food Safety			Total
		Moderate	Good		
Less	Count	16	2	18	
	% of Total	50.0%	6.3%	56.3%	
Enough	Count	2	9	11	
	% of Total	6.3%	28.1%	34.4%	
Good	Count	0	3	3	
	% of Total	.0%	9.4%	9.4%	
Total	Count	18	14	32	
	% of Total	56.3%	43.8%	100.0%	
<i>p-value = 0.000 &lt;= 0.05</i>			<i>r = 0.749</i>		

#### Food handler behavior at the female Islamic boarding school Hidayatul Mubtadia'aat Lirboyo handling

Food behavior at the female Islamic boarding school Hidayatul Mubtadia'aat Lirboyo it is handling known that most of the respondents have food behavior in the poor category, namely 18 respondents (56.3%).

Research results obtained food handlers do not yet apply food processing requirements personal hygiene(*personal hygiene*) a food handler. It is known that most of the respondents have food handling behavior in the less category, namely 18 respondents (56.3%).

These behaviors include (1) washing hands before processing food, personal hygiene that still needs to be improved on female students in terms of hand washing is still very lacking, so there are only 10% or a total of 3 students who have washed their hands before cooking food; (2) Wearing an apron when working, the cottage does not provide aprons, so that the implementation of hygiene requirements is constrained by the existing infrastructure; (3) Wearing a head covering when working, in this case it is definitely neat because the food handlers in this study were female students, so all of them wore the hijab; (4) Wearing masks when working, female students do not wear masks because they are not provided by the boarding school; (5) wearing gloves, the cottage does not provide gloves, so that the implementation of hygiene requirements is constrained by the existing infrastructure; (6) Using assistive devices / tongs when taking food, as well as an apron, food tongs are still not available; (7) Covering cooked food, in the cottage kitchen or in the dining room, it is rare for female students to cover the food they have cooked, this is also due to the lack of infrastructure or not yet provided by the boarding school; (8) Not conversing, 46.9% have done this, but there are still some handlers who have not implemented this because while cooking, on average, they always talk to each other; (9) Not scratching their limbs, there are only 10 handlers or 31.25% who have not scratched their limbs while cooking, this means that there are still many handlers who must be given counseling about the importance of hygiene requirements to them, that this will also affect the incidence of diarrhea; (10) Not chewing food, most of the handlers have done, only some are chewing, but chewing to taste the ingredients that are being cooked; (11) Not using jewelry, even though there are rules for not wearing jewelry or other valuables in the cottage, this is still not obeyed by the students, so that when cooking there are still many of them who wear jewelry, which is 78.1 %; (12) Do not lengthen the nails, this is the rule of the lodge, so 62.5% of them have short nails; (13) Separating raw materials from final products, because the kitchen is not so wide, so that to separate raw materials from final products can only be done by 2 people who may be experts in this matter; (14) Not eating and drinking while working, has been applied by many students; (15) Dispose of garbage in its place, the trash can is limited so that for the time being the students collect the trash in a plastic bag that can be used as a temporary container, only after that they will throw it into the trash that has been provided. So that in this case there are only 7 people or 21.8% who dispose of waste in its place; (16) Covering wounds on the body, adequate medical equipment in the cottage so that the students can be treated for wounds on their bodies in a simple way, 93.7% are able to treat wounds by wrapping the wound; (17) Do not spit, because the cooking conditions in a crowd and turns do not allow spitting in the kitchen area, already 62.5% who do not spit while cooking or eating food; (18) No smoking, because female students are so no one smokes; (19) Not sneezing and coughing towards food, sneezing and coughing are reflexes or unintentional so that there are still some touchers of 59.3% who still sneeze or cough towards food.

From the results of the answers above, this behavior is because food handlers still carry out risky behaviors when processing food, including not wearing masks, not wearing aprons and gloves. Other risky behaviors that are often carried out by food handlers include conversing, scratching limbs, using jewelry, and chewing food while processing food.

### **Food Safety in the Provision of Food at the Putri Hidayatul Mubtadia'at Lirboyo Islamic Boarding School**

Food Safety in the Provision of Food at the Putri Hidayatul Mubtadia'at Lirboyo Islamic Boarding School it is known that most of the respondents have food safety in the moderate category, namely 18 respondents (56.3%).

The results showed that the food safety at the research site was categorized as moderate, which means that there is a possibility that the food produced is contaminated with rice. Such as contamination of food ingredients both in processing and in the presentation which is still not in accordance with the hygiene requirements of food handler behavior. And it can also come from the equipment used for cooking as well as clothing and personal hygiene that is lacking. Based on observations made to food handlers, they wash the cutlery used using water and soap, but the water used is stagnant water which is stored in a tub and used for several washings.

Based on the results of the analysis of food handlers' answers, it is known that the thing that is rarely considered is closing the food so that it allows the food to be infested by flies and insects which are most likely to be contaminated, causing diseases such as diarrhea.

### **Relationship between food handler behavior and food safety in food delivery at the Putri Hidayatul Mubtadia'aat Lirboyo Islamic Boarding School**

. The results of the analysis using the test *Spearman Rank* showed *p-value* = 0.000 < = 0.05 so that H0 was rejected and H1 was accepted, which means that there is a relationship between food handler behavior and food safety in food administration at the Putri Hidayatul Mubtadia'aat Lirboyo Islamic Boarding School.

In accordance with the results of observations that have been made by researchers, there are 15 indicators of food safety assessment, including (1) The presence of hair in food, this is probably precisely because respondents who wear the hijab every day so that the hair is not maintained and left alone so that the hair will be easy fall out during activities, one of which is during the cooking process in a kitchen that has hot room conditions; (2) The presence of gravel in the food, the lack of cleanliness of the foodstuffs to be processed, in the observation it appears that the rice to be cooked is not filtered (cleaning the gravel) which in the end results in the rice / ready-to-eat food containing small pebbles; (3) Presence of metals in food, during the observation, researchers did not find metals in food ingredients or ready-to-eat foods; (4) Growing mold on food, the researchers did not find any mushrooms in food or ready-to-eat food, because in the cottage kitchen there is already a schedule and coordinated food supply so that cooked ingredients and food will always run out and it is not possible for mold to develop. ; (5) The growth of insect larvae on food, during the observation no larvae were found; (6) Food that is infested with insects, while observing ready-to-eat food, especially insects are always infested, this is due to the dark and humid and even dirty kitchen conditions that make the insects infest the food, another reason is due to limited infrastructure (serving hood) / cover food from the lodge; (7) Food smells different than usual, it is not found because the average food always runs out without residue; (8) The smell of food causes nausea, all processed food is fresh so that there is no food that causes nausea; (9) Smell of rotten food, not found; (10) Other colored spots appeared on the food, not found at the time of observation, on average the students cook using the spices they make themselves so that the resulting color also looks normal; (11) Food changes color as a whole, not found at the time the researcher made observations; (12) Colorless food, as is customary, was found because in the cooking process the students mixed the spices they mixed using natural dyes (turmeric, pandan leaves, bay leaves, etc.); (13) Liquid food turns into solid, no; (14) Food changes to be more liquid, not present during observation; (15) The appearance of liquid in solid food, or solid in liquid food, was not found at the time of observation. So that from 15 food safety indicators found including the presence of hair in food, the presence of gravel in food, and food infested with insects which will result in moderate food safety. With these conditions, the quality of food becomes unhygienic and can cause diseases carried by these insects.

## **IV. CONCLUSION AND RECOMMENDATIONS**

### **Conclusion**

1. Most of the respondents have a behavior of food handlers in the less category, namely 18 respondents (56.3%).
2. Most respondents have food safety in the medium category, namely 18 respondents (56.3%).
3. There is a relationship between the behavior of food handlers and food safety in the provision of food at the Pondok Pesantren Putri Hidayatul Mubtadia'aat Lirboyo.

### **Suggestions**

1. for Further Research  
Develop this research by examining other factors other than handlers that affect food safety in food managers in the cottage.
2. Research Place

- Provide input to food managers in order to improve their personal hygiene so as to avoid food contamination.
3. Health Institutions  
Increase supervision on food processing, especially those carried out en masse every day.
  4. Educational Institutions  
Improving the quality of learning about personal hygiene in food handlers, because it can encourage students to understand it more easily.
  5. Respondent Institutions  
Improve their quality by carrying out food processing processes according to their needs.

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# Perception, Interest and Quality of Comprehensive Emergency Neonatal Obstetrics Services Towards Patient's Satisfaction at Moh. Anwar General Hospital Sumenep District

Darmawan Eko Setyant<sup>1</sup>, Sentot Imam Suprapto<sup>2</sup>

<sup>1</sup>Health Center Raas Sumenep

<sup>2</sup>Strada Indonesian Institute of Health Sciences

Corresponding Author: [philanthropist@gmail.com@gmail.com](mailto:philanthropist@gmail.com@gmail.com)

## ABSTRACT

*Keywords:*  
Satisfaction,  
Interest, Service  
Quality & Perception

**Background:** The perfection of a health service, on the one hand, can lead to satisfaction for every patient in accordance with the average level of satisfaction of the population, and on the other hand, the procedures for its implementation are in accordance with the code of ethics and professional service standards that have been set.. The purpose of this study is to analyze the effect of perception, interest and quality of comprehensive emergency obstetric and neonatal care (PONEK) on patient satisfaction at General Hospital Moh. Anwar, Sumenep Regency.

**Methods:** The design of this research is an observational quantitative research with a cross sectional approach with the focus of the research being directed at analyzing the effect of perception, interest and quality of comprehensive emergency obstetric and neonatal care (PONEK) on patient satisfaction at General Hospital Moh. Anwar, Sumenep Regency. The total population is 141 respondents and a sample of 105 respondents is taken using the Simple Random Sampling technique.

**Results:** The findings show that most respondents have a good category perception as many as 58 respondents (55.2%). Most respondents have high interest category as many as 58 respondents (55.2%). Most of the respondents have good service quality category as many as 92 respondents (87.6%). Most respondents have satisfaction category satisfied as many as 60 respondents (57.1%). Based on the results of Multiple Linear Regression analysis shows that with a p-value of 0.000 < 0.05 then H1 is accepted so it can be concluded that simultaneously there is influence perceptions, interests and quality of comprehensive emergency obstetric and neonatal care (PONEK) on patient satisfaction at General Hospital Moh. Anwar, Sumenep Regency with magnitude influence 84%.

**Conclusions:** It is expected that respondents can provide constructive input and criticism so that the services provided can be in accordance with what is expected

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## I. INTRODUCTION

Development in the health sector is an important part of national development. The main objective of development in the health sector is to improve the health status of the community, by providing wider, equitable and affordable health services, both for urban communities and rural communities. A high degree of health is expected to improve the quality of human resources itself (1).

The perfection of a health service, on the one hand, can lead to satisfaction for every patient in accordance with the average level of satisfaction of the population, and on the other hand the procedures for its implementation are in accordance with the code of ethics and professional service standards that have been set. Satisfaction is a person's feeling of pleasure that comes from a comparison between the pleasure of an activity and a product with his expectations (2). Therefore, health services, especially midwifery services, must be provided carefully so that women can achieve

good health, because midwives as health workers who are closest to women in reproductive problems have independent functions in the form of fulfilling the needs of security and comfort, love and love, price. self,

A complex and continuing problem in the health sector, especially midwifery, is maternal and infant mortality. According to Rachmaningtyas in 2019 (3), the high maternal mortality rate in 2018 reached 5,019 people or 359 per 100,000 live births. This number continues to increase every year when viewed from 2017 which was 4,985 people and in 2016 it was 5,118 people. Quality maternal and newborn health services can prevent high mortality rates. The mortality rate for newborns in Indonesia whose mothers receive antenatal care and delivery assistance by professionals is one-fifth of the mortality rate for infants whose mothers do not receive services (UNICEF, 2019).

The number of patient visits at Ponek General Hospital Moh. Anwar, Sumenep Regency, which has decreased in 3 months consisting of general patients and JKN, lastly shows the low interest of the community to visit Ponek General Hospital Moh. Anwar, Sumenep Regency. In Sumenep Regency itself there are several hospitals, clinics and health centers both owned by the government and private. With so many health service providers, people are starting to try to get health services in different places in the hope of getting better services, so that people are able to compare the health services they receive based on the perceptions and impressions they get while getting services (District Health Office). Sumenep, 2020).

The number of outpatient visits at PONEK General Hospital Moh. Anwar, Sumenep Regency, which has decreased in 3 years consisting of general patients and JKN, lastly shows the low interest of the community to make repeat visits to PONEK General Hospital Moh. Anwar, Sumenep Regency. In Sumenep Regency itself there are several hospitals and health centers both government and private. With so many health service providers, people are starting to try to get health services in different places in the hope of getting better services, so that people are able to compare the health services they receive based on the perceptions and impressions they get while getting services (Sumenep Health Office). , 2019).

Data on the number of outpatient visits at General Hospital Moh. Anwar, Sumenep Regency, from the last 4 years it was found that in 2016 the number of visits was 10,619 patients. In 2017 it decreased to 9,788 patients. In 2018 it decreased again to 8,915 patients and in 2019 the number of visits was 8,592 patients (Medical Record Data at Moh. Anwar Hospital, Sumenep Regency, October 2020).

Based on the results of a preliminary study conducted by researchers on October 3, 2020 at General Hospital Moh. Anwar, Sumenep Regency to 10 respondents, it was found that 6 respondents (60%) said the midwives who cared for were less responsive to patient complaints, and sometimes seemed less cooperative. So that patients sometimes feel uncomfortable and patient satisfaction is low because the services provided by health workers are not good. While 4 respondents (40%) said the service was good, health workers were responsive to patient complaints.

Patient satisfaction according to Rahmayanty (2) is a positive evaluation of various service dimensions. The services evaluated can be in the form of a small part of the service, such as one type of service from a series of outpatient or inpatient services, all types of services provided to cure a patient to the overall service system in health facilities. The study of a patient's satisfaction must be understood as something that has many dimensions or variables of influence. To retain customers, the hospital is required to always maintain consumer trust by paying careful attention to consumer needs in an effort to fulfill the desires and expectations of the services provided. Hospital consumers, in this case patients who expect health services in hospitals, not only expect medical and nursing services but also expect comfort, good accommodation and harmonization between hospital employees and patients, thus it is necessary to improve the quality of health services in hospitals (4).

Improving service quality is one of the most crucial issues in management, both in the government and private sectors. This happens because on the one hand the community's demands for improving service quality from year to year are getting bigger, while on the other hand the practice of service delivery has not experienced significant improvements (Purwoastuti and Walayani, 2015). Hanggandari (5) defines service quality as a measure of how well the level of service provided is able to match consumer expectations. Based on this definition, service quality can be realized through

meeting the needs and desires of patients and the accuracy of delivery to match patient expectations. Thus there are two main factors that affect service quality, namely the expected service and the perceived service.

Of the various problems related to the quality of service of a hospital, there is one thing that must be considered, namely satisfaction. A person's satisfaction with services is related to the ability of the service provider to provide care. Community satisfaction in utilizing outpatient services is influenced by several factors, including the patient's perception of the quality of outpatient services and also interest (6). Based on the above conditions, the authors are interested in researching the perception, interest and quality of comprehensive emergency obstetric and neonatal care (PONEK) on patient satisfaction at GENERAL HOSPITAL Moh. Anwar, Sumenep Regency.

## II. METHOD

In this study, the researcher used an observational quantitative design with a cross sectional approach, which is a study to study the dynamics of the correlation between risk factors and effects, by approaching, observing or collecting data all at once (point time approach), that is, each subject. The study was observed only once and measurements were made on the status of the character or variable of the subject at the time of examination. This does not mean that all research subjects are observed at the same time (Soekidjo, 2012). This research will analyze the effect of perception, interest and quality of comprehensive emergency obstetric and neonatal care (PONEK) on patient satisfaction at General Hospital Moh. Anwar, Sumenep Regency. The total population is 141 respondents and a sample of 105 respondents is taken by using Simple Random Sampling technique. Data analysis using Linear Regression test. This research has been conducted an ethical test with the number SK: 2303/KEPK/III/2021.

## III. RESULT AND DISCUSSION

Table 1 Results of linear regression analysis analysis the effect of perception, interest and quality of comprehensive emergency obstetric and neonatal care (PONEK) on patient satisfaction at General Hospital Moh. Anwar Sumenep Regency which was held on May 1-30 2021 with a total of 105 respondents

No	Variable	Sig	B	<i>R</i> <sup>2</sup>	Sig
1	(Constant)	.011	1.550		
2	Perception	.000	.554		
3	Interest	.000	.388	0.84	0.000
4	Service Quality	.029	.008		

### 1. Partial

#### a. The Effect of Perception on Satisfaction

Based on the results of Linear Regression analysis shows that the p-value 0.000 <0.05 then H1 is accepted so it is concluded that partially there is influence perceptions of patient satisfaction in General Hospital Moh. Anwar, Sumenep Regency

#### b. The Effect of Interest on Satisfaction

Based on the results of Linear Regression analysis shows that the p-value 0.000 <0.05 then H0 is rejected and H1 is accepted so it is concluded that partially there is influence interest in patient satisfaction in General Hospital Moh. Anwar, Sumenep Regency

#### c. The Effect of Service Quality on Satisfaction

Based on the results of Linear Regression analysis shows that the p-value is 0.029 <0.05, then H0 is rejected and H1 is accepted, so it can be concluded that partially there is influence the quality of comprehensive emergency obstetric and neonatal care (PONEK) on patient satisfaction at General Hospital Moh. Anwar, Sumenep Regency

### 2. Simultaneous

Based on the results of Multiple Linear Regression analysis shows that with a p-value of 0.000 <0.05 then H1 is accepted so it can be concluded that simultaneously there is

influence perceptions, interests and quality of comprehensive emergency obstetric and neonatal care (PONEK) on patient satisfaction at General Hospital Moh. Anwar, Sumenep Regency with magnitude influence 84%.

#### A. Patient Perceptions of Comprehensive Emergency Neonatal Obstetrics (PONEK) Services at General Hospital Moh. Anwar, Sumenep Regency

The results showed that most of the respondents had a good category perception as many as 58 respondents (55.2%). While a number of 47 respondents (44.8%) have a perception of the category less.

Service is an activity or a series of tools that are invisible (cannot be touched), which occur due to interactions between consumers and employees or other things provided by service providers that are intended to solve consumer problems (7). People as consumers certainly want quality services. Service quality is defined as the level of excellence expected and control over the level of excellence to meet customer desires. Service quality can be interpreted as an effort to fulfill consumer needs and desires as well as the accuracy of delivery in balancing consumer expectations (8).

Good services are health services that are available to the community (acceptable) and sustainable (sustainable). This means that all types of health services needed by the community are found and their presence in the community is available at any time of need. Health services must be reasonable (appropriate) and acceptable (acceptable) by the community. This means that health services can overcome the health problems faced, do not conflict with customs, culture, beliefs and beliefs of the community, and are unnatural, not a condition of good health services.

The goals of health services include providing consultation to patients who need the opinion of a specialist doctor, with treatment or not and to provide follow-up for inpatients who have been allowed to go home but whose health condition is still under control. Treatment should have a comfortable and pleasant environment for the patient. This is important to note because from the treatment the patient gets the first impression about the health facility.

Based on the results of the study, it was found that many respondents had perceptions in the less category. Where this is due to the incompatibility of patient expectations with the reality of services provided by health workers. According to respondents, several things that must be improved are related to the patient's confidence in the abilities of health workers, where most of the respondents do not believe in the abilities of health workers. This is also because officers are considered slow in responding to complaints made by patients. This causes the services provided to be less in line with patient expectations.

#### B. Patient Interest in Comprehensive Emergency Neonatal Obstetric Service (PONEK) at General Hospital Moh. Anwar, Sumenep Regency

The results showed that most of the respondents had a high interest category as many as 58 respondents (55.2%). While a number of 47 respondents (44.8%) have low interest category.

According to Crow and Crow in Djaali (9) said that interest is related to the style of movement that encourages a person to face or deal with people, objects, activities, experiences stimulated by the activity itself. According to Djaali (9), interest is the mobilization of feelings and interpretations for something (there is an element of selection). In addition, interest is part of the realm of affection, starting from awareness to the choice of values. Interest does not arise alone, there is an element of need.

Theoretical studies on the reuse of the opinion of Zeithaml et al. (10) that future intention to repurchase (future intention) emphasizes the importance of measuring customer repurchase interest to find out the wishes of customers who remain loyal or leave a service. From the experience that it can be noted, the target of repurchasing goods or services is the quantity and quality of goods or services purchased not to be lacking. Another thing that is still related to repeat purchases is maintaining the quality of goods or services so that they do not decrease (11).

Continuous reuse of the same service will show patient loyalty to the service. The level of patient satisfaction will affect the degree of service quality, the more satisfied a patient is with a

service, the more loyal he will be to the service. However, loyalty is often not caused by patient satisfaction but because of compulsion and lack of choice.

According to researchers, interest is persistent tendency to pay attention to and remember some activities. In other words, interest is also a sense of preference and a sense of attachment to a thing or activity, without anyone telling. Interest is not only expressed through statements that show a feeling then implemented through active participation in an activity. Based on the results of the study, it was found that almost half of the respondents had a high interest category where patients would continue to use the comprehensive emergency obstetric and neonatal care (PONEK) facilities at GENERAL HOSPITAL Moh. Anwar, Sumenep Regency as the first referral to check the patient's womb where the patient feels comfortable with all available comprehensive emergency obstetric and neonatal care (PONEK) at GENERAL HOSPITAL Moh. Anwar, Sumenep Regency. However, there are some respondents who have a low interest category where this is because they feel they rarely feel pregnancy complaints and prefer to use herbal medicine if the complaints are not severe and are not in a hurry to check with the comprehensive emergency neonatal obstetric service (PONEK) in Indonesia. Mohd Hospital. Anwar, Sumenep Regency.

### C. The Quality of Comprehensive Emergency Neonatal Obstetrics (PONEK) Services at General Hospital Moh. Anwar, Sumenep Regency

The results showed that most of the respondents had good service quality category as many as 92 respondents (87.6%). While a number of 13 respondents (12.4%) had poor service quality category.

Service is an activity or a series of tools that are invisible (cannot be touched), which occur due to interactions between consumers and employees or other things provided by service providers that are intended to solve consumer problems. People as consumers certainly want quality services. Service quality is defined as the level of excellence expected and control over the level of excellence to meet customer desires. Service quality can be interpreted as an effort to fulfill consumer needs and desires as well as the accuracy of delivery in balancing consumer expectations .

One of the services that is widely used by the community is health services. Utilization of health services by using the service facilities provided either in the form of outpatient care, inpatient care, home visits by health workers or other forms of activity from the use of these services based on the availability and continuity of services, public acceptance and fairness, easily accessible by the community, affordable and quality. Good services are health services that are available to the community (acceptable) and sustainable (sustainable). This means that all types of health services needed by the community are found and their presence in the community is available at any time of need. Health services must be reasonable (appropriate) and acceptable (acceptable) by the community. This means that the health service can overcome the health problems faced, does not conflict with customs, culture, beliefs and beliefs of the community, and is unnatural, is not a condition of good health care.

The location angle is easily accessible by the community, so the distribution of health facilities is very important. Coverage of auxiliary facilities to determine effective demand. If the facility is easily accessible by using the available means of transportation, this facility will be widely used. Past user levels and trends are the best indicators of short and long term changes in future demand.

The services provided are affordable (affordable) by the community, where the cost of these services is sought in accordance with the economic capacity of the community. Expensive health services may only be enjoyed by some people. And shows the level of perfection of the health services provided (quality/quality) and shows the healing of the disease and the safety of actions that can satisfy the service users in accordance with the standards that have been set.

From the results of the study, the researcher argues that health services must have various basic requirements, namely the basic requirements that influence the community in determining their choice to use health services. The services needed by the community in general are health

services that are available in the community and sustainable, health services must be reasonable and acceptable to the community, locations are easily accessible by the community, the services provided are affordable and the perfection of health services provided. With good service, it will attract people to use health facilities properly and wisely.

In the results of the study, it was found that most of the respondents had good service quality categories, but there were still some respondents who considered that the quality of services provided by health workers to patients was in the poor category. Where this is because patients judge that health workers are less responsive to immediately provide health services so that they tend to be slow. In addition, it is also caused by patients assessing that health workers are less concerned with patient complaints where officers are less concerned with patients.

#### **D. Patient Satisfaction in the PONEK system at General Hospital Moh. Anwar, Sumenep Regency**

The results showed that most of the respondents had satisfaction in the satisfied category as many as 60 respondents (57.1%). While a number of 45 respondents (42.9%) had a dissatisfied category of satisfaction.

Understanding the needs and desires of patients is an important factor that affects patient satisfaction. Satisfied patients are a very valuable asset because if patients are satisfied they will continue to use the service of their choice, but if patients are not satisfied they will tell twice as much to others about their bad experience. To create patient satisfaction, health facilities must create and manage a system to obtain more patients and the ability to retain patients.

Patients are sick people who are treated by doctors and other health workers in practice. While satisfaction is a person's feeling of pleasure that comes from a comparison between the pleasure of an activity and a product with his expectations (2). Nursalam (2) states that satisfaction is a person's feelings of pleasure or disappointment that arise after comparing their perceptions or impressions of the performance or results of a product and their expectations. Tjiptono (2014) argues that customer satisfaction is an emotional response to experiences related to certain purchased products or services, retail outlets, or even behavioral patterns (such as shopping behavior and buyer behavior), as well as the market as a whole.

According to Yamit (2017), customer satisfaction is the result (outcome) that is felt on the use of products and services, equals or exceeds the desired expectations. Meanwhile, Pohan (2014) states that patient satisfaction is the level of patient feelings that arise as a result of the performance of the health services he gets, after the patient compares with what he expects. Another opinion of Mamik (2015) that patient satisfaction is an evaluation or assessment after using a service, that the selected service at least meets or exceeds expectations.

According to Wijono (2014) several things that affect patient satisfaction are the approach and behavior of officers, especially at the time of the first visit, the quality of the information provided, the appointment procedure, waiting time, health checks and taking drugs, public facilities in health facilities and the results of the treatment received. .

Patient satisfaction is a benchmark that the services provided by health workers are good or not. Patient satisfaction is influenced by various things, namely the suitability between patient expectations and the reality that patients encounter in the field, the second form of service during the service process is provided by health workers, personal behavior of health workers to patients, atmosphere and physical conditions of the environment that are managed. by health workers, fees or prices to be paid by patients and promotions or advertisements that are in accordance with reality.

From the results of the study, it was found that almost half of the respondents were dissatisfied with the services provided by health workers where this was due to the fact that the patient's reality and expectations did not match the health services provided. Meanwhile, most of the patients were satisfied with the services provided by the comprehensive emergency obstetric and neonatal (PONEK) health workers at GENERAL HOSPITAL Moh. Anwar Sumenep Regency because health workers are able to serve patients very well, health workers hear patient complaints and respond to them do not distinguish between JKN and non-JKN patients. In

addition, the facilities and infrastructure available at GENERAL HOSPITAL Moh. Anwar, Sumenep Regency is very complete and has a clean environment.

**E. The Influence of Perception on Patient Satisfaction in Comprehensive Emergency Neonatal Obstetrics Services (PONEK) at Moh. Anwar General Hospital Sumenep Regency**

Based on the results of Linear Regression analysis shows that the p-value 0.000 <0.05 then H<sub>0</sub> is rejected and H<sub>1</sub> is accepted so it is concluded that partially there is the effect of perception on patient satisfaction in comprehensive emergency obstetric and neonatal care (PONEK) at General Hospital Moh. Anwar, Sumenep Regency.

The role of health workers in providing health services is very important, especially as health service implementers, so it is natural that the ability and performance of health workers is one of the determinants of success in health services. Health workers should be able to have a rational attitude as well as have a high spirit of service, be creative, innovative, disciplined, knowledgeable and skilled and be able to uphold the ethics of the health workforce.

Health services are a form of professional service that is an integral part of health services based on health science and tips aimed at individuals, families, groups, or communities, both healthy and sick. Health workers are required to complete their duties properly so that patient satisfaction is maintained. To handle patients who come to visit, the officers must be skilled and able to carry out their duties properly. One of the factors driving the performance of health workers is motivation.

The quality of health services can be seen from the performance and ability of the health workers. The ability of a health worker is a person's ability to do something with certain expertise in a hospital or organization that is expected to be able to carry out his responsibilities in order to achieve a goal. The ability of health workers is one element in maturity related to abilities or skills that can be obtained from education, training and an experience, every health worker must have certain abilities and skills to help communities, groups and individuals (Thoha 2013).

According to Wijono (2014) several things that affect patient satisfaction are the approach and behavior of the officers, especially at the time of the first visit, the quality of the information provided, the appointment procedure, the waiting time for drugs, health checks and taking drugs, public facilities at the hospital and the results of the treatment received. .

Patient satisfaction is a benchmark that the services provided by health workers are good or not. Patient satisfaction is influenced by various things, namely the suitability between patient expectations (perceptions) and the reality that patients encounter in the field, the second form of service during the service process is provided by health workers, personal behavior of health workers to patients, atmosphere and physical conditions of the environment. managed by health workers, costs or prices to be paid by patients and promotions or advertisements that are in accordance with reality.

**F. The Effect of Interest on Patient Satisfaction in Comprehensive Emergency Neonatal Obstetrics (PONEK) Services at General Hospital Moh. Anwar, Sumenep Regency**

Based on the results of Linear Regression analysis shows that the p-value 0.000 <0.05 then H<sub>0</sub> is rejected and H<sub>1</sub> is accepted so it is concluded that partially there is the effect of interest on patient satisfaction in comprehensive emergency obstetric and neonatal care (PONEK) at General Hospital Moh. Anwar, Sumenep Regency.

A person's satisfaction with services is related to the ability of the service provider to provide satisfaction. Consumer satisfaction can be defined as big quality or broad quality (wide satisfaction). This broad satisfaction is related to the overall quality of service quality, financing, distribution channels, guarantee of safe use and aspects of employee morality/performance of a health service organization. Community satisfaction in utilizing outpatient services is influenced by several factors, including the response time of health workers to patients (12).

The perfection of a health service, on the one hand, can lead to satisfaction for every patient in accordance with the average level of satisfaction of the population, and on the other hand the procedures for its implementation are in accordance with the code of ethics and professional service standards that have been set (13). Satisfaction is a person's feeling of pleasure that comes from a comparison between the pleasure of an activity and a product with his expectations (2). Therefore, health services, especially midwifery services, must be provided carefully so that women can achieve good health, because midwives as health workers who are closest to women in reproductive problems have independent functions in the form of fulfilling the needs of security and comfort, love and love, price, self,

To retain customers, the hospital is required to always maintain consumer trust by paying careful attention to consumer needs in an effort to fulfill the desires and expectations of the services provided. Hospital consumers, in this case patients who expect health services in hospitals, not only expect medical and nursing services but also expect comfort, good accommodation and harmonization between hospital employees and patients, thus it is necessary to improve the quality of health services in hospitals (4).

Of the various problems related to the quality of service of a hospital, there is one thing that must be considered, namely satisfaction. A person's satisfaction with services is related to the ability of the service provider to provide care. Community satisfaction in utilizing outpatient services is influenced by several factors, including the patient's perception of the quality of outpatient services and also interest (12).

According to researchers, interest is a very important factor in increasing one's satisfaction. A person who has a high interest will tend to be very confident in the health services that will be provided by health workers so that they will be more satisfied with all the services that the patient gets. However, there are some respondents who have a high interest in visiting health facilities but what they find is not as expected so that patients can feel disappointed. So that according to the research conducted, there is an influence of interest on patient satisfaction in comprehensive emergency obstetric and neonatal care (PONEK) at GENERAL HOSPITAL Moh. Anwar, Sumenep Regency.

#### **G. InfluenceThe Quality of Comprehensive Emergency Neonatal Obstetrics (PONEK) Services on Patient Satisfaction at the General Hospital Moh. Anwar, Sumenep Regency**

Based on the results of Linear Regression analysis shows that the p-value is  $0.029 < 0.05$  then H1 is accepted so it is concluded that partially there is influence the quality of comprehensive emergency obstetric and neonatal care (PONEK) on patient satisfaction at General Hospital Moh. Anwar, Sumenep Regency.

Health services are an important factor in improving the health and welfare of every human being throughout the world. According to Law No. 36 of article 19 of 2009 concerning health, explains that everyone has the right to obtain health services and the government is responsible for the availability of all forms of quality, safe, efficient, and affordable health efforts by all levels of society. One of these efforts is to increase the availability and equity of basic health facilities such as hospitals and health centers in each region (Bappenas, 2013).

Service quality (service quality) can be known by comparing the perceptions of consumers on the services they receive with the services they actually expect on the service attributes of a company. Service quality is perceived as good and satisfactory if the service received or perceived is as expected, if the service received exceeds consumer expectations, then the service quality is perceived as very good and of high quality. Service quality is perceived as bad if the service received is lower than expected (Amrizal, 2014). The quality of health services refers to the level of perfection in the appearance of health services that can satisfy every user of health services in accordance with the level of satisfaction of the average population.

Service quality (service quality) can be known by comparing the perceptions of consumers on the services they receive with the services they actually expect on the service attributes of a company. Service quality is perceived as good and satisfying if the service received

or perceived is as expected, if the service received exceeds consumer expectations, then the service quality is perceived as very good and of high quality (Wijoyo, 2012).

The researcher believes that understanding the patient's needs and desires is an important thing that affects patient satisfaction. Satisfied patients are a very valuable asset because if patients are satisfied they will continue to use the service of their choice, but if patients are not satisfied they will tell twice as much to others about their bad experience. To create patient satisfaction, hospitals must create and manage a system to acquire more patients and the ability to retain patients. With a good arrangement, the comprehensive emergency obstetric and neonatal care (PONEK) at GENERAL HOSPITAL Moh. Anwar, Sumenep Regency, can provide services with accurate time and is able to provide good service even though there are so many patients who come. Thus, patients who come to comprehensive emergency obstetric and neonatal care (PONEK) at GENERAL HOSPITAL Moh. Anwar of Sumenep Regency will feel comfortable and satisfied with the services provided.

#### IV. CONCLUSION

1. Most respondents have a good category perception as many as 58 respondents (55.2%).
2. Most respondents have high interest category as many as 58 respondents (55.2%).
3. Most of the respondents have good service quality category as many as 92 respondents (87.6%).
4. Most respondents have satisfaction category satisfied as many as 60 respondents (57.1%).
5. Exist the effect of perception on patient satisfaction in comprehensive emergency obstetric and neonatal care (PONEK) at General Hospital Moh. Anwar, Sumenep Regency
6. Exist the effect of interest on patient satisfaction in comprehensive emergency obstetric and neonatal care (PONEK) at General Hospital Moh. Anwar, Sumenep Regency
7. Exist the effect of the quality of comprehensive emergency obstetric and neonatal care (PONEK) on patient satisfaction at General Hospital Moh. Anwar, Sumenep Regency

#### V. ACKNOWLEDGMENT

I solemnly declare that to the best of my knowledge, in this thesis there is no scientific work that has been submitted by another person to obtain an academic degree at a university, and there is no work or opinion that has been written or ordered by anyone. others, except those quoted in this manuscript and mentioned in the citation sources and bibliography.

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# An Analysis of Marketing Strategy by Using Internal Factors Analysis Summary (IFAS) and External Factors Analysis Summary (EFAS) for Evaluation Effort at Klinik Sinar Medika Plosoklaten

Hida Shallyana<sup>a,1</sup>, Ardi Bastian<sup>b,2\*</sup>

<sup>a</sup> Institut Ilmu Kesehatan Strada Indonesia, Kediri, Indonesia

<sup>b</sup> Institut Ilmu Kesehatan Strada Indonesia, Kediri, Indonesia,

<sup>1</sup> hida.shally@gmail.com; <sup>2</sup> ardibastian1987@gmail.com;\*

\* Corresponding author

## ABSTRACT

*Keywords:*

IFAS and EFAS,  
Clinic,  
Marketing Strategy

**Introduction:** Klinik Sinar Medika Plosoklaten operated at 2019 and can be classified as a new clinic. The data shows that the number of annual visits has increased, the number of monthly visits has fluctuated, and inpatient visits have not met the target. Researcher assesses the need for a more in-depth analysis of the internal and external factors to find out the suitable marketing strategy that is expected to help the clinic achieve the target number of visits.

**Methods:** This research was conducted qualitatively through in-depth interviews with parties in the management structure of Klinik Sinar Medika to determine the internal and external factors, as well as the distribution of results into the IFAS, EFAS, and SFAS matrices in order to obtain the suitable marketing strategies.

**Result:** The results showed that the IFAS score is 3.82 and EFAS score is 3.87.

**Discussion:** Klinik Sinar Medika is good at taking advantage of its strengths and opportunities as well as responding to its weaknesses and threats. Through the results of the Strategic Factors Analysis Summary (SFAS), the researcher recommends the suitable marketing strategies.

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## I. INTRODUCTION

Clinics are health service facilities that provide individual health services. Klinik Sinar Medika Plosoklaten operated at the end of 2019 and can be classified as a new clinic. The clinic covers several services including the emergency room, general poly, dental poly, MCH poly, and inpatient care. Based on data on the number of patient visits, the number of visits from year to year has increased, with details of visits per month fluctuating [3]. The number of inpatient visits has not met the target, while the number of outpatient visits has met the target but tends to fluctuate

## II. METHOD

This research was conducted qualitatively [16] [17] through in-depth interviews with purposively selected informants, consisting of parties in the management structure to determine strategic factors in the internal and external environment. These factors are distributed into matrices, Internal Factors Analysis Summary (IFAS), External Factors Analysis Summary (EFAS), and External Factors Analysis Summary (SFAS) to obtain the suitable marketing strategies. An excellent style manual for science writers is [7].

## III. RESULTS AND DISCUSSION

The distribution of internal strategic factors obtained from interviews based on the marketing mix into the Internal Factors Analysis Summary (IFAS) matrix, weighting and rating according to actual conditions based on the results of in-depth interviews and observations at the clinic:

*Table 1 Internal Factors Analysis Summary (IFAS)*

INTERNAL FACTORS	Weight	Rating	Score
<b>Strengths</b>			
The health services available at non-specialist inpatient clinic is quite complete	0,08	4	0,34
Health services rate	0,09	4	0,36
Location and access	0,11	5	0,56
Promotion efforts	0,11	4	0,45
Number of inpatient clinic staff	0,09	4	0,38
Legality of inpatient clinic personnel	0,11	4	0,45
Clinical infrastructure facilities	0,10	4	0,40
Patient service flow system	0,11	3	0,32
<b>sub total 1</b>	<b>0,81</b>		<b>3,25</b>
<b>Weaknesses</b>			
Distribution of workforce in each work shift	0,11	3	0,32
Online queue system only for governmental health insurance patients	0,08	3	0,25
<b>sub total 2</b>	<b>0,19</b>		<b>0,57</b>
<b>Total</b>	<b>1,00</b>		<b>3,82</b>

The distribution of external strategic factors obtained from interviews through the PESTEL approach (Political, Economic, Social, Technological, Environmental, Legal) into the External Factors Analysis Summary (EFAS) matrix and the weighting and rating according to actual conditions based on the results of in-depth interviews and observations:

*Table 2 External Factors Analysis Summary (EFAS)*

EXTERNAL FACTORS	Weight	Rating	Score
<b>Opportunities</b>			
The relationship with politics	0,08	4	0,33
Government regulations and policies on health	0,10	4	0,39
Collaboration with governmental health insurance	0,09	5	0,46
The target market's interest in the clinic	0,08	4	0,33
Digitization in the service system	0,09	4	0,37
Media promotion via radio	0,07	4	0,29
Waste management	0,10	4	0,39
Clinical legal status	0,10	5	0,48
<b>sub total 1</b>	<b>0,71</b>		<b>3,03</b>
<b>Threats</b>			
The existence of similar health services in the Plosoklaten District	0,06	4	0,23
Digitization in promotion	0,08	2	0,16
Accreditation	0,09	3	0,26
Covid-19 pandemic	0,06	3	0,19
<b>sub total 2</b>	<b>0,29</b>		<b>0,85</b>
<b>Total</b>	<b>1,00</b>		<b>3,87</b>

From the EFAS and IFAS matrices above, 10 factors were selected consisting of a combination of internal and external factors which are then distributed into the SFAS matrix:

*Table 3 Strategic Factors Analysis Summary (SFAS)*

KEY OF STRATEGIC FACTORS	Weight	Rating	Score	Period		
				Short-term	Med-term	Long-term
1 Exploring the promotional efforts	0,10	4	0,42			
2 Optimizing the number of inpatient clinic staff	0,09	4	0,35			
3 The certainty of the legality of the inpatient clinic staff is always active	0,10	4	0,42			
4 Optimizing clinical facilities	0,09	4	0,38			

KEY OF STRATEGIC FACTORS	Weight	Rating	Score	Period		
				Short-term	Med-term	Long-term
5 Improvement of the patient care flow system	0,10	3	0,30			
6 Increasing the distribution of manpower in each work shift	0,10	3	0,30			
7 Optimizing compliance with government regulations and policies on health	0,10	4	0,42			
8 Extension of cooperation in the management of medical and non-medical waste	0,10	4	0,42			
9 The certainty of clinical legality status is always active	0,10	5	0,52			
10 Extension of cooperation with governmental health insurance	0,10	5	0,49			
<b>TOTAL</b>			<b>1,00</b>			

### **Internal Factors (Strengths and Weaknesses) of Klinik Sinar Medika**

#### ***The health services available at non-specialist inpatient clinic is quite complete***

Health services available at Klinik Sinar Medika include 24-hour Emergency Room, General Poly, MCH Poly, Dental Poly, normal delivery service, and inpatient care. so that it is categorized as a non-specialist inpatient primary clinic.

#### ***Services rates***

Service rates are cheap and affordable based on governmental health insurance prices, with cost savings in drugs and medical equipment, with maximum health services provided.

#### ***Location and access***

The location and access of the clinic is strategic, located near the center of Plosoklaten District. This clinic is close to public facilities, on the edge of the highway, it is quite spacious and good so that access is very easy with quite busy traffic.

#### ***Promotion Effort***

Promotion efforts have been carried out through cooperation and approaches to both sub-district and village apparatus through participation in community association activities in the village. During a pandemic, direct promotion in the community cannot be carried out due to restrictions, but clinics are appointed to be vaccinators who administer vaccines in villages in the Plosoklaten District so that they still get the opportunity to introduce clinics on the sidelines of these activities.

#### ***Number of inpatient clinic staff***

The number of staff in stages, from the initial opening of minimal staff but still meeting the requirements given, currently is growing and equipped with increasing services. For example, there are 4 doctors, 4 nurses, 6 midwives, 1 pharmacist, 2 dentists, 2 health analysts, 4 front office staff, 3 security guards, 2 cleaning service people. In addition, all medical personnel and other health workers are certified.

#### ***Legality of inpatient clinic personnel***

All medical personnel and other health workers at Klinik Sinar Medika are certified. The doctor's practice license has been registered at the clinic, from 2 dentists, one of which has practice lisence at Klinik Sinar Medika, one of which is still in the process.

#### ***Distribution of workforce in each work shift***

The distribution of the workforce in each work shift is for the morning and afternoon shifts with complete formation, but not for the night shift. The adequacy of human resources is sufficient, but not ideal. The morning shift consists of front office, nurse, midwife, doctor, pharmacist, health analyst, security guard. The morning-afternoon shift is still in full formation, but for the evening it is not possible because the number of human resources is not sufficient, especially for

laboratory and pharmacy staff.

#### ***Clinical infrastructure facilities***

Clinical infrastructure facilities include new and large buildings full of air conditioning, spacious parking area, adequate inpatient rooms available according to inpatient clinic standards, there is a prayer room, lactation corner, adequate waiting room, laboratory, adequate inpatient room (10 beds), room maternity care, there is a pantry, canteen, meeting room, administration room, cleanliness is maintained, 24-hour emergency room, ambulance facilities to pick up inpatients, delivery room, as well as complete non-specialist clinic.

#### ***Patient service flow system***

The patient service flow system is arranged systematically, there is no attached chart that can be accessed or viewed by patients and clinic employees. The patient service flow system is already in the Clinic brochure.

#### ***Service administration***

Service administration from registration to computerized billing with the Clinic Management Information System. In addition, manual medical records must remain for legal guarantees.

#### ***Management administration (bookkeeping, reporting, finance)***

Management administration through note-taking activities until reporting has been running because every month there is a monthly report where data is obtained from the person in charge or coordinating the reporting.

#### ***Online queuing system***

There is an online queuing system for governmental health insurance patients but it has not run optimally because there are not too many patients. For general patients there is no online queue. There is a clinic phone number that can be contacted to ask for information or register, there is a whatsapp number for the marketing department to ask for any information about the clinic. The contact number is still a private number and doesn't specifically facilitate queuing.

Based on the Regulation of the Minister of Health of Indonesia Number 9, 2014 concerning Clinics, Klinik Sinar Medika has fulfilled all the requirements that must be met by inpatient primary clinics [4].

Judging from the expansion of the marketing mix in health services according to Jerome McCathy in Fandy Tjiptono (2014: 41) which includes product (product), price (price), place/location (place), and promotion (promotion), people (people), facilities Physical evidence, and process, Klinik Sinar Medika has fulfilled most of the aspects as evidenced by its Internal Factors Analysis Summary (IFAS) score of **3.82**, which means that Klinik Sinar Medika has responded **well**, both in terms of its strengths and its strengths. overcome his weaknesses.

### **External Factors (Opportunities and Threats) of Klinik Sinar Medika**

#### ***Political relationships***

Klinik Sinar Medika synergizes with the government, both village and sub-district, helping and supporting each other.

#### ***Government regulations and policies on health***

Government regulations are important for the progress or development of the clinic. The Clinic follows government regulations without any problems with the belief that the government will make regulations to be fulfilled, measurable, and certain for the good of the clinic and the community.

#### ***The existence of similar health services in the Plosoklaten District***

Klinik Sinar Medika is the only inpatient private clinic that cooperates with governmental health insurance in Plosoklaten District. The Clinic doesn't respond to the existence of these competitors as a significant threat because this clinic is superior in several aspects, such as facilities,

collaboration with governmental health insurance, and sufficient employments. Anticipation to face competition is to always maintain quality and improve services, for example by providing a suggestion box to always improve.

#### ***Collaboration with governmental health insurance***

The collaboration with governmental health insurance has been running since the clinic started operating in 2019 until now and is still being extended, in other words, the Klinik Sinar Medika is still considered competent. The impact of BPJS on clinics is very helpful for the community to get health services without thinking about costs. The average BPJS patient at Klinik Sinar Medika per month reaches 60 or 70% of the total patient visits. The collaboration is through capitation and claims.

#### ***The target market's interest***

The public's interest in the clinic can be seen from the visits, which even though the monthly graph fluctuates, but accumulatively has met the target. Only inpatients who have not reached the target number of visits. The public's interest in this clinic can also be seen from the list of governmental health insurance participants who chose the first level of health facilities at the Klinik Sinar Medika. The addition of membership for this clinic every month is still progressing.

#### ***Digitization in the service system***

Service administration from registration to billing are computerized with the Clinic Management Information System. In addition, manual medical records must remain for legal guarantees.

#### ***Digitization in promotion***

Klinik Sinar Medika uses social media for promotions by Instagram and Facebook accounts. The social media has been inactive for some time, based on the last upload on the clinic's Instagram which was recorded more than a year ago. Previously, this section was held by a special party who was responsible for health promotion, but now the personnel for it are no longer available so that promotion through social media can be said to be temporarily suspended. In addition, there is a whatsapp number that can be contacted to ask for information about the Klinik Sinar Medika, which is the personal number belonging to the head of the marketing department. This number is always listed in the clinic brochure.

#### ***Media promotion via radio***

The clinic cooperates with radio through a health talk show program to reach a wider audience through the air. The public can communicate directly and if anyone needs an examination, they can be directed to visit the Klinik Sinar Medika.

#### ***Waste management***

For liquid medical waste, the Klinik Sinar Medika has prepared an WWTP. For solid waste, the clinic cooperates with a third party with an annual renewal of the agreement. The medical waste is temporarily stored in a place provided behind the clinic. For household waste, Klinik Sinar Medika cooperates with the Environment Agency.

#### ***Legality Status***

Klinik Sinar Medika's operational permit is still valid (active) and has been extended for the third time so that the requirements in it can be confirmed to have been met.

#### ***Accreditation***

Klinik Sinar Medika has not been accredited because of the accreditation process is still stalled due to the pandemic. The government's own policy is to delay accreditation in all health facilities. The accreditation at Klinik Sinar Medika is in the preparation stage. This clinic follows the provisions of the government with a commitment that if the pandemic status is revoked, the clinic must be accredited immediately.

#### ***Covid-19 Pandemic***

The impact of the pandemic on Klinik Sinar Medika is a decrease in the number of hospitalized patients. There are many requests from the public to be treated, but they are positive for Covid-19 that cannot be treated there because it's out of the clinic authorities. In addition, it is also due to people's fear of going to health facilities when the situation is not really urgent. The existence of a pandemic doesn't interfere with outpatient visits. The Covid-19 pandemic has also affected that promotional efforts that are usually carried out directly. But this clinic is inserted between the vaccination programs carried out in villages in the Plosoklaten sub-district.

According to Setyo Riyanto (2018: 16), PESTEL analysis (Political, Economic, Social,

Technological, Environmental, Legal) is used to identify macro forces that directly or indirectly affect an organization [14]. In terms of the external environment, Klinik Sinar Medika has fulfilled most of the aspects as evidenced by its External Factors Analysis Summary (IFAS) score of **3.87**, which means that Klinik Sinar Medika has responded **well**, both in taking advantage of existing opportunities and overcoming threats.

### **The Suitable Marketing Strategies through Strategic Factors Analysis**

#### *Exploring the promotional efforts*

Klinik Sinar Medika has made several promotional efforts such as direct approaches through sub-district and village officials, which in this pandemic can still be done through vaccination programs. It is very important to increase promotion efforts by the private health service sector and for Klinik Sinar Medikas, it can be included in the medium-term strategic plan.

#### *Optimizing the number of inpatient clinic staff*

The number of personnel in inpatient primary clinics has been explained quite clearly in the regulations on clinics, but the needs of each clinic may be different. The strategy of optimizing the number of personnel at Klinik Sinar Medika is included in the short-term strategy.

#### *The certainty of the legality of the inpatient clinic staff is always active*

Legality is a mandatory aspect for every medical and other health workers in health services. Certainty regarding the legality of the workforce is always ensured that it is always active is a medium-term strategy for Klinik Sinar Medika.

#### *Optimizing the clinical facilities*

Klinik Sinar Medika's facilities are still relatively new and functionally still excellent. This needs to be maintained and optimized so that the quality of the facilities in the clinic can be guaranteed. The strategy for optimizing infrastructure facilities at the Klinik Sinar Medika is a medium term strategy.

#### *Improvement of the patient care flow system*

The existing patient service flow system is well systemized and may be able to add a flow that can be seen by patients and workers at Klinik Sinar Medika. The clinic has placed a security guard and an information/registration section to facilitate inquiries from visitors/patients. This also needs to be supported by improving the patient care flow system, for example in the form of a flow chart and this strategy is included in the category of short-term strategy.

#### *Increasing the distribution of manpower in each work shift*

The number of personnel in inpatient primary clinics has been explained quite clearly in the regulations on clinics, but the needs of each clinic may be different. The Klinik Sinar Medika, which divides staffing shifts into 3 shifts, experienced a vacancy of several staff, such as pharmacists and health analysts on the night shift, whereas if viewed from a clinic that operates 24 hours and has an ER, these health workers can be needed regardless of time. Clinics can do a Workload Analysis and consider adding staff especially to fill the formation vacancies in the night shift. The strategy of increasing the distribution of personnel in each work shift is a short-term strategy for Klinik Sinar Medika.

#### *Optimizing compliance with government regulations and policies on health*

Klinik Sinar Medika has followed through on government regulations and policies on health without any problems. This strategy needs to be optimized and maintained continuously and becomes a medium term strategy.

#### *Extension of cooperation in the management of medical and non-medical waste*

Klinik Sinar Medika doesn't yet have its own medical waste treatment facility, but that doesn't mean that medical and non-medical waste management is not systemized. The clinic has planned and executed the waste management system very well in cooperation with third party. So that the

extension of cooperation in the management of medical and non-medical waste becomes a medium-term strategy for clinics.

***The certainty of clinical legality status is always active***

The legality at Klinik Sinar Medika has been confirmed to be legal and meets the permit requirements, both for an establishment permit and an operational permit. Certainty of clinical legality status is always actively included in the category of long-term strategy.

***The extension of cooperation with governmental health insurance***

The large number of governmental health insurance patients and the magnitude of the influence of governmental health insurance for the Klinik Sinar Medika is a consideration to always extend the collaboration and include this strategy in the long-term strategy.

The determination of short, medium, and long term strategies is only a matter of deadlines. This means that once the deadlines are set for short, medium, and long-term strategies, the strategies must be executed or implemented simultaneously [14]. This doesn't mean that the long- and medium-term strategies can only be implemented after the short-term strategies have been implemented. The timing of the start of strategy implementation is the same and it is important to evaluate the strategy. There are no special provisions in determining the standard length of time and returning to organizational decisions.

#### **IV. CONCLUSION**

***Internal Factors Analysis Summary (IFAS)***

From the results of the analysis using Internal Factors Analysis Summary (IFAS) obtained a score of 3.82, which means that Klinik Sinar Medika in the organization's internal review can properly manage its strengths and overcome its weaknesses.

***External Factors Analysis Summary (EFAS)***

From the results of the analysis using External Factors Analysis Summary (EFAS) obtained a score of 3.87, which means that Klinik Sinar Medika in the organization's external review can respond well to opportunities and overcome threats.

***Strategic Factors Analysis Summary (SFAS)***

***Short-term strategy:*** optimizing the number of inpatient clinic staff, optimizing the patient service flow system, increasing the distribution of staff in each work shift.

***Medium term strategy:*** increasing promotion efforts, ensuring the legality of inpatient clinic staff is always active, optimizing clinical infrastructure facilities, optimizing compliance with government regulations and policies on health, extending cooperation in the management of medical and non-medical waste

***Long-term strategy:*** certainty of clinical legality status is always active, extension of cooperation with governmental health insurance.

***The Suitable Marketing Strategy for Klinik Sinar Medika***

Based on the analysis carried out which is a combination of IFAS, EFAS, SFAS in terms of marketing management, Klinik Sinar Medika may be able to do the following things to increase the number of visits:

1. Always innovate with activities to increase promotional efforts
2. Optimizing the number of inpatient clinic staff both in compliance with applicable regulations and taking into account the needs in the field
3. Always ensure that the legality of the inpatient clinic staff is always active by extending it when the validity period of the certificate is almost up
4. Optimizing clinical facilities so that quality is maintained
5. Improving the patient care flow system by adding a service flow chart
6. Increasing the distribution of manpower in each work shift by conducting a Workload

- Analysis and considering adding health workers who fill the formation vacancies in the night shift
7. Optimizing and maintaining compliance with government regulations and policies on health
  8. Continue to extend cooperation in the management of medical and non-medical waste as long as the clinic is not able to manage waste independently Ensure that the legal status of the clinic is always active Extend cooperation with BPJS by continuing to meet the requirements provided.

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# Determinants of Improved Nutritional Status in Toddlers With Micronutrient Consumption Patterns in Gleno Internment Center Municipality of Ermera East Timor

Jose de Deus Alves<sup>1</sup>, Nurwijayanti<sup>1</sup>, Siti Farida Nur Layla<sup>1</sup>, Yenny Puspitasari<sup>1</sup>

<sup>1</sup>Master Degree Department, IIK Strada Indonesia, Indonesia

Corresponding author: [dedeus.jose@gmail.com](mailto:dedeus.jose@gmail.com)

## ABSTRACT

**Keywords :**  
Nutritional status,  
micronutrients,  
toddlers

**Background:** Malnutrition status and moderate in toddlers is still a public health problem in East Timor good micronutrient nutrient intake is often not fulfilled in toddlers due to SocioEconomic factors of family education level and family level of Purpose : To find out the factors that affect the improvement of nutritional status in toddlers reviewed from micronutrients in East Timor Municipality Ermera Centro Internamento Gleno

**Methods::** quantitative obeservasional crossectinal with random sampling technique research sample is 100 toddlers aged 12-60 months are in East Timor municipality Ermera wilaya centro internamento Gleno data collection in the form of questionnaires to parents in the form of recall questions 24 hours and FFQ la in the contents and direct observation of the weight of toddlers and kroscek again in the status of toddlers.

**Results :** age 12-23 months with the number of 48 and 3.6% of 100 toddlers The most predomined toddlers in this study were men 53 toddlers 40% of responde 7.5% toddlers in Centro internament gleno micronutrital intake goodnutrients in 60% in Recall 24hours mostly consume selenium sadangkan FFQ method 2-5days mostly consume iron .foster pattern 7.5% of the results analys non parameter test one sample Kolmogorov-Smirnov Z test results determine 2,905, MPasi with formula milk and water each got 3%,socioeconomic factors 92.5% low education level with 29% graduated high school and 28% illiterate, Compare means with case processing summary value 92, 9%. Of the 92.5% of infectious diseases the highest in my study was Diarea 39% Ispa 38% followed by pneumonia 30%.

## I. INTRODUCTION

The process of growth and development in humans that occurs very rapidly when the age of toddlers. At this time toddlers need a sufficient consumption of nutrients in quantity and quality more, because in general physical activity is quite high and still in the process of learning. If the nutritional intake is not met, then the physical growth and intelligence of toddlers will be impaired, which will eventually cause them to become a lost generation, and have a wide impact, the State will lose qualified human resources (HR) (Compassion, 2012 According to <sup>(1)</sup> some nutrients can be made by the body itself and most others must be obtained from food consumed daily. The nutrients the body needs consist of carbohydrates, proteins, fats, vitamins, minerals, and water.

The problem of nutrient intake and malnutrition in East Timor is very high as a public health problem from the results of demography health survey 2016 stated that 46% of toddlers hold stunting status and 24% wasted (malnutrition), while the diet for children 6-23 months at the national level only 13% who meet the minimum criteria acceptable diet. Furthermore, it is described that the intake of foods rich in vitamin A and Iron in sa'at studies respectively 69 % and 46 % . There are no studies that

describe espesifik about diet or intake of giji rich in micronutrients in East Timor. certainly bawha micronutrient deficiency can also affect the growth and development of toddlers. (DHS TL 2016).

According to the same survey at the regional level, in the city medium Ermera stunting rate 29 %, and prevalence anemia for children 6-59 months is 40 %, while the administration of vitamin A supplements only 31 %, of course this affects the nutritional status of children. From the data that has been cited both global and national or local shows that the number of malnutrition is still high, and one of the factors that affect the status of this Nutrition is diet and intake of Nutrition including micronutrients.

The purpose of the research:

General Purpose : To find out the factors that affect the improvement of nutritional status of toddlers reviewed from micronutrients in East Timor Municipality of Ermera Center Internament Gleno.

Special purpose: Identifying the intake of micronutrient nutrients in toddlers in East Timor Municipality Ermera Center Internament Gleno.Identifying parenting patterns in toddlers in East Timor Municipality of Ermera Center Internament Gleno.Identifying types of Infectious Diseases in toddlers in East Timor Municipality of Ermera Center Internament Gleno .Identifying socioeconomics in toddlers in East Timor Municipality of Ermera Centro Internament Gleno

Identifying nutritional status in infants in East Timor Municipality of Ermera Centro Internament Gleno.Analyzing nutrient intake and nutritional status in toddlers in East Timor Municipality of Ermera Center Internament Gleno. Analyzing parenting patterns and nutritional status in toddlers in East Timor Municipality of Ermera Center Internament Gleno.Analyzing infectious diseases and nutritional status in toddlers in East Timor Municipality of Ermera Center Internament Gleno

Analyzing socioeconomics in toddlers in East Timor Municipality of Ermera Center Internament Gleno.

## II. METHODS

Observational Knowing the Status of Micronutrient Nutrition In Toddlers variable dependen while Varibel Independent intake of micronutrients in toddlers , Parenting patterns in toddlers , Infectious diseases and socioeconomic sampling proportional random sampling. the study was 100 toddlers aged 12-60 months there was a collection of data in the form of questionnaires to parents in the form of recall 24-hour questions and FFQ la in the contents and direct observation of the toddler's weight and kroscek again in the status of toddlers. The research was conducted on 1-30 September in east Timor municipality of Ermera Work area center internament Gleno.

## III. RESULT AND DISCUSSION

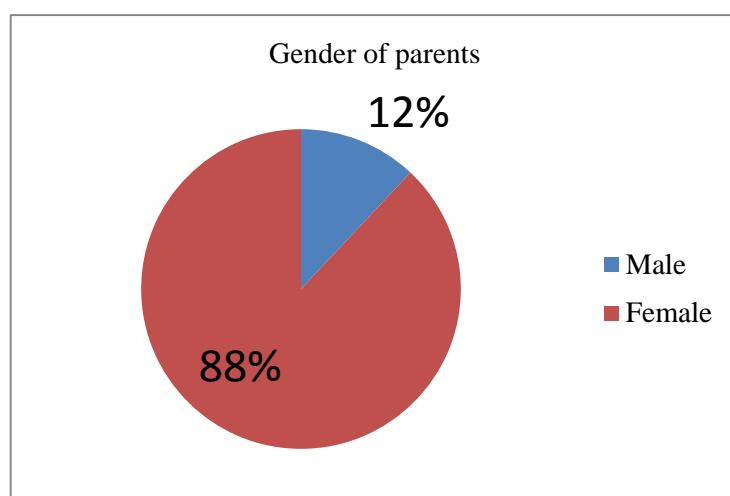


Figure 1 characteristics of respondents gender of the toddler parents

From figure 1 indicates the gender of parents who at the time of answering the predomin research question were women with a total of 88%

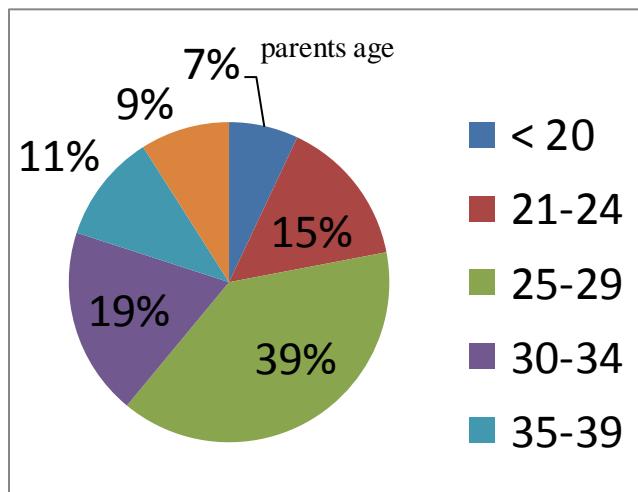


Figure 2 characteristics of respondents Parents age of the toddler parents  
From figure 2 showed the age of predominated toddler parents in the study 25-29 with 39.8%

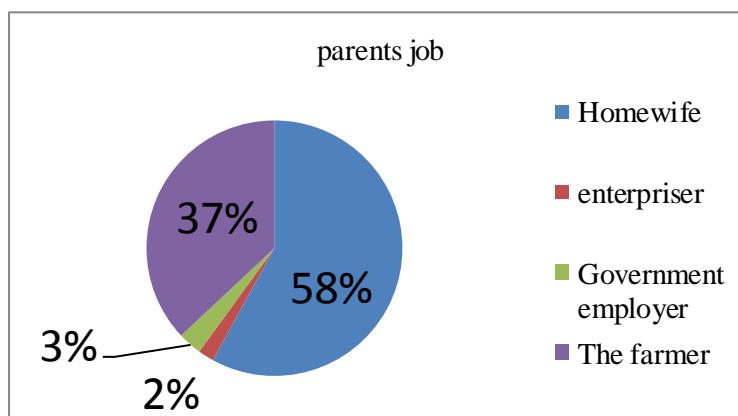


Figure 3 characteristics of respondents Parents job of the toddler parents

Based on figure 3, it is known that most of the respondents of toddler parents have a housewife job with a total of 58% of respondents

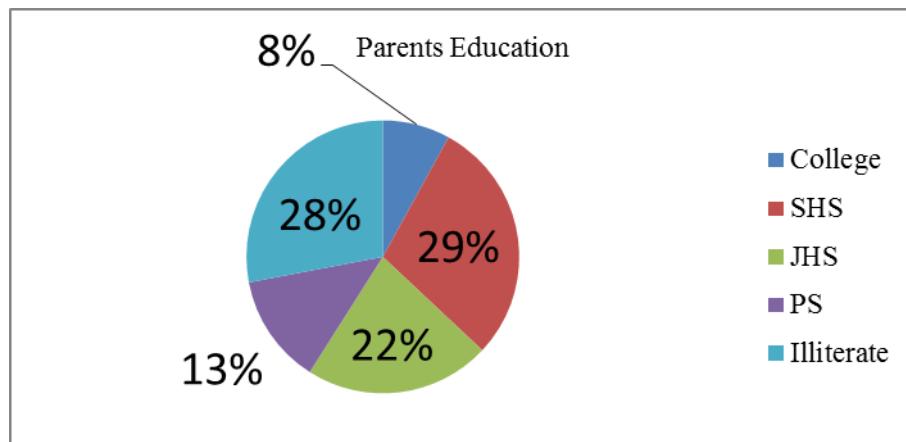


Figure 4 characteristics of respondents Parents education of the toddler parents

Based on figure 3 it is known that most of the parents of toddlers respondents have a history of senior high school graduation education with a total of 29% of respondents

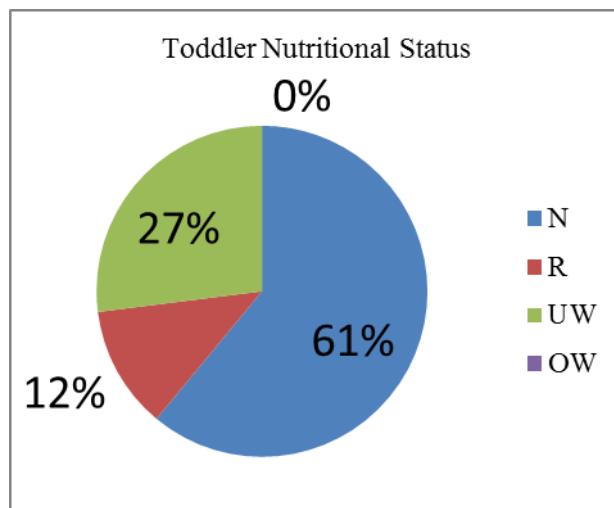


Figure 5. characteristics of the toddler Nutritional status

Figure 5 Nutritional status in toddlers in this study predomin 61% of normal nutrition

Table 1 The Characteristics age of toddlers

	Frequency	Percent %
12-23 Month	48	48
24-35 Month	26	26
36-47 Month	16	16
48-59 Month	10	10
Total	100	100

Table 1 The most age of toddlers in the study was 12-23 months with the number of 48 and 48% of 100 toddlers.

Table 2 The Characteristics Gender of toddler

	Frequency	Percent %
Laki-Laki	53	
Perempuan	47	
Total	100	

From table 2 the gender of toddlers showed that men in this study were more numerous than women with a frequency of 53 in 53%

Tabel 3 classic assumptions

Variabel	Ujinormalitas	Method VF	Hetero	Lineament
Constan				
gizi		9.511		6,484
parenting	0.07	7.733	0,08	9,322
Infectious Disease		11.663		23,699
Socio Economy		9,795		8.992

Table 3 classic assumptions The test of normality between dependent and independent data is normal because valut P= >0,005 in research data p=0,7 independet varibel correlation test with tilapia dependent variable Valout P=<10 intake of nutrients in toddlers foster patterns in toddlers , socioeconomic does not occur multicout is an infectious disease that occurs multicount due to the value of valout P=11,663 Negative receipt analise equally positive between independent and dependetnt variables valout P= >0,05 from the results of transfot comput varibaelvalout P=0,8 does not occur heterodistastitic assumptions safe

Nutrient intake in toddlers in East Timor Municipality of Ermera Center internament Gleno: From the results of this study stated that 7.5% responde toddlers in Centro internament intake of micronutrients are good in 60% in Recall 24hours mostly consume selenium sadangkan FFQ method 2-5days mostly consume iron than other nutrients in my research with research done by Fitri <sup>(2)</sup>, Differences in Feeding Practices and Household Food Security Status in Toddlers Undernourished and Normal Nutritional Status analytical observational research with cross sectional design. undernourished toddlers (60%). iron (Fe), normal nutrition (72.5%). From the other side of the study by Rachma Purwanti with the title of nutrition intake and cognitive development of toddlers in the area of puskesmas bugangan semarang 2017 The average age of toddlers is 52 months ( $\pm 4.1$ ) consisting of male toddlers as much as 48.2% and women as much as 50.8%. The intake of toddlers who mostly include less include: iodine, energy, vitamin C, and iron with the following percentages each: 100%; 77%; 57.4%; and 52.5%; there is a connection with the study I asupa eat containing micronutrients berkuran like the research in the recall 24 hours frecuent to consume vitamin C there is a minimum of 13balita in 1.5 %. Iron deficiency in a person as a child will interfere with cognitive

development during his or her life. Anemia due to iron deficiency is also associated with a decrease in children's IQ (Bourre, 2006a).

In this study could have a negativ impact on toddlers into the future due to a lack of micronutrients.Identifying parenting patterns in toddlers :from the results of my study mostly parenting patterns in toddlers using Democracy, out of 100 parents of toddlers 46 who responded gave the toddlers the freedom to choose what they wanted to eat 7.5% of the results of analys non parameter test one sample Kolmogorov-Smirnov Z test results determined 2,905 , from research before practice in normal nutrition toddlers (7.5%) ,lower compared to undernourished toddlers (25%). In the study I was able to find responde that Breast Milk Helper Food with formula milk and water each got 3% will breastfeeding, Fitri <sup>(2)</sup> and Breast Milk Helper Food is one of the indirect causes that affect nutritional status. The status of food security in infant nutrition norms (62.5%)in malnourished toddlers most households experience food insecurity without hunger (47.5%).Maternal parenting patterns are the behavior of mothers in parenting their toddlers. Self-behavior based on Notoatmodjo <sup>(3)</sup> is influenced by attitude and knowledge. Good knowledge will create a good attitude, which then if the attitude is judged appropriate, it will appear good behavior as well. Knowledge itself is obtained from information both obtained from formal education and from media (non-formal), such as radio, TV, internet, newspapers, magazines, and others. Identifying Socioeconomics: In a study I've done in East Timor, the internamneto Gleno municipality of Ermera Center ,a socioeconomic factor of 92.5% of low education levels with 29% of high school graduates and 28% illiterate, as well as research before research by Oktavia found less knowledge about infant nutrition care with a percentage of 65%.On the other hand, researcher Reza kartika Fitri1, Mother's work of toddlers is more of a Housewife (IRT) which amounts to 61.8%.in that case socioeconomic factors greatly affect the nutritional status in toddlers.Unhealthy habits can support the occurrence of disease, while healthy habits can help prevent disease (Soemirat, 2004). Maternal behaviors that include knowledge, attitudes, and decisive actions in the selection of nutritious food, as well as arranging a balanced menu according to the needs and tastes of the family. So the fulfillment of the nutritional needs of toddlers depends on the behavior of the mother (Popularita, 2010).Identifying Infectious diseases: In the results of a study I conducted in East Timor municipality of Eremera Center Internamento gleno in a statistica analyse test Compare means with a case processing summary value of 92.9%. Of the 92.5% of infectious diseases the highest in my study was Diarea 39% Ursi 38% followed by pneumonia 30%.Identifying nutritional status in toddlers: In the results of research identified nutritional status in toddlers with a total of 100 samples and 61% of toddlers who are normal weight while those who weigh less 19%.From the results of the data analys descriptive frequency shows the normal nutritional status figures from the study before conducted by Dadan Fakhrujia with the title Analysis of Factors Related to Nutritional Status in Toddlers in Posyandu Mawar RW 05 Wonodri Village 28 respondents (54.9 %), the majority of respondents born with normal weight and parents who have a higher education will be more oriented to preventive measures , know more about health problems, and have better health status (Ngaisyah, 2015)

In the results of the study analyzing the nutritional status and nutritional intake in toddlers: showing the value of hetroadstika  $P > 0.05$  value 008 data is safe there is an influence of nutritional intake on nutritional status in toddlers there is a relationship between nutritional intake to nutritional status in toddlers 92.5% we see from researchers before by Sarah with the title Density of Nutrition and Morbidity and Its Relationship to the Nutritional Status of Children Of Rural Preschool AgeThe nutritional status of children is assessed from measurements of height and weight. The lowest body height found was 97.10 cm, while the highest was 119.40 with an average of  $107.25 \pm 5.13$  cm. The lowest body weight found, which is 13.20 kg, while the highest is 30.80 kg with an average of  $17.22 \pm 3.02$  kg. Based on the BB/U index of 19.2% of underweight subjects, 78.3% had normal nutritional status and 2.5% overweight. In addition, other factors can also influence as stated by Sutayani (2012) namely breastfeeding or breast milk - breast milk can not be separated from the cultural order, in the cultural context spoken various descriptions of the behavior of nursing mothers. Analyzing parenting patterns and nutritional status in toddlers in my study in the test results spss correlation linear relationship between foster care patterns and nutritional status, value  $P = <3,484$  This is related to previous research by Fitri The results of the analysis using statistics rank spearman test shows there is a meaningful relationship between the

knowledge of the mother and the protein energy intake of toddlers tribe of children in ( $p = 0.005$ ) The growth of school-age children depends on the nutritional status of the child (Notoatmojo, 2003). With these results, the role of parents or families and caregivers is very important in the attitude of parenting patterns in toddlers. there is a relationship with (Anonim,2007) The group of school-age children in the growth and developmental cycle requires a greater amount of nutrition than other age groups

Analyzing the types of internal infectious diseases and nutritional status in toddlers in the results of analysis research found correlation test of independent variable Between relationship with dependent variable for linear regression analysis of the relationship between H0 no association tied to infectious disease factors from the results of analysis linear test konst value  $P < 10$  while the results of linear test tests in the study I nialai infectious diseases  $P > 11,63$  similar to the previous research conducted by Fakhrurijal <sup>(5)</sup> analyzed several factors related to nutritional status in toddlers in Posyandu Mawar RW 05 Wonodri Village. Wonodri Results of analysis of the relationship between diarrheal disease and nutritional status obtained that from 6 respondents (100%) diarrheal disease only 3 respondents(50%) who have abnormal nutritional status (more, less, worse) while of the 45 respondents (100%) who did not suffer from diarrhea only 8 respondents (17.8%) who have abnormal nutritional status (more, less, worse) Statistical test results obtained  $p = 0.106$  ( $p > 0.05$ ) means there is no meaningful relationship between diarrheal disease and nutritional status. The relationship between infectious diseases and nutritional status obtained insignificant results means that infectious diseases do not affect the nutritional status of toddlers. These results do not correspond to the theory that infectious diseases are a direct factor that affects the nutritional status of children, and infectious diseases that are often suffered by toddlers namely diarrhea and Upper Respiratory System Infection (URSI). Children who often have diarrhea and URSI usually experience a reduced appetite and this can lead to children lacking food and eventually the child's weight decreases and eventually the child's nutritional status becomes less and can even become bad <sup>(4)</sup> from the other side (Azwar, 2006). it is the same as .. Disease ,Upper Respiratory System Infection (URSI) and diarrhea in children is significantly associated with nutritional status. If environmental factors are unhealthy because it is contaminated with diarrhea germs and accumulates with unhealthy human behavior, namely through food and beverages, it can cause the incidence of diarrheal diseases. Factors that cause acute diarrhea in toddlers are environmental factors, maternal knowledge level, socioeconomic community, and food or drink consumed (Rusepno, 2008)

Analyzing socioeconomic and nutritional status in toddlers : analysis linearity regression of const value  $P < 10$  so in my study in the test results the value of  $P = 9,795$  the presence of linearity means there is an influence between socioeconomic factors on the nutritional status of toddlers. From previous research conducted by Widajanti found less knowledge about infant nutrition care with a percentage of 65%. On the other hand, researcher Reza kartika Fitri1, Mother's work is more of a housewife (IRT) which amounts to 61.8%. in that case socioeconomic factors greatly affect the nutritional status in toddlers Unhealthy habits can support the occurrence of disease, while healthy habits can help prevent disease (Soemirat, 2004). Maternal behaviors that include knowledge, attitudes, and decisive actions in the selection of nutritious food, as well as arranging a balanced menu according to the needs and tastes of the family. So the fulfillment of the nutritional needs of toddlers depends on the behavior of the mother (Popularita, 2010).

#### IV. CONCLUSION

Nutrient intake in toddlers in East Timor municipality Eremera Centro internament Gleno , good 7.6% nutrient intake in methodology Recall 24 good 60% In foster care almost half of respondents to give freedom to toddlers choose their own food to consume and also with respond 46% then 3% still bleum understand the function of breast milk Assistance Food they sometimes give formula milk and water. From the results of the study many toddlers who often get diarrhea from the data responde that 29% of toddlers in Centro Internamento gleno have diareia disease , Ispa 28% and 25% of those with pneumonia disease , from the results of the study of toddler families responde almost 92.5% of socioeconomic conditions are bad then the level of education of most high schools with a total of 29% and 28% of them Illiterate. From the results of the study nutritional status according to weight / age of 100 toddlers who have normal nutritional status 63% and nutrition kuran

19%. From the results of the study showed the value of hetroadstika  $P >_0.05$  value 008 data is safe there is an influence of nutritional intake on nutritional status in toddlers there is a relationship between nutritional intake to nutritional status in toddlers 92.5% of the results of the study in the test results spss linear relationship between parenting patterns and nutritional status, value  $P = <from 10$  of the research results Value  $P = <3,484$  From the results of the study In analys linearity regression of the value of const  $P <10$  sehingga in my study in the test results the value of  $P = 9,795$  the presence of linearity means there is an influence between socioeconomic factors on the nutritional status of toddlers

## V. ACKNOWLEDGMENTS

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# Progressive Relaxation to Changes in Blood Pressure and Sleep Quality in Ladies of Hypertension Patients

Soni Patriot Wira Atmanegara<sup>1</sup>, Byba Melda Suhita<sup>2</sup>, Nurdina<sup>1</sup>

<sup>1</sup> Giri Handayani Health High School

<sup>2</sup> postgraduate, health promotion, Institute of health science Strada indonesia

Corresponding Author: [wiraatmanegara15@gmail.com](mailto:wiraatmanegara15@gmail.com)

## ABSTRACT

**Keywords :**

Progressive Muscle Relaxation

Blood Pressure

Sleep Quality

**Background:** Hypertension is one of the leading causes of premature death worldwide. In 2020 about 1.56 billion adults will live with hypertension. Hypertension kills nearly 8 billion people every year in the world and nearly 1.5 million people annually in the East-South Asia region. One of the factors that affect blood pressure indirectly is poor sleep quality. One of the ways to deal with high blood pressure is progressive relaxation. The purpose of this study was to determine the effect of progressive relaxation on changes in blood pressure and sleep quality in elderly people with hypertension.

**Methods:** This study is a literature review. The literature sources are Google Scholar, Research Gate, Pubmed. Literature is obtained using keywords and Boolean operators (AND, OR NOT or AND NOT) and in accordance with the inclusion criteria so that 9 articles were obtained. The strategy used is using PICOS.

**Results:** Progressive muscle relaxation has a significant effect on reducing blood pressure in the elderly with hypertension. The implementation of progressive muscle relaxation has an effect on improving the quality of sleep in the elderly.

**Conclusion:** Progressive muscle relaxation can affect changes in blood pressure and improve sleep quality in elderly people with hypertension. It is hoped that medical personnel will also use progressive muscle relaxation techniques in addition to taking drugs.

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## I. INTRODUCTION

Hypertension is a condition in which a person's blood pressure is more than 140/90 mmHg the World Health Organization<sup>(1)</sup>. The prevalence of hypertension in developed countries is 35% and in developing countries is 40% of the adult population. Hypertension cases in 2016 in developing countries increased by 80% from 639 million cases in 2000, namely 1.15 billion cases. Nearly 1 billion people worldwide have high blood pressure. Hypertension is one of the leading causes of premature death worldwide. In 2020 about 1.56 billion adults will live with hypertension. Hypertension kills nearly 8 billion people every year in the world and nearly 1.5 million people every year in the East-South Asia region. Approximately one third of adults in East - South Asia suffer from hypertension<sup>(2)</sup>.

The older a person is, the metabolic regulation of calcium (calcium) in the body will be disturbed, so that the calcium will flow with the blood. The large amount of calcium in the blood causes the blood to become denser and thicker, so that blood flow is not smooth and causes blood pressure to rise<sup>(3)</sup>. This means that someone who is elderly has a high risk of developing high blood pressure.

The results of the Basic Health Research (Risikesdas) in 2018 showed the prevalence of hypertension in Indonesia among respondents aged 18 years and over was 34.1%. Compared with

the 2013 Riskesdas results, respondents aged 18 years and over were 25.8% or an increase of 8.3% over five years, this is a significant increase in prevalence. The results of several studies have found that adults who are aged 50 years and over have a risk of developing hypertension reaching 90% <sup>(3)</sup>.

Based on the results of measurements of population blood pressure  $\geq 18$  years according to gender, districts / cities of D.I. Yogyakarta Province in 2017 out of a total of 876,414 male and female respondents who were tested for blood pressure, it was found that 91,562 respondents had hypertension or 10.45%.

The Health Center Integrated Disease Survey (STP) report in DIY in 2016 shows that new cases of essential hypertension (29,105 cases) and diabetes mellitus (9,473 cases) are the second and fourth top 10 diseases in DIY. Then in 2017 for Hypertension there were 20,309 cases and Diabetes Mellitus there were 5,161 new cases, both of which were included in the top 10 diseases. (Provincial Health Profile in Yogyakarta, 2017).

The prevalence rate of hypertension in DIY according to Riskesdas 2018 is 33.8% or almost the same when compared to the national figure (34.1%). This prevalence places DIY in 10th place as a province with high cases of hypertension. Hypertension has always been included in the top 10 diseases as well as the top 10 causes of death in Yogyakarta during the last few years based on STP and SIRS. The 2016 STP Puskesmas report recorded 29,105 cases of hypertension while the STP outpatient hospital reports were 1,152 cases (essential hypertension). Meanwhile, based on STP Puskesmas in 2017, there were 20,309 cases of hypertension. For hospital outpatient STPs, 12,962 new cases were recorded. (Provincial Health Profile in Yogyakarta, 2017).

Hypertension can be caused by two factors, namely controllable and uncontrollable factors. Factors that can be controlled include: excessive salt consumption, lack of physical activity, stress, smoking, obesity, dyslipidemia and alcohol consumption <sup>(4)</sup>. Meanwhile, factors that cannot be controlled are family history / genetics, age and gender.

One of the factors that affect blood pressure indirectly is poor sleep quality <sup>(5)</sup>. Poor sleep quality is a collection of conditions characterized by disturbances in the amount, quality, or time of sleep in an individual <sup>(6)</sup>. Sleep quality according to the American Psychiatric Association (2000) in Ike (2016), is defined as an event that involves 2 aspects, namely quantitative sleep or the amount of sleep experienced and sleep qualitative including the feelings felt when after waking up. If not handled properly, poor sleep quality can worsen medical and psychiatric disorders such as hypertension, coronary artery disease or brain, obesity, and depression <sup>(7)</sup>. Poor sleep quality is a risk factor for physical and psychological problems. Physical problems that can be caused include increased blood glucose levels and a risk factor for cardiovascular disorders such as increased blood pressure in children, adolescents and adults <sup>(9)</sup>.

According to Nasihah <sup>(9)</sup>, there are two types of hypertension treatment, namely pharmacological and non-pharmacological treatments. Pharmacological treatment is carried out using anti-hypertensive drugs. Antihypertensive drugs include diuretics, beta-blockers, ACE inhibitors, angiotensin II receptor blockers (ARBs), calcium channel blockers (CCBs), alpha-blockers, clonidine, and vasodilators <sup>(10)</sup>. Non-pharmacological treatments that can be done include losing weight, exercising, reducing salt intake, not smoking, and avoiding stress <sup>(11)</sup>. In addition, simple breathing exercises and muscle relaxation techniques can be performed that produce therapeutic benefits such as a calm heart rate, lowering blood pressure and lowering stress hormone levels <sup>(12)</sup>.

One of the efforts to treat hypertension sufferers that can be done is by means of complementary therapy. One form of complementary therapy that uses relaxation techniques is progressive muscle relaxation therapy. Progressive muscle relaxation therapy is a therapy that focuses on a muscle activity to reduce tension in the muscles by performing relaxation techniques to relax (Purwanto, 2013). According to Maryam <sup>(13)</sup>, progressive muscle relaxation therapy is one of the cheapest methods of relaxation therapy, is easy to do, has no side effects, can make the mind feel calm and the body relaxes. Fitrianti and Putri <sup>(14)</sup> state that creating a relaxed state such as exercising progressive muscle relaxation techniques is one of the non-pharmacological ways of managing hypertension. This is because progressive muscle relaxation is a technique to reduce muscle tension with a simple and systematic process so that the muscles relax and reduce anxiety or stress so that it will lower blood pressure in people with hypertension.

## II. METHODS

This research is a literature review, which is a summary of several research studies that are determined according to a particular theme. The literature was searched in June-July 2020. The data used in this study were secondary data obtained not from direct research, but from previous research results. The secondary data source used was journal articles that had a good reputation with themes that were in line with the objectives of this study. The literature search in this literature review uses three databases, namely Google Scholar, Research Gate, Pubmed.

Article searches use keywords and Boolean operators AND, OR NOT or AND NOT) which are used to expand the search so that it can make it easier to determine which articles to use. Keywords in the literature review adjusted to the Medical Subject Heading (MeSH) consisted of:

Tabel 1 Key Words Literature Review

Progressive Relaxation	Blood pressure	Sleep quality	Hypertension
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The strategies used in searching for articles using PICOS include:

1. Population / problem, population or problem to be analyzed in accordance with a predetermined theme
2. Intervention, a management behavior of individual or community cases and the presentation of management in accordance with a predetermined theme
3. Comparation, management or other interventions that are used as a comparison
4. Outcome, the results obtained from previous studies that are in accordance with a predetermined theme
5. Study design, the research design used by the journal to be reviewed

Based on the search results of journals or articles through publications on Google Scholar, Research Gate, Pubmed using keywords that match a predetermined research theme, researchers found 19,900 journals. From these results, we then checked for duplication and found 9,210 similar journals, then the same journal was issued, leaving 10,690 journals remaining. Furthermore, researchers conducted a selection of journals published above in 2015 and obtained 8,251 journals in Indonesian and English. Then the researchers screened the titles, obtained 910 journals, screening for abstracts obtained 400 journals and full text journals as many as 40 journals. Furthermore, the researcher made an assessment based on the eligibility of the inclusion and exclusion criteria, so that 9 articles were obtained that match the theme in this study.

## III. RESULT AND DISCUSSION

### **The Effect of Progressive Relaxation on Changes in Blood Pressure in the Elderly with Hypertension**

An elderly person will experience a physiological decline in the cardiovascular system and also face many stressful situations in daily life that cause stress responses. Relaxation and mind manipulation techniques can reduce the physiological and emotional components of stress. The goals of relaxation are to provide comfort, improve physical dysfunction, change physiological responses and reduce the fear associated with the disease. Based on the results of research by Fitrianti and Miko <sup>(14)</sup>, it shows that progressive muscle relaxation has a significant effect on reducing blood pressure in elderly people with hypertension. Progressive muscle relaxation is one of the techniques used to reduce muscle tension through a simple and systematic way of tensing a group of muscles to then relax them again so that the muscles relax and anxiety / stress decreases so that blood pressure in hypertensive sufferers will also decrease

The results of this study are in accordance with the research of Ulya and Noor <sup>(15)</sup> which showed that the average blood pressure in the experimental group after being given progressive muscle relaxation therapy showed a decrease, while in the control group blood pressure increased. In the experimental group also found a significant difference between blood pressure before and after giving progressive muscle relaxation. Meanwhile, the control group showed no significant difference in blood pressure between before and after.

Progressive muscle relaxation therapy can lower blood pressure. Progressive muscle relaxation is done by focusing the mind on muscle activity during extension or relaxation in order to relax the feeling. This feeling of relaxation will affect the workings of the sympathetic nerves and sympathetic nerves. The sympathetic nerves have a duty to reduce all bodily functions whose function is increased due to the sympathetic nervous system. This condition will cause the activity of the body's systems to also begin to decline, heart rate, respiratory rate and blood pressure will also decrease due to a relaxed feeling.

Provision of correct progressive muscle relaxation therapy will affect changes in blood pressure in the elderly with hypertension. What is meant here is correct in carrying out the movements, the correct sequence of movements, the right position, and a quiet and closed place, so that the elderly really feel relaxed <sup>(14)</sup>. The implementation of progressive muscle relaxation is carried out 2 times a day with a time of between 25-30 minutes and if it is done regularly, blood pressure will stagnate decreases <sup>(15)</sup>.

### **Effect of Progressive Relation on Sleep Quality in Elderly Patients with Hypertension**

Sleep that has quality is a deep sleep condition, is not easy to wake up, experiences dreams and when you wake up the body feels refreshed and free from tension. There are many ways to get good quality sleep. One of them is through progressive muscle relaxation therapy. Based on the research results of Sulidah <sup>(16)</sup>, it is shown that the implementation of progressive muscle relaxation has an effect on improving the quality of sleep in the elderly. This is indicated by the number of respondents who experience good sleep quality has increased, while the number of respondents with poor sleep quality has a tendency to decline. Thus progressive muscle relaxation exercises are quite effective in shortening sleep latency, longer sleep duration, increased sleep efficiency, reduced sleep disturbances and reduced activity during the day so that the satisfied response to sleep quality is increased. Progressive muscle relaxation can also reduce the causes of sleep disturbances, thereby improving sleep quality. In addition, progressive muscle relaxation techniques can also control the activity of the autonomic nervous system and activation of the suprasciatic nucleus, making it easier to initiate and maintain deep sleep.

The results of this study are also in accordance with the research of Sunaringtyas, Dina and Lendra <sup>(17)</sup> which shows that there is an effect of the implementation of progressive muscle relaxation on the sleep quality of elderly hypertensive patients. The relaxation response is caused by stimulated activity of the parasympathetic autonomic nervous system nuclei rafe so that it encourages changes that can monitor the activity of the autonomic nervous system such as reduced oxygen function, breathing frequency, pulse, muscle tension, blood pressure and alpha waves in the brain making it easier to sleep.

Kasron and Susilawati's research <sup>(5)</sup> also shows that before the Progressive Muscle Relaxation (PMR) treatment 43.8% of respondents had poor sleep quality and 56.3% of respondents had very poor sleep quality. After PMR treatment, 18.8% of respondents had a rather good sleep quality and 81.3% had poor sleep quality. Statistically, this study shows that there are differences in sleep quality before and after PMR administration in hypertensive patients

Stanley and Beare in Syahrir and Rusna <sup>(18)</sup> state that progressive relaxation is an exercise that uses instructions to relax muscle groups systemically, starting with facial muscles and ending with leg muscles, so that a relaxed state can encourage a person to be more comfortable sleeping

Progressive muscle relaxation can affect sleep because when doing progressive muscle relaxation it will cause a relaxation response that stimulates all functions where it works against the sympathetic nervous system, so that a relaxed and calm state is achieved. Feeling relaxed will produce Corticotropin Releasing Factor thereby increasing the production of several hormones, such as Enkefalin and Serotonin. The relaxation response will occur due to the activity of the parasympathetic autonomic nervous system nuclei rafe. This will encourage changes that can control the activity of the autonomic nervous system in the form of reduced oxygen function, breathing frequency, pulse, muscle tension, blood pressure and alpha waves in the brain so that it is easy to sleep<sup>(5)</sup>.

Syahrir and Rusna<sup>(18)</sup> in their research stated that progressive relaxation is an instructional exercise consisting of learning to relax muscle groups systemically, starting with facial muscles and ending with leg muscles, so that a person will be comfortable sleeping and avoid insomnia. With progressive muscle relaxation exercises, the body will release a number of neurotransmitters that have a sedative function such as β-endorphins, encephalins and serotonin which reduce muscle tension and create a sense of calm and comfort so that people will find it easy to sleep.

#### IV. CONCLUSION

It is recommended that the elderly carry out progressive muscle relaxation regularly, so that blood pressure does not improve and the quality of sleep becomes better.

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# Health Education on Knowledge of The Prevention of Covid-19 Transmission in The Church Community

Aries Wahyuningsih<sup>a,1\*</sup>, Kusuma Dewi Palupi<sup>b,2</sup>

<sup>a,1\*</sup>Dosen Keperawatan Pendidikan Profesi Ners, STIKES RS Baptis Kediri

<sup>b,2</sup>Dosen Keperawatan Pendidikan Program Sarjana, STIKES RS Baptis Kediri

\*Corresponding author: [alfaomega.aries73@gmail.com](mailto:alfaomega.aries73@gmail.com)

## ABSTRACT

**Keywords:** Health Education, Knowledge, Prevention of Covid-19 transmission

**Background:** The corona virus pandemic (Covid-19) had an impact on the global health crisis, including in Indonesia. The Covid-19 virus can be transmitted directly through cough droplets and the breath of an infected person which is then inhaled by a healthy person. Prevention efforts through health education are needed to increase knowledge about preventing covid-19 through the 3M health protocol (wears masks, wash hands, keep your distance). The purpose of this study was to analyze the effect of health education on public knowledge about preventing the transmission of Covid-19.

**Methods:** The research method was pre-experimental, with one group pre-test and post-test design. The sampling technique was purposive sampling with a sample size of 30 people. The independent variable is knowledge and the dependent variable is health education.

**Results:** The results showed that the knowledge of church members before being given health education was sufficient (47%) and less (20%). Knowledge after being given health education is good (93%) and (7%) sufficient. The average value of knowledge before being given health education is 2.13 and after being given health education 2.93. There is a significant difference between knowledge before and after the Covid-19 prevention health education is carried out. with a p-value of 0.00

**Conclusion:** Health education is effective in increasing the knowledge of church members about preventing COVID 19 by implementing 3M health protocols (wearing masks, washing hands, maintaining distance) and doing it properly.

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## I. INTRODUCTION

The Covid-19 pandemic caused a global health crisis and caused problems in several aspects of life in society. COVID-19 (corona virus disease 2019) is a disease caused by a new type of coronavirus, namely Sars-CoV-2 which is contagious including in Indonesia <sup>(1)</sup>. Based on research conducted by the Chinese CDC, it is known that the most cases occurred in men (51.4%) and occurred at the age of 30-79 years and the least cases were at the age of fewer than 10 years (1%). As many as 81% are mild cases, 14% severe and 5% critical <sup>(2, 3)</sup>.

The spread of the virus can be transferred directly through coughing droplets and the breath of an infected person which is then inhaled by healthy people. Viruses can also spread indirectly through objects that are contaminated with the virus due to splashes or touching hands that are contaminated with the virus. Symptoms of COVID-19 can be felt after 5-6 days, or no later than 14 days, from exposure to the virus. The long incubation period of the virus makes early detection of COVID-19 symptoms important. <sup>(3)</sup>.

The government has made efforts to prevent a spike in the number of incidents through the implementation of the 3M prevention protocol using masks, washing hands with running water and maintaining social distance). The need for public understanding about the facts of Corona Virus 19, its transmission and prevention <sup>(4)</sup> . Through the intervention of implementing the Covid 19 3 M prevention protocol as a culture to wear masks, wash hands, maintain distance including limiting

social activities, it is replaced with online activities and prohibiting mass crowds including in places of worship (churches).

Health education is a process of change in a person associated with the achievement of individual and community health goals. Health education cannot be given to someone by another person, it is not a set of procedures that must be carried out or a product that must be achieved, but is actually a dynamically changing development process, in which a person accepts or rejects new information, attitudes, or practices, which related to the goal of healthy living (Suliha, et al., 2002).

The objectives of health education according to Effendy (2002) are as follows: 1) The achievement of behavioral changes in individuals, families and communities in fostering and maintaining healthy living behaviors and a healthy environment, as well as playing an active role in efforts to achieve optimal health degrees. 2) The formation of healthy behavior in individuals, families, groups and communities in accordance with the concept of healthy living both physically, mentally and socially to reduce morbidity and mortality. The purpose of the study was to analyze the effect of health education on knowledge of covid 19 prevention among congregation members at GBI Tri Bakti Minggiran.

## II. METHOD

Pre-experimental research method with one group pre-test and post-test design. The study did not use a control group but made measurements and observations before being given health education (pre-test) and re-measured the knowledge of respondents after being given health education, from it can be seen that there are differences in knowledge results before and after being given health education.

The population of this research is the members of the GBI Tri Bakti congregation as many as 30 people. Sampling by purposive sampling. Data collection using a questionnaire. The intervention was given using a leaflet about the 3M health protocol (washing hands, wearing masks, keeping a distance). Data were analyzed using Wilcoxon statistical test By using the significance of  $p = 0.05$ , there is an effect of providing health education on the knowledge of church members about preventing Covid-19.

## III. RESULTS AND DISCUSSION

### RESULTS

Table 1. Demographic data of respondents (N: 30)

CHARACTERISTICS	$\Sigma$	%
<b>Gender</b>		
Man	7	23
Woman	23	77
<b>Amount</b>	<b>30</b>	<b>100</b>
<b>AGE</b>		
10-20 Years	8	27
21-30 Years	1	3
31-40 Years	5	17
41-50 Years	16	53
<b>Amount</b>	<b>30</b>	<b>100</b>
<b>Education</b>		
SD	3	10
junior high school	7	23.3
senior High School	13	43.3
PT	7	23.3
<b>Amount</b>	<b>30</b>	<b>100</b>

Table 2. Frequency distribution of community knowledge (church members in ) at GBI Tri Bakti Minggiran Papar Kab. Kediri (N=30)

KNOWLEDGE	Pre test		Post test	
	$\Sigma$	%	$\Sigma$	%
Well	10	33	28	97
Enough	14	47	2	3
Not enough	6	20	0	0
<b>Amount</b>	<b>30</b>	<b>100</b>	<b>30</b>	<b>100</b>

Table 3. Results of statistical tests of public knowledge (church members in ) before and after being given health education at GBI Tri Bakti Minggiran Papar Kab. Kediri (N=30)

Variabel	Mean	SD	SE	P-value	N
<b>Knowledge</b>					
Pre test	2.13	2.00	.133		<b>30</b>
Post Test	2.93	3.00	.046	<b>0.00</b>	<b>30</b>

Based on table 1 it was found that the knowledge of the community (church members) at GBI TRI Bakti Minggiran about 3 M (wearing masks, washing hands, keeping a distance) was mostly good with 28 people (93%), enough knowledge for 2 people (7%) and there are no people who have less knowledge. This shows that there has been an increase in knowledge as evidenced by the understanding of the community (church members) to comply with the 3M protocol by wearing masks correctly, washing hands with soap and running water, using hand sanitizers after touching objects and maintaining distance by arranging places. sitting in the church at least 1 meter

The average score of Covid-19 prevention knowledge before health education (pre test) was 2.13 with a standard deviation of 2, there was a difference in the mean before and after it was 2.93 with a standard deviation of 3, the statistical test results obtained a p-value = 0.00, so it can be concluded that there is a significant difference between knowledge before and after the Covid-19 prevention health education was carried out.

## DISCUSSION

The results of bivariate analysis on the knowledge variable using the Wilcoxon test. It is known that there is a difference in Knowledge results from knowing, is an important domain in shaping one's actions (over behavior). Cognitive processes include memory, thought, perception, reasoning symbols and problem solving.<sup>(5)</sup>

At GBI Tri Bakti Minggiran there has never been direct health counseling by local health cadres, but the information is obtained from news through the media (youtube, WA, television, radio) so the solution needed is to provide KIE information directly to the church community considering the importance of implementing health protocol in accordance with the Decree of the Regent of Kediri concerning No. 443/3756/418.74/2020 concerning Control of the Spread of Corona Virus Disease<sup>(6)</sup> in Kediri Regency, so it is hoped that the health education provided can increase knowledge and increase understanding and can apply correctly, clean and healthy living behavior through the culture of preventing Covid 19 3M (wear a mask, wash hands).

According to WHO, the purpose of health education is to change the behavior of individuals and/or communities in the health sector (Effendy, 1998). Factors to Consider in Counseling. Factors that need to be considered against the target in the success of health education are 1) Education level. Education can affect a person's perspective on the new information he receives. So it can be said that the higher the level of education, the easier it is for someone to receive the information he gets. 2) Socio-Economic Level. The higher a person's socioeconomic level, the easier it is to receive new information. 3) Customs. The influence of customs in receiving new information is something that cannot be ignored, because our society still values and considers something that should not be ignored. 4) Community Trust. The community pays more attention to the information conveyed by people they already know, because public trust has arisen with the conveyer of information. 5) Availability of Time in the Community. The timing of the delivery of information must pay attention to the level of community activity to ensure the level of community attendance in counseling.

There is a significant difference in the knowledge of the members of the congregation about preventing Covid-19 before and after being given health education. Increased knowledge occurred in 19 respondents and knowledge remained in 11 respondents. Knowledge after being given health education is greater than before being given health education. Health education about the 3M health protocol has an effect on increasing the knowledge of the congregation regarding the prevention of Covid-19. Research shows that members of the congregation already have good knowledge about preventing Covid-19. Increased knowledge after being given health education is shown by the actions of church members who are able to carry out the 3M health protocol, all have worn masks correctly, washed their hands using running water and dried them, Always keep a distance of at least 1 meter. This has been done in accordance with the Covid-19 prevention health protocol.

The role or support is needed for the provision of the necessary facilities, the involvement of community leaders in the church and church congregation members to carry out continuously considering the urgency related to the policies of the Kediri district government in the context of controlling the prevention of covid 19.

#### IV. CONCLUSION

Based on the research that has been carried out, it can be concluded as follows:

- 1 Characteristics of respondents based on education, most of them are upper secondary education as much as 43.3%
- 2 The average value of knowledge before being given health education is 2.13 And after being given health education 2.93
- 3 There is a significant difference between knowledge before and after the Covid-19 prevention health education is carried out. with p-value 0.00

#### SUGGESTION

The need to carry out sustainable health education by involving community leaders (leaders in the church) for example communication and providing information through the church's online WA group media) which is effective to convey IEC health protocols to prevent Covid-19, for example the need for nutritious food, application of cough etiquette.

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# The Effect of Counseling on Prevention Covid 19 Using the Video Call Whatsapp Application on Compliance with the Use of Masks at Families in Kandangan Village

Junianto Fitriyadi<sup>a,1,\*</sup>, Arif Setyawan<sup>b,2</sup>, Silvy Eka Putri Alidya Savitri<sup>c,3</sup>

<sup>a</sup> Lecture Basic Science of Nursing Program in STIKes Bhakti Mulia Kediri

<sup>b</sup> Lecture Basic Science of Nursing Program in STIKes Bhakti Mulia Kediri

<sup>c</sup> Student Basic Science of Nursing Program in STIKes Bhakti Mulia Kediri

<sup>1</sup>junivikakhanza@gmail.com\*; <sup>2</sup>ArifSetyawan199@gmail.com; <sup>3</sup>silvyeka1998@gmil.com

\* Corresponding author

## ABSTRACT

**Keywords:**  
CounselingCovid 19  
Whatsapp  
Compliance  
Masks  
Family

**Background:** Anticipating an increase in the spread and number of infections, the public is encouraged to adopt a healthy lifestyle according to health protocols during the covid 19 pandemic. The phenomenon of knowledge about the use of masks in the community at the time of implementing Emergency PPKM level 3 in the Kediri Regency area has less knowledge and so some have more who do not wear masks. The purpose of the study was to analyze the effect of counseling on preventing the transmission of covid 19 using the video call whatsapp application on the compliance with the use of masks at families in Kandangan Village.

**Methods:** This research method is in the form of pre-experimental design with one group pretest - posttest design. The research population is all family members who live in Kandangan Hamlet with a sample of 30 respondents who have experience using the WhatsApp video call application. The sampling technique of this study used purposive sampling. The variable of this research is compliance with the use of masks with the instrument using a questionnaire. Analysis of the effect using the paired sample t test with a significance value  $\alpha$  of 0,05.

**Results:** The results showed that almost all respondents after being given counseling on preventing covid 19 using whatsapp video calls did not comply with using masks as many as 24 respondents (80%), while after being given counseling on preventing covid 19 using video calls whatsapp almost all respondents obeyed using masks as many as 28 respondents (86.7%). Analysis of the effect of counseling on prevention of covid 19 before and after using the whatsapp video call application on compliance with the use of masks in families with the results of the paired sample t test  $\rho$ -value  $0,000 < \alpha 0,05$ , meaning that there is an effect of providing counseling on prevention of covid 19 using the video call whatsapp application on compliance use masks for families in Kandangan Village.

**Conclusions:** The video call whatsapp application feature as an online learning medium is very efficient for increasing family understanding to prevent the transmission of covid 19 in the community, so that people obey to apply the use of masks in carrying out activities and interacting in their surrounding environment.

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## I. INTRODUCTION

The Covid-19 pandemic is an event that spreads the 2019 corona virus disease throughout the world and until now (1). The use of masks as one of the health protocols to prevent the spread of covid 19 is enforced in many countries, especially Asia with satisfactory results in the spread of infection. The use of masks will also reduce stigma against a person and make the use of masks a cultural phenomenon in many Southeast Asian people. The phenomenon of compliance with the use of masks in many people is disobedient compared to those who are obedient in wearing masks, this is partly

because they do it because they are hot and uncomfortable, so most do not wear masks or some carry only around their neck which makes it easier to be exposed to Covid 19. (Mushidah and Ratna, 2021).

Global prevalence Total global confirmed cases of COVID-19 as of 23 February 2021 were 111,419,939 cases with 2,470,772 deaths (CFR 2.2%) in 222 infected countries and 185 local transmission countries (1). The prevalence in East Java for the development of COVID-19 cases in March was 139,546 positive confirmed cases, 127,601 recovered cases, and 9,922 deaths (East Java Health Office, 2021). In Kediri Regency in March there were 4,359 confirmed cases of COVID-19, 3,833 recovered cases, and 412 deaths (Kediri District Health Office, 2021). Based on the results of a preliminary study on March 28-31, 2021 in Kandangan Village with data on a population of 12,106 people and 3,984 families. There are 6 hamlets namely Kandangan, Krajan, Kacangan, Kebondalem, Bioro, and Pandean hamlets. There are 12 RW and 18 RT in Kandangan Village. In Kandangan Village, there were 20 confirmed cases of COVID-19, 8 recovered cases, and 8 people died.

Covid-19 transmission can be through the respiratory tract, so the use of masks by the whole community is felt necessary during the Covid-19 pandemic. Masks can be the first barrier if there are droplets from yourself or from others. Respiratory protective equipment or masks are tools used to protect the mouth and nose with materials that can filter the entry of dust or steam (Harrianto, 2009). Face masks are very important to use because they not only serve as protection, but also prevent the spread of Corona virus infection (Shen et al., 2020). Wearing a mask requires adaptation of a person to breathe harder to meet oxygen in the body and wearing a mask does not reduce the supply of oxygen in the blood. The impact of the pandemic has made masks a rare and expensive item. Restrictions on the use of masks by infrequent use because they do not have sufficient supplies for daily use (Sri & Nurul, 2020).

One solution to provide knowledge to the wider community regarding steps to prevent the spread of COVID-19 is through online education (Fantini & Tamba, 2020). Online education can support the learning process as a formal thing by using technology (Bower, 2019). The education process using online media has become a new habit that is able to provide a summary of health about prevention via a computer or smartphone (2). An educational application that is often used to provide information about covid 19 through a whatsapp group with a discussion system using a whatsapp video call. The whatsapp application is one of the relevant applications used in learning because in the whatsapp application it has a group feature that allows people to group.

Based on the problems above, the researchers are interested in researching "The Effect of Counseling on Prevention of Covid 19 Transmission Using the Whatsapp Video Call Application on Compliance with the Use of Masks in Families in Kandangan Hamlet, Kediri Regency".

## II. METHOD

### A. Design

The design of this study used pre-experimental research. The pre-experimental design was classified as an experiment involving only one group and no comparison or control group (Rukminingsih, 2020). The pre-experimental research design used a one group pretest - posttest design approach, which was to reveal cause and effect by involving one group of subjects. This study was observed twice, namely before the experiment and after the experiment (3).

Table 1. One Group Pre-test and Post-test Design

Group	Pre-test	Treat	Post-test
Experiment	O <sub>1</sub>	X	O <sub>2</sub>

Dscription :

O<sub>1</sub> = Pretest of compliance with the use of masks in families before the implementation of education

X = Implementation of COVID-19 prevention education using WhatsApp video calls

O<sub>2</sub> = Posttest of compliance with the use of masks in families before the implementation of education

## B. Population, Sample and Data Collection Techniques

The population in this study were all families who have online media in Kandangan Village as many as 30 families from 18 RTs with a total sample of 30 respondents using total sampling technique. Respondents have research inclusion criteria in the form of; 1) Families who are natives and live in the Kandangan Village area, 2) Male or female family members aged between 20-40 years, 3) Have experience in operating whatsapp online media.

Data collection techniques in the form of determining the instrument, how to collect data and how to process data. The instrument of this research is the independent variable in the form of implementing covid prevention education with the WhatsApp video call application using standard operating procedures (SOP), while the dependent variable is compliance with the use of masks in the family using an instrument in the form of a questionnaire using a questionnaire with 3 indicators consisting of; 1) Hand hygiene, 2) Mask type and condition, 3) How to use a mask, 4) Mask replacement, and 5) Mask maintenance. The development of questions based on these indicators has 18 statement points. While the instrument used as supporting data to support specific data in the form of respondent characteristics consisting of: respondent number, age, level of education and occupation, and family income using a questionnaire instrument that is shared in the form of a google form.

The way the data was collected by the researcher consisted of the stages of preparation, implementation and evaluation. The preparation stage is in the form of research permit activities at STIKes Bhakti Mulia Kediri and to Kandangan Village, determining the criteria for respondents with a total of 30 families and conducting a survey to the research location, explanation of research problems and topics, research objectives and research samples, and are welcome to sign informed consent , then the researcher gave a mask compliance questionnaire as a pre-test assessment. The implementation stage is in the form of providing education about the prevention of covid 19. The evaluation stage is in the form of evaluating understanding about covid 19, but it is not included in the research variable and is used to support general data, as well as providing a questionnaire on compliance with the use of masks as a post-test assessment. Meanwhile, the way of data processing carried out by researchers is in the stages of editing, coding, scoring and tabulating.

## C. Data Analysis Techniques

Data analysis in this research is in the form of data analysis with descriptive, prerequisite and bivariate tests. Descriptive statistical analysis to determine the distribution of the characteristics of the research subjects or the frequency distribution of the data to determine the frequency and percentage data on general and specific data (pre and post). Descriptive analysis in the form of categorical data sample characteristics described in the parameters f (frequency) and % (percentage). Analysis of the data with the prerequisite test in the form of a normality test on the dependent variable using Shapiro Wilk, because the sample used by the researcher was <50 respondents. While the homogeneity test as a prerequisite for analysis uses Levene's test, because there are two intervention groups that are used to test the similarity of the two groups.

Bivariate analysis was used to see the influence between 2 variables, namely: independent and dependent variables, as well as differences in results from the two dependent groups (Nursalam, 2017). In this study, after the data was collected, then tabulated the data, and analyzed the data using statistical tests, namely the paired sample t test with an interval/ratio scale which had data that was normally distributed and the same (homogeneous) with a significance of 0.05. The reading of the results of the statistical test is if the analysis results get a  $\rho$  value of  $< 0.05$  then H<sub>0</sub> is rejected and H<sub>1</sub> is accepted, which means that there is an effect of counseling on preventing the transmission of covid 19 using the WhatsApp video call application on the compliance with the use of masks in families in Dusun Kandangan in 2021.

### III. RESULTS AND DISCUSSION

#### A. Result

The research results are presented in 3 parts, namely an overview of the research location, general data and special data. General data which includes: age, gender, education, occupation, and economic status. While the specific data include: compliance with the use of masks before and after the provision of online media covid 19 prevention through the WhatsApp video call application.

##### 1. Results of the Overview of Research Locations

This research was conducted in Kandangan Hamlet, Kandangan Village, Kandangan District, Kediri Regency - East Java with a postal code of 64294. Kandangan Village has an area of 41.69 km<sup>2</sup> with a population of 12,106 people and 3,984 families. The boundaries of Kandangan Village are, among others: in the east by Sukosari Village, in the south by Damarwulan Village, in the west by Kemiri Village, in the north by Pengkol Village. Kandangan Village has 12 RWs (RW) and 18 RT (Neighborhood Units). Meanwhile, Dusun Kandangan has 1 RW and 3 RT. Characteristics of house buildings in Kandangan Hamlet with the category of permanent buildings as many as 125 houses and the category of non-permanent buildings as many as 5 houses. Kandangan Village is affordable for health services provided by the Kandangan Health Center. Kandangan Village has a vision, namely "Creating a Prosperous, Just, and Prosperous Society for the Creation of a Harmonious, Safe, Peaceful, Moral and Noble Society Towards a Better Kandangan Village". And Kandangan Village has missions, including: 1) Improving Village Facilities and Infrastructure, 2) Group-based economic development, 3) Improving community services, 4) Improving health services for the community, 5) Improving the level of community education in terms of facilities and infrastructure, and Quality of Human Resources.

##### 2. Results of Frequency Distribution of Respondents Demographic Data

The results of the research on demographic data of respondents in Kandangan Hamlet, Kandangan Village, Kandangan District, Kediri Regency in 2021, namely; age, gender, education, occupation, and economic status. The following is the general data of the respondents in the table below.

Table 2. Results of Frequency Distribution of Respondents Demographic Data

No.	Category	Frequency	Percentage (%)
<b>Age</b>			
1	20 - 30 Year	9	30
2	31 - 40 Year	21	70
	Total	30	100
<b>Gender</b>			
1	Male	13	43,3
2	Female	17	56,7
	Total	30	100
<b>Education</b>			
1	Primary School	0	0
2	Junior High School	7	23,3
3	Senior High School	22	73,3
4	College	1	3,3
	Total	30	100

No.	Category	Frequency	Percentage (%)
<b>Work</b>			
1	Laborer	6	20
2	Farmer	3	10
3	Private	16	53,3
4	Entrepreneur	5	16,7
5	PNS	0	0
	<b>Total</b>	<b>30</b>	<b>0</b>
<b>Family Economic Status</b>			
1	Hight	4	13,3
2	Curently	21	70
3	Low	5	16,7
	<b>Total</b>	<b>30</b>	<b>100</b>

\*Source: Kandangan Hamlet in August 2021, n=30

Based on table 2 above, of the 30 respondents in the WhatsApp video call group, the data shows that half of the respondents have the age of 31-40 years as many as 21 respondents (70%), most of the respondents are female as many as 17 respondents (56.7%), most of the respondents have a high school education level as many as 22 respondents (73.3%), most of the respondents working as private employees as many as 16 respondents (53.3%), and most of the respondents having family economic status in the medium category as many as 21 respondents (70%).

### 3. Results of the Frequency Distribution of Compliance with the Use of Masks in Families

The results of distribution data on compliance with the use of masks in families before and after providing counseling on prevention of covid 19 using the WhatsApp video call application in Kandangan Hamlet, Kandangan Village, Kandangan District, Kediri Regency in 2021, can be seen in the table below :

Table 3. Results of Frequency Distribution of Compliance with the Use of Masks in Families

No.	Category	Frequency	Percentage (%)
<b>Before Giving Counseling on Covid 19 Prevention "Video Call Whatsapp"</b>			
1	Not obey	24	80
2	Obey	6	20
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>After Giving Counseling on Covid 19 Prevention "Video Call Whatsapp"</b>			
1	Not obey	4	13,3
2	Obey	26	86,7
	<b>Total</b>	<b>30</b>	<b>100</b>

\*Source: Kandangan Hamlet in August 2021, n=30

Based on table 3 above, it is known that from 30 whatsapp video call respondents, the results showed that most of the respondents before being given counseling on preventing covid 19 using whatsapp video calls had compliance with the use of masks in the non-compliant category as many as 19 respondents (63.3%). Meanwhile, almost all respondents after being given counseling on preventing COVID-19 using WhatsApp video calls had compliance with the use of masks in the obedient category as many as 28 respondents (93.3%).

### 4. Data Analysis Results

The results of the prerequisite test with the normality test of data on compliance with the use of masks before and after the provision of counseling on prevention of covid 19 using WhatsApp video calls in the table below.

Table 4. Normality Test Results on Compliance with the Use of Masks in Families

<b>Variable Mask Use Compliance</b>	<b>n</b>	<b>Shapiro-Wilk</b>			<b>Description</b>
		<b>Statistic</b>	<b>df</b>	<b>p value</b>	
Before Giving Counseling	30	0,810	30	0,199	Normal
After Giving Counseling	30	0,801	30	0,269	Normal

\* Shapiro-wilk test critical value with w table = 0.1870 (n=30)

Based on table 4 above, it states that the results of the analysis of the normality test of data regarding the compliance with the use of pre-intervention masks using Shapiro-Wilk with the WhatsApp video call application obtained a calculated W value of  $0.810 > W$  table (0.1870) which shows the sample is normally distributed. Meanwhile, adherence to the use of post-intervention masks using Shapiro-Wilk with the WhatsApp video call application obtained a calculated W value of  $0.801 > W$  table (0.1870) which shows the sample is normally distributed.

The results of the prerequisite test with the homogeneity test of data about compliance with the use of masks before and after the provision of counseling on prevention of covid 19 using WhatsApp video calls in the table below.

Table 5. Homogeneity Test Results on Compliance with the Use of Masks in Families

<b>Variable</b>	<b>n</b>	<b>Levene Statistic</b>	<b>F</b>	<b>p value</b>	<b>Description</b>
Compliance with the Use of Masks in Families Before and After Providing Counseling	30	1.775	3.416	.188	Homogen

\* The significance value of the levene statistic with  $p > \alpha (0,05)$  (n=30)

Based on table 5 above, the results of the Levene statistic test state that the variable of compliance with the use of pre and post masks using the WhatsApp video call application with a sign value of 2 tailed  $0.188 > 0.05$ , so that all compliance data on the use of pre-intervention masks and controls are homogeneously distributed (the same ).

Bivariate analysis in this study was used to determine the effect of counseling on preventing covid 19 online video call whatsapp media on compliance with the use of masks in families. Based on the results of the prerequisite test obtained from the compliance data on the use of masks, it shows that the sample is taken from a normal and homogeneous population, then the analysis of the effect uses the paired sample t test.

The results of the bivariate test analysis of the effect of preventing covid 19 online media through the WhatsApp video call application on compliance with the use of masks in families using the paired sample t test in the table below.

Table 6. Bivariate Test Results

<b>Variable</b>	<b>n</b>	<b>Mean</b>	<b>Standar Deviasi</b>	<b>p value</b>
Before and After Counseling on Covid 19 Prevention Using Video Call Whatsapp	30	-0,667	0,547	0,000
Confidence Interval of the Difference Menggunakan Video Call Whatsapp		= -0,871 dan Upper = -0,463 (95%)		

\* The value of the level of confidence in the paired sample t test with  $\alpha = 0,05$

The results of the paired sample t test on compliance with the use of masks before and after the provision of counseling on covid 19 using the WhatsApp video call application as an intervention group that the value is significant or value  $0.000 > (0.05)$  which means that there is an effect of providing counseling on prevention of covid 19 using the application. whatsapp video call on compliance with the use of masks in families in Kandangan Hamlet, Kandangan Village, Kandangan District, Kediri Regency in 2021. The score difference between the average compliance

of the use of masks owned by respondents before and after giving covid 19 counseling using the WhatsApp video call application was -0.667 and the difference was -0.667 differences in compliance with the use of masks in families between -0.463 to -0.871.

## B. Discussion

The results of the paired sample t test on compliance with the use of masks before and after the delivery of covid 19 counseling using the whatsapp video call application as an intervention group that the value is significant or value  $0.000 > (0.05)$  which means that there is an effect of providing counseling on prevention of covid 19 using the application whatsapp video call on compliance with the use of masks in families in Kandangan Hamlet, Kandangan Village, Kandangan District, Kediri Regency in 2021. The score difference between the average compliance of the use of masks owned by respondents before and after giving covid 19 counseling using the WhatsApp video call application was -0.667 and the difference was -0.667 the difference in adherence to the use of masks in the family is between -0.463 to -0.871.

According to Pustikayasa (2019), the use of WhatsApp applications in learning is to gain new learning opportunities, foster effective communication, enable relevant good feedback, offer formal and informal learning opportunities, and support collaborative learning. The WhatsApp video call feature is by opening a contact or opening a chat or conversation from the contact you are contacting, then clicking on the video image in the top row of the chat menu, so it will automatically make a video call. The addition after the video call feature was updated could be for four people in one call called a group video call (Sidiq, 2019).

The researcher before providing counseling through whatsapp media by creating a whatsapp group consisting of 30 respondents, then the researcher made a material about research procedures using whatsapp video calls and covid 19 prevention in the form of power points (ppt) which were shared in the whatsapp group. After explaining the research procedure, the researcher gave a direct questionnaire which was given to the respondents in the form of a mask compliance questionnaire sheet.

The results of the researcher's identification of compliance with the use of masks in the WhatsApp application group showed that almost all respondents did not comply with the use of masks, because the respondents' level of knowledge about the use of masks on average had not implemented the use of masks routinely both when interacting with the surrounding environment. There are several factors that cause respondents to not comply with the use of masks before giving masks because respondents by looking at the material in the WhatsApp group do not want to read in more detail, so that understanding of the content of the material presented is not fully understood. After the researchers identified the compliance with the use of masks before giving the most disobedient counseling, the researchers continued to provide counseling by explaining the contents of the covid 19 prevention material through WhatsApp video call media to all respondents who were divided into several small groups during video call conferences.

The results when conducting video calls in the learning process of COVID-19 prevention counseling, all respondents followed the activity and listened to the presentation of the material well. When the discussion took place after the presentation by the researcher, the respondents were less active in the discussion because the material could not appear directly during the direct presentation, so it was necessary to print out the material itself so that the presentation process was more interesting to read during the presentation of the material by the researcher. The results of the identification of compliance with the use of masks after material exposure using WhatsApp video calls showed that most of the respondents complied with the use of masks as many as 7 with 3 respondents who did not comply. This shows an increase in non-compliance which is good enough to be obedient in the use of masks in respondents.

Researchers tested the effect before and after giving counseling via whatsapp video calls showing the results of the effect of providing counseling on prevention of covid 19 using the whatsapp video call application on compliance with the use of masks in health cadres. This shows that whatsapp video calls can also be useful as online learning media, although they cannot display ppt material directly during video call presentations and need to create a whatsapp group to share the material presented.

Based on the results of the analysis of the influence above, the use of WhatsApp social media as a medium of information and learning plays a very important role in the lecture process which functions as a means of counseling, evaluation, information linking facilities, and consulting service facilities. Not only that, the use of WhatsApp is also to perfect the means of sending health information sources carried out by health workers, because from the aspect of time it is very efficient, it doesn't take too long for lecture assignments to be sent easily and immediately accepted by the family as respondents.

The whatsapp video call application needs to be applied continuously as an online media to provide health information in the community with the role of health workers to make online activities using the whatsapp video call application during the covid 19 pandemic. However, learning with online counseling will be better when combined with offline counseling or face-to-face counseling to be able to make direct observations of health counseling activities the impact of extension for improving public health status.

According to the researcher's assumptions about the benefits of online learning media using the WhatsApp video call application, it can have a positive influence on increasing respondents' compliance in the use of masks in daily activities. However, there is a need for follow-up in monitoring compliance to consistently remain obedient in the use of masks and there is a need for continuous counseling with direct monitoring and evaluation until respondents are aware of the importance of using masks to prevent the spread of covid 19.

#### IV. CONCLUSION

The conclusions in this study are:

1. Demographic data of respondents are aged 31-40 years with female gender, have a high school education level and work as private employees, and have a family economic status with a medium category.
2. Compliance with the use of masks in the family before being given counseling on preventing covid 19 using a whatsapp video call in the non-compliant category, but after being given counseling on preventing covid 19 using a whatsapp video call in the obedient category.
3. There is an effect of providing counseling on prevention of covid 19 using the WhatsApp video call application on the compliance with the use of masks in families in Kandangan Hamlet.

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# The Disruptions of Maternal Health Care Service Utilization during Covid-19 Pandemic

Susiani Endarwati<sup>1\*</sup>, Lely Khulafa'ur Rosidah<sup>1\*</sup>, Rahma Novita Asdary<sup>1</sup>

<sup>1</sup>Akademi Kebidanan Dharma Husada Kediri, Kediri, Jawa Timur

\*susianie@akbiddharmahusadakdr.ac.id

## ABSTRACT

**Keywords:**  
Covid-19,  
Covid Pandemic,  
Maternal Health Care  
Utilization, IHME

**Background:** The novel coronavirus (COVID-19), has both direct and indirect effects on key health services in multiple parts of the world, potentially leading to increased morbidity and death at various levels. Despite concerted global attempts to contain the pandemic, the virus is spreading in several countries. As a result, the extent of interruption to a variety of maternal health care services was measured in this study.

**Methods:** We used the data from the Institute for Health Metrics and Evaluation (IHME) 2020. The COVID-19 Health Services Disruption Survey 2020 was a series of surveys designed to examine the amount of disruption to a variety of health services caused by the COVID-19 worldwide pandemic. The cross-sectional individual data among 76 countries were smartphone-based Premise data-collecting technology. This study involved 667 respondents, who were pregnant or had given birth during the previous 6 months at the time of the survey (July 2020). The variables analyzed descriptively included times ANC planned and attempted, type of health facility visited during birth delivery, birth attendants, services the newborn received following the delivery.

**Results:** Of 667 respondents, 50.54% were at the age of 16-25, 45.13% graduated from college, and live in the city center or metropolitan area (39.28%). 17.54% didn't attend the ANC, thus the ANC4 coverage was 9.75%. The closure of a health facility and a lack of funds were two major reasons they did not attend ANC (65.169.68%) respectively. Hospitals were the top among facility-based delivery and 70.48% of them were attended by doctors.

**Conclusion:** ANC coverage was impacted by the Covid-19 pandemic due to the health facility closure, economic disruption, and transportation unavailability

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## I. INTRODUCTION

The novel coronavirus (COVID-19), has both direct and indirect effects on key health services in multiple parts of the world, potentially leading to increased morbidity and death at various levels. There have been concerns about potential disruptions in the delivery of key health services since the beginning of the COVID-19 outbreak. In a May–July pulse survey of health officials in 105 countries, 90% indicated some level of interruption as a result of the epidemic, with a wide range of services affected (1). There is an increase from 71% (in 2007-2013) to 83% (in 2014-2020) of births worldwide that were assisted by skilled health professionals, including doctors, nurses, and midwives. The COVID-19 pandemic may reverse gains in skilled childbirth care coverage and disrupt maternity health services. While the full extent of the pandemic's influence on child survival is unknown, considerable disruption in the provision of life-saving measures could delay or even reverse progress. The global adolescent birth rate has decreased from 56/1,000 adolescent women aged 15-19 in 2000 to 45/1,000 adolescents in 2015 and 41/1,000 in 2020. The losses varied greatly across areas, with Central and Southern Asia experiencing the greatest drop, from 70/1,000 adolescents in 2000 to 24/1,000 in 2020 (2).

Research looking at a broader range of services has yielded mixed results. A review of primary health clinics in rural South Africa found that lockdown measures had no effect on total visits but did identify decreases in pediatric healthcare visits (3). A comparative assessment of monthly service utilization data from 2019 to 2020 in Kenya indicates no substantial changes in hospital attendance for Antenatal Care (ANC), birth deliveries, family planning counseling, and other services; however, it identified increases in both adolescent pregnancy and family planning uptake among adolescents (4). During the COVID-19 epidemic in Rwanda, access to and usage of basic maternal and child health (MCH) services were dramatically impacted. Utilization of 15 MCH services in all four categories — ANC service utilization, birth deliveries, postnatal care (PNC), and immunizations — significantly decreased (5).

After correcting for the secular trend and seasonality, significant declines in health service utilization are anticipated in countries for at least one service between January 2018 and February 2020. Reduced utilization of maternal health services is less widespread, while considerable decreases in institutional deliveries, prenatal care, and postnatal care have been observed in some countries (6). During the COVID-19 pandemic, ANC disruption was widespread and associated with clinically heightened sadness, anxiety, and pregnancy-related anxiety symptoms. 89% of pregnant women reported at least one pandemic-related alteration in their ANC. The inability to have support persons attend prenatal sessions (90.6%) and cancellations of prenatal care appointments were the most prevalent of these disruptions (40%) (7).

Despite concerted global attempts to contain the pandemic, the virus is spreading in several countries. Because women and children are vulnerable groups who may be more likely to suffer negative outcomes as a result of disruptions, this study aimed to measure the extent of interruption to a variety of maternal health care services during the Covid-19 pandemic.

## II. METHOD

We used the data from the Institute for Health Metrics and Evaluation (IHME) 2020 (8). The COVID-19 Health Services Disruption Survey 2020 was a series of surveys designed to examine the amount of disruption to a variety of health services caused by the COVID-19 worldwide pandemic. The cross-sectional individual data among 76 countries were smartphone-based Premise data-collecting technology.

### Sampling

This study involved 667 respondents, who were pregnant or had given birth during the previous 6 months at the time of the survey (July 2020). Since the purpose of this survey was to assess the extent of disruption to health services experienced by pregnant women and women who have recently given birth, respondents were selected based on their country of residence and pregnancy/birth history. These inclusion criteria were implemented throughout two sampling sessions. First, the survey was restricted to Premise network users who identified as female and were affiliated with any of the 76 countries where the study was performed. Second, all users who met the above criteria were sent a short survey in which they were asked whether they were presently pregnant or had given birth within the previous 6 months. This survey's sampling approach does not produce a representative sample.

### Data

This dataset is freely available to the public which the information has been de-identified. In compliance with IHME's microdata release protocol, no personally identifying information was collected for his study; nevertheless, several variables with open-text responses were replaced with "XXXX" to remove potentially sensitive information or unrelated comments.

## Analysis

The variables analyzed descriptively included times ANC planned and attempted, type of health facility visited during birth delivery, birth attendants, services the newborn received following the delivery.

## III. RESULT

Of 667 respondents, 50.54% were at the age of 16-25, 45.13% graduated from college, and live in the city center or metropolitan area (39.28%) as explained in Table 1.

**Table 1 Demographic Characteristic**

Indicator	N	%
<b><i>Health Centre</i></b>		
Health facility	103	15.44228
Home	27	4.047976
Hospital	525	78.71064
Other	12	1.7991
<b><i>Age</i></b>		
Under 16	4	0.60%
16 to 25 years old	337	50.52%
26 to 35 years old	277	41.53%
36 to 45 years old	43	6.45%
Over 45 years old	6	0.90%
<b><i>Geography</i></b>		
City center or metropolitan area	262	39.28%
Suburban/Peri-urban	117	17.54%
Rural	228	34.18%
<b><i>Education</i></b>		
No formal education	9	1.35%
Primary school	21	3.15%
Secondary/high school	213	31.93%
Technical school	72	10.79%
College or university	301	45.13%
Post graduate	40	6.00%
NA	11	1.65%
<b><i>Employment</i></b>		
Employed full-time	150	22.49%
Employed part-time	69	10.34%
Self-employed	96	14.39%
Student and work part-time	28	4.20%
Student	76	11.39%
Retired	6	0.90%
Unemployed	242	36.28%

**Table 2 ANC Frequency Attendance**

ANC Plan	n	%	ANC Attended	n	%
0	156	23.39%	0	117	17.54%
1	79	11.84%	1	96	14.39%
2	114	17.09%	2	135	20.24%
3	133	19.94%	3	146	21.89%
4	76	11.39%	4	65	9.75%
5	36	5.40%	5	33	4.95%
6	28	4.20%	6	30	4.50%
7	6	0.90%	7	8	1.20%
8	10	1.50%	8	9	1.35%
9	11	1.65%	9	7	1.05%

10	4	0.60%	10	5	0.75%
11	2	0.30%	11	0	0.00%
12	1	0.15%	12	2	0.30%
13	0	0.00%	13	0	0.00%
14	0	0.00%	14	1	0.15%
15 or more	11	1.65%	15 or more	13	1.95%
	667	100.00%		667	100.00%

From Table 2 17.54% of the women didn't attend the ANC during their pregnancy, thus the ANC<sub>4</sub> coverage was 9.75% and ANC<sub>8</sub> was only 1.35%.

The reason behind the incompleteness of ANC among those who attended (Table 3) was the closure of a health facility (65.16%) and lack of funds (9.68%).

**Table 3 Reasons of the ANC visit incompleteness**

Reasons	N	%
Health facility closed	303	65.16%
Turned away from health facility	17	3.66%
Treatment unavailable	19	4.09%
No transportation	22	4.73%
Lack of money	45	9.68%
Partner or family does not approve	6	1.29%
I did not have a visit planned	42	9.03%
Other	11	2.37%

Table 4 shows that hospitals were the top among facility-based delivery and 70.48% of them were attended by doctors

**Table 4 Facility Based Delivery**

Birth Attendant	Hospital		Health Facility		Home		Other	
	n	%	n	%	n	%	n	%
Community health worker	0	0.00%	1	0.97%	1	3.70%	1	8.33%
Doctor	370	70.48%	34	33.01%	9	33.33%	2	16.67%
Midwife	108	20.57%	59	57.28%	11	40.74%	5	41.67%
Nurse	40	7.62%	8	7.77%	3	11.11%	1	8.33%
Other	6	1.14%	0	0.00%	2	7.41%	3	25.00%
Relative	1	0.19%	1	0.97%	0	0.00%	0	0.00%
Traditional Healer	0	0.00%	0	0.00%	1	3.70%	0	0.00%
<i>Total</i>	<i>525</i>	<i>78.71%</i>	<i>103</i>	<i>15.44%</i>	<i>27</i>	<i>4.05%</i>	<i>12</i>	<i>1.80%</i>

#### IV. DUSCUSSION

Issues related developing countries health systems capacity to provide key health services during the COVID-19 pandemic are reasonable. The most substantial and consistent disruptions were reported for the adherence of ANC visits during pandemic. According to the former World Health Organization (WHO) recommended Focused Antenatal Care (FANC) Model, a pregnant woman should receive at least four ANC visits under normal conditions. The recommendation being adopted by several countries, such as Indonesia who released Ministerial Regulation No. 97/2014, women must receive qualified and comprehensive ANC to have a healthy and safe birth. During pregnancy, the government advises at least four ANC visits (ANC<sub>4</sub>): one during the first trimester, one during the second trimester, and two during the third trimester (9,10). Recently, WHO released "the 2016 WHO ANC model" (ANC<sub>8</sub>) which includes a new set of guidelines to improve the quality of ANC, hence lowering the risk of stillbirths and problems and ensuring a good pregnant experience. The new WHO model suggests at least eight encounters. The 2016 WHO ANC Model includes 4+ ANC encounters that contribute to the achievement of the SDGs, which seek to reduce maternal and child mortality, ANC at

health facility, and delivery by a qualified birth attendant are key measures of maternal health care in efforts to prevent maternal and newborn mortality (11).

Almost eighteen percent of the women didn't attend the ANC during their pregnancy even though 12.82% of them initially planned for ANC visit, and the rest did not plan to have any ANC visit. Given the change in WHO guidelines from ANC<sub>4</sub> to ANC<sub>8</sub> in 2016, we provide both data. There was only 9.75% ANC<sub>4</sub> coverage and ANC<sub>8</sub> was only 1.35% of the total sample.

Many women were left without access to moment maternal and reproductive health care, including basic gynecological examinations, prenatal care, and abortion, due to the temporary closure of outpatient clinics under shelter at home orders. According to previous researches, many maternal and newborn healthcare providers worldwide did not receive Covid-19 training from their health facility, and 53% of participants in LMICS and 31% in HICs did not feel knowledgeable in how to care for a Covid-19 maternity patient; 90% of participants reported higher stress levels. This lack of training and confidence hampered care quality, which was exacerbated by staff and supply constraints. Many facilities have been left without access to drugs or blood products, which are crucial for managing postpartum hemorrhage (12–14).

One of the reasons behind the incompleteness of the ANC visit was the lack of funds. Women faced economic distress as a result of lost jobs, limited care, and health services, overwhelmed health systems, restricted travel, and shifting priorities at the primary care level during the pandemic. During the current epidemic, the economic crisis has had a significant impact on persons from lower socioeconomic strata. Many of the social and economic effects of the COVID-19 situation are projected to disproportionately affect women (12).

The government's implementation of a lockdown and commute restriction slowed the community spread of Covid-19, but it may have unintentionally affected emergency obstetric care for referred women by restricting public transportation because most pregnant women in some LMICS still use public transportation for emergency visits. This is in accordance with the findings of the ANC absence due to transportation unavailability.

This study has some potential limitations that should be considered when interpreting the results. Further research should be conducted to obtain more detailed information for future recommendations.

## V. CONCLUSION

ANC coverage was impacted by the Covid-19 pandemic due to the health facility closure, economic disruption, and transportation unavailability

## VI. ACKNOWLEDGMENT

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# Relationship of Nurse Motivation Factors With Discharge Planning Implementation During COVID-19 In the Inpatient Unit of RSKM

Sih Mirah<sup>\*1</sup>, Zulfa Khusniyah<sup>2</sup>, Indah Mukarromah<sup>3</sup>

Faculty Of Health Sciences, Universitas Pesantren Tinggi Darul Ulum University, Jombang, Indonesia

<sup>1</sup> sihmirah66@gmail.com\*; <sup>2</sup> zulfakhusniyah@fik.unipdu.ac.id; <sup>3</sup> indahmukarromah@fik.unipdu.ac.id

\* Corresponding author

## ABSTRACT

*Keywords:*  
Nurse,  
Motivation,  
Discharge Planning

Discharge planning (DP) is part of the nurse's duty to make patients independent when they return home in taking care of themselves after treatment and improving the quality of patient health. That's implementation has not been optimal, resulting in patients will experience medication errors and are likely to be re-treated within 30 days after leaving the hospital (Family Care Giver Alliance, 2010). During the Covid-19 pandemic, 8 out of 10 inpatient unit nurses at the RSKM have not done DP and 2 other nurses have not filled in according to standard operating procedures due to lack of willingness and focus on handling complaints cases and also length of treatment. The aim was to analyze the relationship between nurses' motivation and the implementation of DP in RSKM. The research design is cross sectional in the inpatient unit of RSKM used a total sampling technique of 43 respondents. The instruments are a nurse motivation questionnaire and a check list the implementation of DP in the medical record document of patients who will go home (RSKM Medical Record Document, 2021) and it used Spearman Rank ( $\alpha \leq 0.05$ ). Most of the nurses (46.5%) have good motivation due to more than ten years of service, but the implementation of DP is less (53.5%). The P-value is 0.005 with a correlation coefficient -.425, means that there is a significant relationship between the motivation of nurses and the implementation of DP with a moderate degree of relationship and a negative relationship direction. During the COVID-19 pandemic, several nurses were confirmed positive and some nurses were reassigned to the Covid-19 isolation unit, so the nurse ratio was reduced impact on fatigue and decrease performance related to deficient DP implementation.

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## I. INTRODUCTION

Discharge Planning (DP) is one of the important elements in nursing services. DP is a coordinated interprofessional process to develop a treatment plan or program for providing continuing health education in preparing patients who are treated to be able to independently care for themselves after the patient leaves treatment in health services, which includes meeting nutritional needs, activities/exercise, medicines, and instructions specifically, namely the signs and symptoms of the patient's illness in order to maintain or achieve maximum function after returning from hospital treatment (1-2). However, currently there are still various problems related to the implementation of DP where the implementation is part of the nurse's duties.

Studied at Bandung and Yogyakarta as many as 54 and 61% of nurses did not implement DP, and RSAM Bukittinggi showed as many as (38%) nurses said the implementation of DP was not good (3-5). The results of this study prove that the implementation of DP has not run optimally, it can result in losses for patients. Failure in the patient care planning program at home and will affect the level of dependence of the patient, and the severity of the patient at

home (2). In line with data from the Family Caregiver Alliance (6), that as a result of improper discharge planning, as many as (40%) patients experienced more than 65 medication errors after leaving the hospital, and 18% of patients who were discharged from the hospital were hospitalized again. sick within 30 days. This shows the big impact of the implementation of discharge planning that is not good.

Nurses have an important role in discharge planning because nurses interact the most with patients (7). Its role is to identify specific patient needs, as well as maintain or restore optimal patient conditions and evaluate the continuity of nursing care in order to improve the quality of patient health. Nurses need to prepare what will be delivered in a good way, as well as approach techniques that focus on important areas known as METHOD (Medications, Environment, Treatment, Health Teaching, Outpatient Referrals, Diet). This component is important to convey to patients and families in order to know about the drugs given, a good environment for patients, therapy and exercise necessary for the patient's health, information on re-control time and services in the community and diet (8).

The results of the initial interview on March 5, 2020 to nurses in the inpatient unit of the RSKM as many as 8 out of 10 nurses had not carried out the DP and 2 other nurses did not fill in according to standard operating procedures due to lack of willingness and focus on handling complaints cases and length of treatment. Not all discharge planning submissions are given completely due to the large number of patients with various diagnoses, the lack of personnel, and the high routine of officers, so that most patients receive incomplete DP. These problems are related to the shortage of nurses, nurses' job dissatisfaction and the poor working environment of nurses. The influencing factors are ability and expertise, knowledge, work design, personality, leadership, leadership style, organizational culture, job satisfaction, work environment, loyalty, and work motivation (9).

Motivation is one of that encourages someone to behave in achieving a goal. The size of the motivation depends on each person (10). The motivational factor has a strong relationship, if motivation increases, the nurse's performance will increase, where motivation in a person's personality encourages the individual's desire to carry out certain activities in order to achieve a goal. (11-12). The impact if motivation is lost in nurses is that the operational system will not run well and smoothly.

RSKM is a type C Private Hospital with Five Star Plenary Accreditation status which is obliged to provide quality and quality health services according to community needs, including promotive, preventive, curative and rehabilitative services to provide safe, effective and quality health services by prioritizing the interests of patients (UU No. 44 of 2009). DP is carried out since the patient is received in a health service unit, especially a hospital, where the patient's time span is to shorten the length of hospitalization. So far, discharge planning has not been carried out optimally due to time constraints and the process of implementing discharge planning at the Inpatient Unit RSKM has never been evaluated. The purpose of the study was to identify the relationship between the motivational factors of nurses and the implementation of discharge planning in the inpatient unit of RSKM

## II. METHOD

The research design used cross sectional. The place of research was carried out in the inpatient unit of RSKM. The population of all nurses in the inpatient unit is 43 people, with a total sampling technique. The independent variable is the motivation of nurses and the dependent variable is the implementation of discharge planning. Collecting data by using a questionnaire. Data analysis used Spearman statistical test ( $\alpha \leq 0.05$ ).

### III. RESULTS AND DISCUSSION

#### 1. Results

**Table 1.** Characteristics of Respondents

	Characteristics	F	%
<b>A. Gender</b>			
1. Male		18	41,8
2. Female		25	58,1
<b>B. Marital Status</b>			
1. Married		28	65,1
2. Unmarried		15	34,8
<b>C. Education</b>			
1. Bachelor		21	48,8
2. Diploma		22	51,1
<b>D. Work Experience</b>			
1. < 2 years		5	11,6
2. < 5 years		8	18,6
3. ≥ 5 years		10	23,2
4. ≥ 10 years		20	46,5

*Source: Primary Data, 2021*

Based on the table 1, it is known that the number of female respondents is more than male, most of the respondents are married, and the level of education is more than half of diploma nursing graduates and work experience of more than 10 years.

**Table 2** Motivation of Nurses in the Inpatient Unit Kristen Mojowarno Hospital, Jombang.

No	Motivation Category	F	%
1.	Less	8	18,6
2.	Pretty Good	15	34,9
3.	Good	20	46,5
<b>Total</b>		43	100

*Source: Primary Data, 2021*

Based on table 2, it is known that the motivation of nurses in implementing discharge planning at Mojowarno Hospital is mostly good (46.5%).

**Table 3** Implementation of Discharge Planning in the Inpatient Unit in Kristen Mojowarno Hospital, Jombang.

No	Implementation of Discharge Planning	F	%
1.	Less	23	53,5
2.	Pretty Good	10	23,3
3.	Good	10	23,3
<b>Total</b>		43	100

*Source: Primary Data, 2021*

Table 3 shows that the implementation of discharge planning in the inpatient unit of RSKM Mojowarno is mostly lacking.

**Table 4** The Relationship Between Nurses' Motivation and the Implementation of Discharge Planning in the Inpatient Unit Kristen Mojowarno Hospital, Jombang

Motivation	Implementation of Discharge Planning						Total	
	Less		Pretty Good		Good			
	F	%	F	%	F	%	F	%
Less	1	12,5	2	25	5	62,5	8	100
Pretty Good	9	60	3	20	3	20	15	100
Good	13	65	5	25	2	10	20	100

*Uji Spearman's Rank*      P = 0,005; r = - 0.425

The results of the study on the motivation of nurses with the implementation of discharge planning obtained 13 nurses who had good motivation, but the implementation of discharge planning was lacking. And there are 5 nurses who have less motivation, but the discharge planning implementation is good. Based on the results of statistical tests obtained p = 0.005 and r = -0.425. P is smaller than the value of (0.05), which means that there is a significant relationship between the motivation of nurses and the implementation of discharge planning with a moderate relationship strength, but the direction is negative or not in the same direction. The results of these statistical tests indicate that the high motivation of nurses is not followed by the implementation of good discharge planning.

## 2. Discussion

Motivation according to Nursalam (13) is a human psychological characteristic that contributes to a person's level of commitment. It includes the factors that cause, channel, and sustain human behavior in certain determined directions. Motivation is a mental drive that moves and directs human behavior (14). If a person's motivation is good, then that person will have the determination to complete his work tasks and responsibilities. Good work motivation will encourage the achievement of good work performance as well, thus will have a positive impact on hospital performance. Good nurse performance plays an important role in supporting the achievement of organizational or hospital goals (15).

Discharge planning is the process of preparing patients who are hospitalized to be able to independently take care of themselves after treatment (1-2). Meanwhile, according to Nursalam (16) discharge planning is the process of starting patients getting health services until the patient feels ready to return to his environment. Means discharge planning is an action that aims to be able to make the patient independent after discharge. Implementation of the ideal discharge planning, starting from the patient's first admission to the hospital until the day of discharge. Discharge planning that has been successfully implemented will lead to the patient's return from the hospital there will be no obstacles and can reduce the days or length of treatment and prevent recurrence, but on the contrary if discharge planning is not carried out properly it can be one of the factors that prolong the healing process which will relapse and be re-treated (17).

Discharge Planning is part of the nurse's performance in providing nursing care to patients and is an important element in nursing services. Nurse performance is influenced by several factors, one of which is motivation. This is in line with research conducted by (Irena, 2017) that there is a significant relationship between motivation and the performance of nurses in the inpatient room of RSUD Dr. R.M. Pratomo Baganapapi with a p value of 0.003 (<0.05) and a POR value = 6.3, which means that nurses who have low motivation have 6.3 times the chance to have low performance compared to those who have high motivation, on the other hand nurses who have high motivation have the opportunity to have high performance. too high.

The results of this study found that almost half of the nurses at Mojowarno Hospital had high motivation, but the implementation of discharge planning was more than half the result was less. Although the results of statistical analysis spearmen state that there is a significant relationship between the motivation of nurses and the implementation of discharge planning, the direction of the relationship is negative, which means that high motivation of

nurses is not followed by good discharge planning. Based on an interview with the head of the room at Mojowarno Hospital, this is probably due to the increasing workload of nurses in the room during the COVID-19 pandemic. The number of nurses who were confirmed to be COVID-19 caused the number of nurses to work in the room to decrease and the number of nurses who were temporarily transferred to the Covid isolation room further reduced the number of nurses in the inpatient room. This increases the workload of nurses and causes physical fatigue which affects the performance of nurses, including in the implementation of discharge planning.

Nurses are the most common health workers in health services and have longer contact with patients than other health workers. Nurses are at the forefront of handling Covid-19 patients and have a high risk of contracting COVID-19. The risk of being exposed to COVID-19 either from co-workers, patients or from people who appear healthy but actually carry the virus that causes Covid-19, poses a psychological burden for nurses. Changes in work patterns in hospitals due to the COVID-19 pandemic, the use of personal protective equipment in the long term also adds to the psychological burden of nurses in the COVID-19 pandemic era (18). In short, it can be concluded that in the era of the COVID-19 pandemic, nurses experienced an increase in their workload both physically and psychologically, which then affected their performance in providing nursing services to patients, including the implementation of discharge planning, even though nurses still had high work motivation.

#### IV. CONCLUSION

There is a significant relationship between the motivation of nurses and the implementation of discharge planning in the inpatient unit at Mojowarno Jombang Christian Hospital with a moderate correlation coefficient and a negative relationship direction

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# The Difference Between Giving Breast Milk and Complementary Foods to Breast Milk with Nutritional Status in Infants Aged 6-24 Months in The Puskesmas Pare Working Area

Silfia Sekar Arum M<sup>1</sup>, Astri Yunita<sup>2</sup>, Alfonsa Malayat<sup>3</sup>

<sup>a</sup> Maternity, Midwifery, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>b</sup> Maternity, Midwifery, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>c</sup> Maternity, Nursing Student, STIKes Bhakti Mulia, Kediri, Indonesia

<sup>1</sup> silfiaelly77@gmail.com \*; <sup>2</sup> astrinipongyunita@gmail.com; <sup>3</sup> malayat@gmail.com  
\* silfiaelly77@gmail.com

## ABSTRACT

**Keywords:**

Breast Milk  
(ASI), Complementary  
Foods Breast Milk (MP-  
ASI), Nutritional Status

**Background:** Breast milk guarantees the baby's nutritional status to be good, because it contains immunity and complete nutrition for babies according to their needs. After the baby is more than 6 months old, the baby needs additional food intake that can be obtained in breast milk companion food while still giving breast milk until the age of 24 months. The purpose of the difference between giving breast milk and complementary foods to breast milk with nutritional status in infants aged 6-24 months in the puskesmas pare working area.

**Methods:** This study uses a correlational analytical method (cross sectional). The population of this study were all mothers who had babies aged 6-24 months in the Puskesmas Pare working area. With a total sample of 30 respondents, divided into 15 respondents to group giving complementary foods to breast milk (MP-ASI). The sampling technique uses quota sampling with analysis test is spearman rho and paired sample t-test with a significant level of 0,05.

**Results:** The results of this study that of the 15 respondents to breast feeding mostly had nutritional status in infants with the criteria of malnutrition as many as 9 respondents (60%), while from 15 respondents the provision of MP-ASI mostly had nutritional as many as 10 respondents (66,7%). Analysis : The analysis of this study has a sig (2-tailed) value of 0,089, so p > a, so analysis results there is no difference between the provision of breast milk and complementary food of breast milk with nutritional status in infants aged 6-24 months in Puskesmas Pare.

**Conclusions:** The family must be more careful in understanding the nutritional needs of infants with a combination of nutrients that the body needs that are in accordance with the stages of development and nutritional needs of infants aged 6-24 months.

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## I. INTRODUCTION

Children are the dream of every family who can also expect their children to grow and develop optimally, physically, mentally, and socially (1). Breast Milk (ASI) guarantees the baby's nutritional status to be good, because it contains complete immunity and nutrients for babies according to their needs. However, after the baby is more than 6 months old, the baby needs additional food intake that can be obtained in Complementary Foods for Breast Milk (MP-ASI) while continuing to provide breast milk until the age of 24 months (2).

According to the prevalence of short toddlers becomes a public health problem if the prevalence is 20% or more. Therefore, the percentage of stunted children in Indonesia is still high and is a health

problem that must be addressed. Compared to several neighboring countries, the prevalence of stunting in Indonesia is also the highest (3).

According to the Ministry of Health of the Republic of Indonesia (Kemenkes RI) in 2016, the percentage of short toddlers (short and very short) nutritional status in Indonesia in 2015 was 37.2%, compared to 2015 (35.6%) and 2013 (36.8%). ) did not show a significant decrease/improvement. The highest percentage in 2013 was in East Nusa Tenggara (51.7%), West Sulawesi (48.0%) and West Nusa Tenggara (45.3%) while the lowest percentage was Riau Islands Province (26.3%). DI Yogyakarta (27.2%) and DKI Jakarta (27.5%) (4).

The rate of malnutrition and malnutrition in Indonesia is still far above the 2014 RPJMN target of 15%, the malnutrition rate was 18.4% in 2005 and 17.9% in 2010 but increased in 2013 to 19.6%. East Java province in 2005 was in the top 10 with the highest cases of malnutrition. In 2009 there were 527,000 malnutrition or 17% (5).

Based on the results of a preliminary study conducted on April 28, 2020 at the Pere Health Center, there were 112 mothers with toddlers aged 6-24 months who visited in April 2020. The results of interviews with 10 mothers at the posyandu in the working area of the Pare Health Center stated that the cause of giving MP-ASI too early was due to the mother's habit of giving MP-AS I after the baby's three-month ceremony and the types that were usually given were bananas and porridge. The breastfeeding pattern of the 10 mothers who were interviewed turned out that all mothers did not do early initiation, mothers gave exclusive breastfeeding until the age of 3 months and then some were given bottle-feeding or continued with MP-ASL. experienced diarrhea and from direct observation there were no infants who were malnourished. Complementary feeding givers a risk of disturbing the quality and quantity as well as the safety of baby food. Besides that, it can open the gate for the entry of various types of diseases, especially if they are not served hygienically so that it can increase the occurrence of infections in babies. Infections that often occur in infants are diarrhea, cough, runny nose, fever, intestinal adhesions and intestinal obstruction (6).

The problem of malnutrition in toddlers is the impact of low exclusive breastfeeding for up to 6 months and inappropriate complementary feeding, because it is given too early or too late, the amount is not sufficient to meet the growth and development needs of infants at every stage of age and is not nutritionally balanced for children. meet the intake of energy, protein and micronutrients (vitamins and minerals) (7). The provision of complementary foods to infants is largely determined by the mother's actions which are shaped by the mother's knowledge and attitudes, this action can be influenced by the mother's characteristics. In general, mothers or caregivers of toddlers will determine food choices (8).

The mother's role is very large in formulating the pattern of feeding her baby, starting from determining, selecting, processing, serving up to providing the baby's daily nutritional menu. Mother's behavior in giving MP-ASI, in terms of timeliness, type of food, food consistency, and amount of food is determined by mother's knowledge of MP-ASL. Mother's level of knowledge about nutrition is very important in improving the nutritional status of the family, especially the nutritional status of their children (9).

According to many families do not know when to give complementary feeding to infants, the type of food eaten, its composition and consistency, especially for young mothers who are too early to introduce solid foods to their babies. This is influenced by the lack of information factory(10). According to revealed that the media is the most important part as a tool in the delivery of information, using the media can increase public knowledge, the media can also be used for health

promotion so that it can hit the expected target (11).

Based on the explanation above, the researchers are interested in researching "The difference between the provision of breast milk and complementary foods for breast milk and the nutritional status of infants aged 6-24 months in the Pare Health Center Work Area in 2020".

## II. METHOD

Design is all the processes needed in planning and implementing research (12). This research design is a correlational (cross sectional) analytical research design. In this study, the population was all mothers who had babies aged 6-24 months in the working area of the Pare Health Center as many as 112 respondents. The law study that became the sample was some mothers who had babies aged 6-24 months in the work area of the Pare Health Center as many as 30 respondents with a sample of 15 respondents in the breastfeeding group and 15 respondents in the complementary feeding group as a sample.

This study uses a quota sampling technique, namely; sampling technique by setting a certain amount as a target that must be met in the sample advertiser. The instrument used in this study was breastfeeding using a checklist sheet consisting of 8 questions, complementary feeding instruments used a checklist consisting of 8 questions, and the last is the nutritional status of infants aged 6-24 months, the instrument used is the Z-Score table based on body weight/age (W/U).

Researchers to find out the relationship between variables, Spearman Rho statistical test was carried out with a significant level of 0.05 using SPSS to determine whether there was a relationship between two variables, namely the independent variable and the dependent variable with ordinal and nominal scales.

## III. RESULTS AND DISCUSSION

### General Data

**Characteristics of respondents in this study in the form of general data in the table below.**

**Table 1 Characteristics of Respondents in the Pare Health Center Work Area in 2020**

Characteristics of respondents in this study in the form of general data in the table below.

The results of the description of table 1 show that of the 30 respondents, namely; most of the respondents aged 12 - 24 months were 16 respondents (53.3%), most of the respondents were female as many as 17 respondents (56.7%), almost all respondents had child status in the family in the form of cage children as many as 27 respondents (90%), almost half of the respondents work as a family head as a farmer and a private employee in each respondent as many as 8 respondents (26.7%), most of the respondent's families have a medium economic status category with an income of Rp. 1,000,000 - Rp. 3,000,000 as many as 20 respondents (66.7%), and almost half of the respondents' families have a source of health information obtained from watching television as many as 14 respondents (46.7%).

Table 1 Characteristics of Respondents in the Pare Health Center Work Area in 2020

No.	Category	Group		Total	
		ASI n=15	MP-ASI n=15	f	O/o
1	b. >6 - 9 month	3	10	4	13,3
	c. >9 - 11 month	2	6,7	2	6,7
	d. 12 - 24 month	9	30	7	23,3
				16	53,3

	Total	15	50	15	50	30	100
2	Baby's age						
	a. Male	6	20	7	23,3	13	43,3
	b. Female	9	30	8	26,7	17	56,7
	Total	15	50	15	50	30	100
3	Baby status						
	a. Biological child	13	43,3	14	46,7	27	90
	b. Step child	2	6,7	0	0	2	6,7
	c. Foster child	0	0	1	3,3	1	3,3
	Total	15	50	15	50	30	100
4	Pekerjaan Kepala Keluarga						
	a. Laborer	3	10	2	6,7	5	16,7
	b. Farmer	4	13,3	4	13,3	8	26,7
	c. Trader	3	10	2	6,7	5	16,7
	d. Private	3	10	5	16,7	8	26,7
	e. PNS	2	6,7	2	6,7	4	13,3
	Total	15	50	15	50	30	100
5	Family Economic Status						
	a. Higher	3	10	2	6,7	5	16,7
	b. Currently	9	30	11	36,7	20	66,7
	c. Low	3	10	2	6,7	5	16,7
	Total	15	50	15	50	30	100
6	Family Information Resources						
	a. Televesi	5	16,7	9	30	14	46,7
	b. Handphone	5	16,7	2	6,7	7	23,3
	c. Radio	2	6,7	1	3,3	3	10
	d. Koran/ majalah	0	0	1	3,3	1	3,3
	e. Health workers	3	10	2	6,7	5	16,7
	Total	15	50	15	50	30	100

## Special Data

Distribution data about criteria

The implementation of breastfeeding for infants in the work area of the Pare Health Center in 2021 is shown in the table below.

Category	N	Percentage (%)
Not as recommended	0	0
Less in line with the recommendations	5	33,3
As recommended	10	66,7
Total	15	100

Based on table 2, it is known that from 15 respondents, most of them have the implementation of breastfeeding with criteria in accordance with the recommendations of 10 respondents (66.7%).

Distribution data on the criteria for the implementation of complementary feeding to infants in the Pare Health Center work area in 2020 are shown in the table below.

Table 3 Provision of MP-ASI to Babies in the Pare Health Center Work Area in 2021

Category	N	Percentage (%)
Not as recommended	0	0
Less in line with the recommendations	5	33,3
As recommended	10	66,7
Total	15	100

Based on table 3, it is known that of the 15 respondents, most of the respondents had the implementation of providing complementary feeding with the criteria as recommended as many as 10 respondents (66.7%).

Distribution data on nutritional status in the breastfeeding and complementary feeding group for infants in the Pare Health Center work area in 2021 can be seen in the table below.

Nutritional Status In Babies	Group			
	ASI		MP-ASI	
	f	%	f	%
Gizi Buruk	1	6.7	0	0
Gizi Kurang	9	60	4	26,7
Gizi Baik	4	26,7	10	66,7
Gizi Lebih	1	6,7	1	6,7
Total	15	100	15	100

Based on table 4.4, it is known that of the 15 respondents who gave breast milk, most of them had nutritional status in infants with criteria for malnutrition as many as 9 respondents (60%), while of the 15 respondents giving complementary feeding, most of them had nutritional status in infants with criteria for good nutrition as many as 10. respondents (66.7%).

## Bivariate Analysis

### Results of Analysis of Breastfeeding with Nutritional Status in Babies

The results of the bivariate analysis of breastfeeding with nutritional status in infants using the Spearman-rho correlation test can be seen in the table below.

Table 5 Results of the Spearman-Rho Test Analysis of Breastfeeding with Nutritional Status in Infants Age 6-24 Months

Variable	Correlation coefficient	P value
Breastfeeding with nutritional status in infants	0,560	0,030

Based on table 5 the analysis is obtained about the relationship between breastfeeding and nutritional status in infants aged 6-24 months which has a value of sig (2-tailed)  $a = 0.05$  or  $p = 0.030$  and this indicates that  $p < a$ , so  $H_0$  is rejected. and  $H_1$  is accepted, meaning that there is a relationship between breastfeeding and nutritional status in infants aged 6-24 months in the Pare Health Center work area in 2021 and the correlation coefficient value is 0.560, which means the strength of the relationship is in the medium and positive categories.

### **Results of Analysis of Complementary Breastfeeding with Nutritional Status in Babies**

The results of the bivariate analysis of complementary feeding with nutritional status in infants using the Spearman-rho correlation test can be seen in the table below.

Table 5 Results of the Spearman-Rho Test Analysis of Complementary Breastfeeding with Nutritional Status in Infants Age 6-24 Months

Variable	<i>kelompok</i>	Mean	p-value
Nutritional status in infants	Breastfeeding and MP-ASI	-0,467	0,089

Based on table 6 the analysis obtained about the relationship between complementary feeding of breast milk with nutritional status in infants aged 6-24 months which has a value of sig (2-tailed) a = 0.05 or p = 0.041 and this indicates that p < a , so that Ho is rejected and H1 is accepted, meaning that there is a relationship between complementary feeding of breast milk and nutritional status in infants aged 6-24 months in the Pare Health Center work area in 2020 and the correlation coefficient value is 0.533, which means the strength of the relationship is in the medium and positive categories.

### **Test Results Differences in Infant Nutritional Status between Breastfeeding and Complementary Breastfeeding**

The results of the analysis of the different test data with the calculation of the paired sample t-test on the nutritional status of infants using categorical data on the final results of the nutritional status categories of infants in the breastfeeding and complementary feeding groups can be seen in the table below.

Variable	<i>Correlation coefficient</i>	P value
Breastfeeding with nutritional status in infants	0,533	0,041

Based on table 8, it is known that the results of data analysis using the paired sample t-test on the difference between breastfeeding and complementary feeding of breast milk with nutritional status in infants aged 6-24 months obtained the results of the analysis with a value of sig (2-tailed) = 0.089 and error level (ct): 0.05, so p > ct, so Ho is accepted and H1 is rejected, meaning that there is no difference between the provision of breast milk and complementary feeding of breast milk with nutritional status in infants aged 6-24 months in the region. Pare Health Center in 2021.

## **DISCUSSION**

### **Analysis of Breastfeeding with Nutritional Status in Infants Aged 6-24 Months**

Based on tael 5, the analysis was obtained about the relationship between breastfeeding and nutritional status in infants aged 6-24 months who had a GIS (2-tailed) a= 0.05 ar=tau p= 0.030 and the value indicated that p<a, so that Ho is rejected and H1 is accepted, meaning that there is a relationship between breastfeeding and nutritional status in infants aged 6-24 months in the Pare Health Center work area in 2020 and the correlation coefficient value is 0.560, which means the strength of the relationship is in the medium and positive categories. Breast milk (ASI) is the most important source of nutrition needed by every baby, ideally given exclusively for 6 months and followed by complementary foods until the age of 2 years (8). According to breast milk is an emulsion of fat in a

solution of protein, lactose and inorganic salts secreted by the mother's mammary glands, which is useful as food for her baby (13).

The researcher argues that most respondents do not give breast milk according to the recommendation, which can be caused by various factors such as beliefs, behavior of the community or mothers in exclusive breastfeeding, support from the surrounding community, information and other factors. The belief factor means that if the mother is not sure that with breast milk alone her baby is full enough, then the mother will also tend not to give full milk but will provide other additional foods (7).

The support of the surrounding community is believed to have a large influence on a person's behavior. If there are still many community members who do not give exclusive breastfeeding, the mother also tends not to give exclusive breastfeeding. Information is believed to also have an effect on a person's behavior. In this case, it can be seen that all respondents have received information about exclusive breastfeeding, even almost all of them have received information about exclusive breastfeeding from health workers. However, considering that most of the education is only elementary school, it is likely that they are less able to receive and understand the information received so they still have negative perceptions which in the end still do not give exclusive breastfeeding. There are some mothers who work but can still give exclusive breastfeeding (14). This can occur due to the strong motivation of mothers to give exclusive breastfeeding. In addition, the distance from home to work is also not too far so that it is possible to continue to give breast milk to the baby. In addition, due to limited income, purchasing power for purchasing formula milk is also limited, so mothers still choose to breastfeed their babies.

### **Analysis of Complementary Feeding of Mother's Milk with Nutritional Status in Infants Age 6-24 Months**

Based on table 6 the analysis was obtained about the relationship between complementary feeding of breast milk and nutritional status in infants aged 6-24 months which had a sig value (2-tailed)  $a = 0.05$  or  $p = 0.041$  and this indicates that  $p < a$ , so  $H_0$  is rejected and  $H_1$  is accepted, meaning that there is a relationship between complementary feeding of breast milk and nutritional status in infants aged 6-24 months in the Pare Health Center work area in 2020 and the correlation coefficient value is 0.533, which means the strength of the relationship is in the medium and positive categories. According to Chomaria, MP-ASI is a transition from solely milk-based intake to semi-solid foods. Complementary food for breast milk is additional food given to infants after the baby is 6 months old until the baby is 24 months old (5). Complementary food for breast milk can be specially prepared for babies or the food is the same as family food, but the texture is adjusted to the baby's age and the baby's ability to receive food (6).

### **Analysis of the Difference between Breastfeeding and Complementary Foods with Mother's Milk with Nutritional Status in Infants**

Based on table 4.8, it is known that the results of data analysis using the paired sample t-test on the difference between breastfeeding and complementary feeding of breast milk with nutritional status in infants aged 6-24 months obtained the results of the analysis with a value of sig (2-tailed) = 0.089 and error level ( $a$ ): 0.05, so  $p > a$ , so that  $H_0$  is accepted and  $H_1$  is rejected, meaning that there is no difference between the provision of breast milk and complementary feeding of breast milk with nutritional status in infants aged 6-24 months in Pare Health Center work area in 2020. Based on the results of the research in the previous section, generally breastfeeding and complementary feeding are problematic, as well as the condition of the baby's growth. It can be understood that there are problems with the conditions of breastfeeding and giving MP-ASI.

According to babies aged 6 months, in addition to breastfeeding, babies can begin to be given complementary foods (MP-ASI), this is at the age of over 6 (six) months babies already have reflexes

in chewing through better digestion. well, and followed by the fulfillment of nutritional needs. Things that must be considered related to infant feeding, namely the timeliness of giving, frequency, type, amount of food ingredients, and how to make it. Inappropriate baby feeding habits, such as feeding too early or too late, not giving enough food and having less frequency have an impact on the baby's growth. Babies up to the age of 6 months, the need for nutrients can be met through exclusive breastfeeding, but after that age (6 months and over) the nutritional needs of babies are no longer enough by breastfeeding alone, but must be given additional food that serves as complementary food . Giving MP-ASI that is not enough will have problems with the baby's growth and development (14).

#### IV. CONCLUSION

Most of them have nutritional status in infants with malnutrition criteria as many as 9 respondents in breastfeeding infants aged 6-24 months, and there is a relationship between breastfeeding and nutritional status in infants aged 6-24 months in the Pare Health Center work area in 2020 and the value of correlation coefficient of 0.560 which means the strength of the relationship is in the medium and positive categories. Most of them have nutritional status in infants with good nutritional criteria as many as 10 respondents in the provision of complementary feeding for infants aged 6-24 months, and there is a relationship between complementary feeding of breast milk with nutritional status in infants aged 6-24 months in the Pare Health Center work area in 2020 and the coefficient value correlation is 0.533, which means the strength of the relationship is in the medium and positive categories. There is no difference between giving breast milk and complementary foods for breast milk with nutritional status in infants aged 6-24 months in the Pare Health Center work area in 2020

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