Mixed-Method Pilot Study: Effectiveness of HypnoBirthing in Labour Outcomes

Thavamalar Paramasivam[1], Umapathi Mariappan[2], Chong Mei Chan[3]
{ ptm_2104@yahoo.com.my [1], umapathi@mahsa.edu.my [2], mcchong@um.edu.my [3] }

UTAR, Sungai Long, Cheras, Selangor, Malaysia[1], MAHSA University, Kuala Lumpur, Malaysia[2], University of Malaya, Kuala Lumpur, Malaysia[3]

Abstract. Childbirth is commonly associated with pain. HypnoBirthing®Mongan method used during pregnancy and birthing offers women to be relaxed and fear-free. The study analyses the effectiveness of HypnoBirthing in labour outcomes using mixed methods. A quasi-experimental study conducted in a private hospital, Malaysia, involving 30 primigravidas followed by a qualitative interview among two samples within 48 hours after childbirth. The experimental group (HypnoBirthing) and control group (IM Pethidine) had 15 samples each. Pain assessed via Visual Analogue and Yazbek's Labour Pain Score, together with the perineal outcome. Results showed a statistically significant difference in pain score (p=0.031) HypnoBirthing and control group (p=0.000). Perineal outcome revealed experimental group had less second-degree tear (n=3, 20%) compared to control group (n=10, 66.6%). The qualitative result reveals participants were in control of themselves throughout childbirth and enjoyed the process. Women utilizing HypnoBirthing had better pain management than those receiving IM Pethidine.

Keywords: HypnoBirthing, IM Pethidine, labour pain, visual analog, Yazbek's labour pain score.

1 Introduction

The childbirth process is perceived as one of the most painful moments in women's life. Nevertheless, the childbirth process could be an ecstatic and memorable lifetime event for women and their families. The majority of women have a fear of labour, and they opt for pharmacological pain relief. Women develop a fear of childbirth due to the way media represents the childbirth process, and from the scary labour stories, they hear from friends and relatives. This fear has been instilled in women from a young age. Furthermore, according to Kozhimannil, the rate of elective cesarean section has increased worldwide, and the leading reasons are fear of the childbirth process [6]. Dr. Grantly Dick Read has highlighted that fear is the root cause of pain during the childbirth process, as fear leads to stress, which indirectly linked with pain. Most of the women who have given birth in the hospitals require a form of pain relief, and the delivery ends with instrumental delivery [10].

HypnoBirthing®Mongan method was developed by Marie Mongan to help women during the birthing process [10]. She developed her ideas from Dr. Grantly's theory of fear, stress, and pain to eliminate fear from birthing women. Furthermore, initially, she used the methods in her birthing process and later for her daughter. Marie Mongan published a book in 1989,

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

which explains that HypnoBirthing®Mongan techniques can be utilized according to the birthing process stages. She advocated that birthing women should use light touch massage and ambulation during the early stage of labour. During the transition period, women can use deep pelvic pressure and different birthing positions as a way of comfort measures. Besides that, she also advises women to use positive affirmation about pregnancy and birthing as it generates positive outcomes during the actual birthing process. Women are also taught to listen to rainbow relaxation techniques, visualization on birthing to enhance and fasten the birthing process, deep breathing techniques that can be used in three different phases of birthing, and also use a birthing ball, and aromatherapy.

The word Hypno is a Greek, which means sleep and birthing is the process of childbirth [3]. Hence, it is birth during sleep. Pain is less felt during sleep. Therefore, women using HypnoBirthing most likely will be relaxed and comfortable. So, this method can benefit both the mother and the newborn. In a hypnosis study, it was highlighted that when a birthing mother is in a relaxed state, they will either have less or no fear. It leads them to have less pain and be more in control of themselves and the decisions they make. [1, 4, 7] Besides this, the birthing women's first and second stages of labour will be shorter, and there are higher incidences of less usage of analgesic, induction, and interventions during the birthing process [7]. Many pregnant women used hypnobirthing methods since the late 1950s, but there are not many pieces of evidence on the benefits of HypnoBirthing, because there was less research done in this area.

Moreover, in Asian countries, very few people are aware of HypnoBirthing though it has been practiced more than half a century. Besides, only a small number of hospitals and doctors in Asian countries are practicing this method or allow this practice in the hospital setting. This method is a new way to ensure women are comfortable during pregnancy and birthing process with fewer side effects and complications. However, there is a lack of awareness of this among public and pregnant women.

The objective of this present study is to assess the effectiveness of HypnoBirthing in labour outcome. The specific aim is to determine the level of labour pain for the experimental and control group before and after the intervention and to compare the level of labour pain after intervention between the experimental and control group, perineal condition of samples from both the group and Apgar score of newborns. The association between socio-demographic variables and the level of labour pain after intervention for the experimental and control groups is determined. Furthermore, this study also investigates the participants' feelings on the pain relief method they have chosen to use during the childbirth process.

2 Method

A mixed-method study was carried out. Initially, a quantitative study was done in the form of a quasi-experimental and followed by a qualitative study. The samples for both quantitative and qualitative study were recruited using a purposive sampling technique. The sample for the quantitative phase was recruited after 12 weeks of gestation. Once the samples were recruited, they were assigned to the experimental and control group. A pilot study was done in a private hospital in Cheras, Kuala Lumpur, Malaysia from November 2015 till January 2016 after obtaining approval from the University Ethical Committee and the Hospital Ethical Committee. The delivery rate in this hospital is around 1200 to 1400 annually till 2014. However, a total of 30 samples were recruited, and each group had 15 samples. No drop

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

out until data collection was completed. Only one sample was recruited from each group for the qualitative phase. The inclusion criteria for the quantitative phase were aged between 20 to 40 years, had a healthy pregnancy and singleton.

Furthermore, only samples without obstetric problems were included in the study. The exclusion criteria were below 20 years or above 40 years and multiple fetuses. Besides, those with mental problems were also excluded, as hypnotherapy cannot be used on them. As for the qualitative phase, the participants were recruited during the quantitative phase. Only participants that were willing were recruited. However, only one participant from each group was recruited for the pilot study.

The instrument used to assess pain was Visual Analog (VA) and Yazbek's Labour Pain score (YLPS). YLPS is scored by the assessor, and VA was verbalized by the samples. YLPS was scored according to the pain intensity, quality together with samples' behavior, physiology, fatigue, psychosocial, and emotion. Perineal outcome and Apgar score were assessed using the standard criteria used in hospitals all over the world. However, the Apgar score was measured three times, which was at 1, 5, and 10 minutes.

Samples from both groups were given classes after being recruited. The classes for both the group was held for six continuous weeks on different days, and each class was conducted for two and a half hour. HypnoBirthing®Mongan method was taught for samples in the experimental group, which were on food, exercise, and techniques that they can utilize during the birthing process. Additionally, samples were also taught on perineal massage and usage of 'J' breathing technique while breathing down the baby. Conversely, the samples from the control group were taught standard antenatal care such as signs of labour, preparation for admission, pain management, which mainly involve pharmacological therapy, nutrition, exercise, and breastfeeding. Moreover, the samples from this group were taught the standard pushing technique used in hospitals, which is also called controlled pushing.

Content validity for the instruments used in this study was done by sending it to obstetricians and midwives. It was suggested that only a few selected nurses should use YLPS as it is a comprehensive tool. A reliability test was done after the completion of the pilot study. The variables were VA and YLPS before the intervention and VA and YLPS after intervention and Apgar score. The reliability test was not done for the perineal outcome, as it was only measured once. The reliability test in the current research before the intervention was 0.862 and after intervention was 0.902.

The initial data were collected from the samples in both the groups upon admission to the labour room when the cervix was four to six centimeters dilated. Data for pain was collected using both VS and YLPS [13]. The samples were encouraged to use the techniques that were taught to them during the classes. However, samples from the control group received IM Pethidine 75 mg and Phenergan 25 mg when they verbalized unbearable pain or requested for pain relief. Reassessment of the pain was done for the sample from both groups when they were fully dilated (10 centimeters). According to Labor & Maguire, the pain level at this point is considered at the peak for birthing women. [14] Assessment of newborn wellbeing was measured using the Apgar score to evaluate the effects of HypnoBirthing and pharmacological methods on the newborn. It is done at birth, five, and ten minutes after birth to measure the outcome or to identify deterioration if the initial score was lower than seven. The perineal score was also assessed using the standard method to categorize the tear if present.

In the qualitative phase, data collection was done using a single individual face to face semi-structured interview method. Samples from both the group were asked the same questions within 48 hours after giving birth. Data was collected in the sample room as they were in a single room. The reason data was collected within 48 hours after the delivery was

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

due to the freshness of the feeling and memory of the participants. [15]. The average time taken for the interview was around 20 minutes.

Quantitative data were analyzed using a statistical package for Social Sciences for Windows (SPSS 19). Data were entered manually. As a way to prevent errors due to manual entering data were double-checked. Analysis of the frequency of each value of the variables was done as a precaution in preserving accuracy. A normality test was done to ensure the nature of parametric to be used for analysis. VA, YLPS, and the perineal outcome were within the normal distribution, so paired 't' test, and independent 't' test was used for analysis. Nevertheless, non-parametric Mann U Whitney was used for analysis as the distribution was not within normal. The socio-demographic information such as age, race, religion, education level, occupation and income were analyzed.

Qualitative data were analyzed using thematic analysis. However, as only one sample from each group was interviewed, only the main words were identified. As the qualitative phase in the pilot study was used as an evaluation of the adequacy of the question, to gain experience in conducting the interview and as question testing [16].

3 Result

All the 30 samples completed their quantitative phase. Fifteen from each group. Samples from the experimental group utilized HypnoBirthing techniques, and those in the control group received intramuscular Pethidine 75 milligrams with 25 milligrams of Phenergan as a pain management technique.

The sociodemographic data highlights that the majority of the sample from both the group were between the age group of 30 to 34 years; the experimental group was 10 (66.75), and the control group was 6 (405). As in the racial and religion category, mostly were Chinese and Buddhist in both the group, 13 (86.7%). The majority of the sample, which is equally the same from both the group in the monthly income were earning around RM 5,001 to RM 10,000, 8 (53.3%). As in the educational level and occupation, again majority are degree holders and employed for wages in both the groups but with different percentage whereby experimental group 6 (40) and control group 9 (60%) and experimental group 8 (53.3%) and control group (66.7%) respectively.

Table 1. Experimental group's level of labour pain before and after HypnoBirthing (n=15)

Experimental group pain score		Mean	Standard deviation	Paired 't' test	Significant value
Visual Analog	Before (4 – 6 cm)	2.13	1.885	2.402	**p = 0.031
	After (Fully)	3.33	1.633		
Yazbeks' Labour Pain Score	Before (4 – 6 cm)	2	1.732	1.013	p = 0.328
	After (Fully)	2.6	1.682		

$p<0.05$

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 1 shows that the mean pain score utilizing VA for the experimental group on admission was 2.13 (SD± 1.885), and there was a slight reduction in the mean score of pain after the intervention, which was when the cervix fully dilated was 3.33 (SD± 1.633). The findings using YLPS were similar to VA, whereby the mean score of pain was 2 (SD± 1.732) on admission and a slight decrease after the intervention was 2.6 (SD± 1.682), which was once cervix was fully dilated. Nevertheless, the paired 't' test showed a statistically significant difference for VA (p=0.031). However, YLPS indicates that there was no statistically significant difference (p=0.328) in the labour pain score before and after intervention for the experimental group. It can be concluded that HypnoBirthing techniques were indeed given comfort and good as there was not much difference in the mean pain score before (2) and after the intervention (2.60).

Table 2. Control group's level of labour pain before and after pharmacological therapy (n=15**)**

Control Group's Pain Score		Mean	Standard Deviation	Paired 'T' Test	Significant Value
Visual Analog	Before (4 – 6 cm)	2.27	1.438	15.027	*P = 0.000
	After (Fully)	8.93	1.163		
Yazbeks' Labour Pain Score	Before (4 – 6 cm)	2.07	1.792	13.780	*P = 0.000
	After (Fully)	8	1.69		

p<0.05

However, in the level of labour pain before and after pharmacological therapy, there was a significant difference in the mean score of the control group. The mean score on admission assessed by VA was 2.27 (SD± 1.438) and by YLPS was 2.07(SD± 1.792). The mean score after receiving IM Pethidine and Phenergan when the cervix was fully dilated was 8.93 (SD± 1.163) using VA and 8 (SD± 1.69) by YLPS. There was a statistically significant difference in the pain score in this group (p=0.000). This outcome is illustrated in Table 2.

Table 3. Comparison of the level of labour pain between the experimental and control group (n=15)

Pain Score Measurement		Experimental Group		Control Group		Independent 'T' Test
		Mean	Standard Deviation	Mean	Standard Deviation	
Visual Analog	After (Fully)	3.33	1.633	8.93	1.163	10.819 P = 0.00
Yazbeks' Labour Pain Score	After (Fully)	2.6	1.682	8	1.69	8.771 P = 0.00

p < 0.05

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 3 shows a comparison of the mean pain score between the experimental and control group after the intervention, and there was a vast difference found when measure using either VA or YLPS. The mean score measured for the experimental group using VA was 3.33(SD± 1.633), in comparison to the control group, whereby the mean score was 8.93 (SD± 1.163). Similar findings were evaluated using YLPS, whereby the mean score for the experimental group was 2.6 (SD± 1.682), and the control group was 8 (SD± 1.69). The independent 't' test showed that there was a statistically significant difference in the pain score between the experimental and control groups using both VA and YLPS (p=0.000).

Table 4. The perineal outcome of the experimental and control group (n=30)

Perineal outcome	Experimental group		Control group	
	Frequency	Percentage	Frequency	Percentage
Intact	1	6.75%	0	0%
Skin nick	5	33.3%	1	6.7%
1º tear	6	40%	4	26.7%
2º tear	3	20%	10	66.6%

Table 4 reveals the finding of the perineal outcome for the experimental and control groups. The finding shows a significant difference between the experimental and control groups. The results demonstrated around half of the sample, 6 (40%), from the experimental group had the first-degree tear compared to samples in the control group, whereby only 4 (26.7%) had the first-degree tear. One-fifth of the experimental group sample, 3 (20%), had second-degree tear compared to the control group as the majority of samples from this group, 10 (66.6%), had a second-degree tear. Some of the samples had skin nick and intact perineum which is considered as a good birthing outcome. Statistically, nearly half, 5 (33.3%), from the experimental group had skin nick and only one sample (6.7%) from the control group had skin nick. None of the samples from the control group had intact perineum compared to the experimental group, whereby one example (6.75%) had intact perineum. As for the Apgar score of the newborn for 1, 5, and 10 minutes after birth, there was no statistically significant difference (p = 112.2) for both the groups. It was analyzed using the Mann Whitney test.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 5. Association between socio-demographic and level of labour pain when cervix fully dilated in the experimental and control after intervention using Visual Analog and YLPS and between perineal outcome (n=30)

Socio-demographic characteristic	Experimental group				Control group			
	Frequency	Chi square test for visual analog	Chi square test for YLPS	Chi square test for perineal outcome	Frequency	Chi square test for visual analog	Chi square test for YLPS	Chi Square Test for perineal outcome
Age								
20 – 24 Years	0				2			
25 – 29 Years	4	1.633	2.727	6.075	5	4.821	6.933	8.450
30 – 34 Years	10	p=0.803	p=256	p=0.415	6	p=0.185	p=0.327	p=0.207
35 – 39 Years	1				2			
Race								
Malay	1	1.538	0.839	6.308	2	2.637	0.659	1.154
Chinese	13	p=0.820	p=0.657	p=0.390	13	p=0.104	p=0.719	p=0.562
Indian	1				0			
Religion								
Islam	1				2			
Buddhist	13	1.538	0.839	6.308	13	2.637	0.659	1.154
Hindu	1	p=0.820	p=0.657	p=0.390	0	p=0.104	p=0.719	p=0.562
Christian	0				0			
Education Status								
Primary	0				0			
Secondary	2	6.111	3.068	19.000	1	2.054	6.413	10.083
Certificate	1	p=0.635	p=0.546	p=0.089	1	p=0.561	p=0.284	p=0.121
Diploma	4				4			
Degree	6				9			
Postgraduate	2				0			
Income								
Below RM 5,000	0				0			
RM 5,001 - RM10,000	8	1.317 p=0.859	1.832 p=0.400	7.088 p=0.313	8	2.645 p=0.266	9.600 **p=0.048	4.331 p=0.363
RM 10,001 - RM 15,000	2				2			
RM 15,001 - RM 20,000	5				5			
Above RM 20,001	0				0			
Occupation								
Employed for wages	8				10			
Self employed	0	1.250 p=0.535	0.024 p=0.876	9.107 **p=0.028	0	0.134 p=0.714	3.686 p=0.158	4.425 p=0.109
Housewife	7				5			

The findings between socio-demographic variables (age, race, religion, education, status, household income, and occupation) and pain level using VA and YLPS and perineal outcomes

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

were illustrated in Table 5. The findings reveal that there was no statistically significant difference between the experimental and control group.

The qualitative findings highlighted the participant in the experimental group was in control of herself during the childbirth process. Furthermore, according to her, the process was a gratifying and memorable moment for her. In addition to this, according to the participant, she was able to choose a method that was suitable for her from all the HypnoBirthing techniques during the different phases of the childbirth process. In the early stage, she used light touch massage, ambulation, and self-hypnosis, along with listening to the rainbow relaxation music. During the late stage, the participant used the birthing ball and deep pelvic pressure, and she felt comfortable throughout the process. She also felt the process was faster by using visualization techniques and positive affirmation. However, the participant from the control group stated that she was very comfortable in the beginning during the admission to the labour room. Nevertheless, she felt pain as the contraction started. Moreover, the participant verbalized that agreeing to use the intramuscular injection was a terrible mistake that she would not repeat the next time she comes for delivery. According to her, the infusion made her feel sleepy but was not able to reduce the pain as she felt the pain till the end.

4 Discussion

The present study was to assess the effect of HypnoBirthing on labour outcome. The difference between the experimental and control groups was measured in specific variables during the childbirth process. The variables that were assessed was labour pain using VA and YLPS, Apgar score of newborn, and perineal outcomes of the samples. The response rate in the quantitative phase was 100% for both the group as all the 30 samples delivered via spontaneous vaginal delivery and only used the pain management techniques recommended in the group. The present study highlighted that the pain level in the experimental group after using HypnoBirthing techniques was not a statistically significant difference as the changes were minor. This outcome demonstrates that there was only a slight increase in the level of labour pain after using HypnoBirthing techniques. An RCT done among 176 nulliparous in Australia similarly shows that techniques such as breathing technique, positive affirmation, visualization, light and touch massage used by the experimental group in that study had better pain management compared to the control group who received standard antenatal care. The usage of epidural among the participants in the experimental group was only 23% compared to 68.7% in the control group [8]. It was explained that light touch massage and breathing techniques such as used in the HypnoBirthing®Mongan method increases the endorphin level due to the increase in the circulating CSF fluid which eases the pain. According to Kappas, visualization activates neurons in the brain, which actualize the pictured image in real life [5]. It is supported by an MRI image, which shows shifting in the brain activity from the left hemisphere to the right region, from logical thinking to creative thinking that enhances the visualization [11]. Furthermore, the participants from the qualitative study in the present study verbalized that usage of light touch massage helped her during the early stage of the childbirth process. Moreover, the participant also mentioned that visualization enhanced the cervix dilation, and she felt that her childbirth process was faster.

The findings from the present study on the level of pain before and after pharmacological therapy in control using VA and YLPS demonstrate a statistically significant difference as the

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

mean pain score before treatment was 2.27 and 2.07. However, after the therapy, the mean pain score increased from the initial value to 8.93 and 8 respectively. The present study results were similar to some other studies done in the UK and German [9, 12]. These studies highlighted that participants from the Pethidine group had to go for additional pain relief method which is also pharmacological, such as an epidural [9]. One of the studies shows that the pain increased by 0.2 points [12]. Both of these researches further found that participants were not satisfied with injection Pethidine. These are parallel with the qualitative phase of the present study. As the participant verbalized that in the next pregnancy, she will be going for an epidural as Pethidine did not help to relieve her childbirth pain. She only felt sleepy and not able to follow instructions from the nurses during the final stage of the childbirth process. Nevertheless, another RCT done among 156 women in South Australia shows that the participants who received Pethidine pain relief had a significant reduction in their pain score, whereby the mean pain score was1.2 from 1.6, $p<0.0001$ [4]. However, in the same research, the findings were highlighted as no statistically significant when the results were compared with two other groups [4].

The level of labour pain between the experimental and control groups after the intervention in the present study shows there is a statistically significant difference when measured via both the VA and YLPS [2]. However, an RCT has done in Iran between groups using acupuncture, Pethidine, and routine care displays that there were no significant differences in the group before the intervention. Nevertheless, findings reveal that there was a significant difference between the groups 30 minutes after intervention but no significant difference between the groups when the cervix was fully dilated ($p=0.133$).

Findings from the present study demonstrated that the perineal condition between the experimental and control group shows a major difference whereby those in the experimental group mostly had the first-degree tear, and some even had skin nick and intact perineum. The majority of the samples from the control group who practiced controlled breathing had a second-degree tear, and some had a first-degree tear and skin nick. Samples from the experimental group used 'J' breathing technique during birthing which increases the descend of the baby in the birth canal, and similarly, this technique protects the pelvis muscles from a tear as it helps the muscles to become more relaxed compared to the standard method used [10]. Furthermore, the sample from the experimental group also used perineal massage from 36 weeks gestation which helps during the crowing. Results from research in Australia were parallel to the present study, which displays that using complementary therapy had a better perineal outcome with those using standard care (RR = 0.88 (95% CI 0.7 to 0.98), $p=0.02$) [8]. Similar to the present study, the study in Australia also allowed the samples to use their preferred position for birthing, and the outcome indicates that those in the control group had 96.4% had sustained perineal tear compared to 84.7% in the experimental group [8]. Even the participant from the experimental group from the qualitative study in the present study expressed that 'J' breathing made her perineal muscle feel relaxed, and the techniques were easy to follow as she thought that she breathes out the baby and feels very relaxed after the birthing process. However, the participant from the control group verbalized that she felt drained after birthing as she felt very sleepy and was not able to follow the nurse's instructions. Furthermore, she also said that the technique she used which is controlled pushing was very tiring and frequently felt her mouth becoming dry and needs sips of water.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

5 Conclusion

In conclusion, it can be concluded that the usage of the HypnoBirthing®Mongan method during the birthing process is effective in reducing pain with a better perineal outcome. However, results for the neonatal outcomes from both groups were the same with no side effects. Hence, it is recommended that HypnoBirthing should be included in midwifery. It can enhance midwife's knowledge of alternative therapies used during birthing and be more helpful to pregnant women during birthing as likely not everyone wants to use pharmacological therapy. Moreover, it also can be incorporated into the nursing syllabus as a complementary therapy.

References

[1] Abbasi, M., Ghazi, F., Barlow-Harrison, A., Sheikhratan, M. & Mohammadyan, F.: The effects of hypnosis on pain relief during labour and childbirth in Iranian pregnant women. International Journal of Clinical and Experimental Hypnosis. 57(2), pp.174-183 (2009)

[2] Allameh, Z., Therani, H.G. & Ghasemi, M.: Comparing the impact of acupuncture and pethidine on reducing labor pain. Adv Biomed Res. 4:46. doi: 10.4103/2277-9175.151302. eCollection 2015 (2015)

[3] Barabasz, A. & Watkins, J.G.: Hypnotherapeutic Techniques 2E. 2nd ed. New York, Brunner-Routledge (2012)

[4] Fleet, J., Belan, I., Jones, M.J., Ullah, S. & Cyna, A.M.: A comparison of fentanyl with pethidine for pain relief during childbirth: A randomized controlled trial. British Journal of Obstetrics and Gynecology. 127(7), pp.983-992 (2015)

[5] Kappas, J.G.: Professional hypnotism manual.5th edn. Panorama Publishing Company, US (2009)

[6]Kozhimannil, K.B., Johnson, P.J., Attanasio, L.B., Gjerdingen, D.K., McGovern, P.M.: Use of nonmedical methods of labour induction and pain management among US women. BIRTH. 40 (4), pp. 227-236 (2013)

[7] Landolt, A.S. & Milling, L.S.: The efficacy of hypnosis as an intervention for labour and delivery pain: A comprehensive methodological review. Clinical Psychology Review. 31, pp.1022-1031 (2011)

[8] Levett, K.M., Smith, C.A., Bensoussan, A. & Dahlen, H.G.: Complementary therapies for labour and birth study: A randomized controlled trial of antenatal integrative medicine for pain management in labour. BMJ Open. 6 (7), pp. 1 – 12 (2016)

[9] Mansoori, S., Adams, S. & Cheater, F.M.: Choice of analgesia in labour on neonatal outcomes, delivery, and maternal satisfaction with pain relief. Clinical Effectiveness in Nursing. 4 (1), pp. 11 – 19 (2000)

[10] Mongan, M. HypnoBirthing® The Mongan Method: A natural approach to a safe, easier, more comfortable birthing. 3rd edn. Health Communications Insc, Florida (2005)

[11] Newmark, T.: Cases in visualization for improved athletic performance. Psychiatric Annals. 42 (10), pp. 385 – 387 (2012)

[12] Singer, J., Jank, A., Amara, S., Stepan, P.D.H., Kaisers, U. & Hoehne, C.: Efficacy and effects of parental pethidine/ Meptazinol and regional analgesia for pain relief during delivery: A comparative observational study. Geburtshilfe Frauenheilkd. 76 (9), pp. 964 – 971 (2016)

[13] Yazbek, M.: The measurement of pain during the first stage of labour. [Access via https://ujdigispace.uj.ac.za/bitstream/handle/10210/8243/Yazbek.pdf?sequence=1] (2010)

[14] Labor, S. & Maguire, S.: The pain of labour. British Journal of Pain. 2 (2), pp. 15-9 (2008)

[15]Talmi, D., Luk, B.T.C., Mc Garry, L.M. & Moscovitch, M.: The contribution of relatedness and distinctiveness to emotionally-enhanced memory. Journal of memory and language. Vol 56 (4), pp. 555-574 (2007)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[16]Janghorban, R., Roudsari, R.L. & Taghipour, A.: Pilot study in qualitative research: the roles and Values. Hayat, Journal of School of Nursing and midwifery. 19(4), pp. 1-5 (2013)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Factors and Outcomes of Unplanned Extubation among Mechanically Ventilated Patients In The ICU

Dona Cyreline Chin[1], Norfidah Mohamad[2], Zamzaliza Abdul Mulud[2]
{cyreline@yahoo.com[1], norfidah@uitm.edu.com[2],Zamzaliza@uitm.edu.com[2]}

Training Institution Ministry of Health Malaysia Kota Kinabalu, Sabah, Malaysia[1]
Centre for Nursing Studies, Faculty of Health Sciences, Universiti Teknologi MARA Selangor, Puncak Alam Campus, Malaysia[2]

Abstract. Unplanned extubation is the premature removal of the endotracheal tube by action of the mechanical ventilated patient or accidentally during nursing or medical procedure. The purpose of this study is to determine the risk factors and outcomes of unplanned extubation among mechanically ventilated patients in the intensive care unit.A retrospective study was conducted using a sample of 300 patients who experienced planned extubation and unplanned extubation from January 2015 to December 2017. Data were collected using a case report form by reviewing medical records and incident reports of unplanned extubation. The results from this study found factors associated with increased risk for unplanned extubation included earlier day of intubation (65.8%), weaning process (63.2%), males (60.5%), afternoon shift (55.3%), and when patient appears agitated (55.3%). Poor outcomes were significant in unplanned extubation group with regards to higher re-intubation rate, the need for tracheostomy insertion and more post extubation complications. This study revealed that the risk factors associated with unplanned extubation based on various factors were very significant and the outcomes were also poor. This warrants that unplanned extubation to be acknowledged as a critical issue for the intensive care unit quality control.

Keywords: Unplanned extubation, mechanical ventilation, Intensive Care Unit, risk factors.

1 Introduction

Endotracheal tube (ETT) intubation is a life-saving procedure that performed when a patient required mechanical ventilation. However, unplanned extubation (UE) is commonly reported as an adverse event among these mechanically ventilated (MV) patients in the Intensive Care Unit (ICU). The prevention of this significant safety issue is paramount for both the patient and the organization. UE is the premature removal of the endotracheal tube, either by the action of the mechanically ventilated patient (self-extubation), or accidental by the health care team during nursing care or medical care (accidental extubation)[1]. UE often causes complications such as failure to re-intubate, acute respiratory failure, nosocomial pneumonia, and even respiratory and cardiac arrest, eventually leading to death. In order to reduce or prevent the incidence of UE in the ICU, the risk factors and outcomes of UE among MV patients need to be determined.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

In 2015, around 29,300 (74%) patients admitted to the ICU in Malaysian public hospitals were on invasive ventilation and 1,876 (6.4%) were re-intubated. Out of this number, 0.2 per 100 intubated days were UE [2]. The incidences of UE vary with different ICU settings and has remained unchanged for the past two decades with the rate of UE ranges from 3.4% to 22.5% or 0.1 to 3.6 events per 100 intubation days[1,3,4,5]. Similarly, the occurrence of UE in the Ministry of Health Malaysia hospitals has been consistent over the past 5 years (2010 to 2015) i.e. ranging from 0.2 to 0.4 per 100 intubation days [2]. Studies have shown that the major risk factors of UE include admission route, Glasgow coma scale, Acute Physiology and Chronic Health Evaluation II (APACHE II) score, agitation, delirium, mode of mechanical ventilation and night shift, patient under the care of less experienced nurses, nurse/patient ratio of more than 1:2, and when nurses or caregivers are not at the patient's bedside [1,3,5,6,7]. Male gender, use of physical restraints, sedation practice, inappropriate tube fixation, and incidents during the weaning process also included as risk factors of UE [1,8]. Previous author reported that the rate of re-intubation after failed extubation was high with more than 70% had immediate re-intubation [9] and the overall incidence density of UE was 0.92 of 100 days of ventilation where 76% of the episodes of UE occur on patients scheduled for weaning, 71% cases reported as self-extubation and 41% required re-intubation due to accidental extubation [10]. While nurses often use physical restraint to protect patients from harm, evidence suggests that such an approach is associated with substantial iatrogenic injury, delirium, self-extubation, physical injuries, and agitation [11]. However, early identification of the risk factors and patient outcomes may help to reduce the incidence of UE by the implementation of a quality improvement program[5].

Complications related to UE vary and include dyspnea, nosocomial infection, airway trauma, difficult intubation, lengthened hospitalization, and emergency tracheostomy[6]. Significant adverse events related to UEs are cardiac arrest, desaturations and difficult intubations where 55% out of the 35 UE patients required re-intubation within 1 hour [12]. Significant differences were found between the UE and PE groups in terms of ICU outcomes for the number of re-intubation, time of discharge and length of ICU stay after extubation [5]. The pooled data indicated an apparent increase in the prevalence of ventilator-associated pneumonia (VAP) when re-intubation occurred. Although rapid re-establishment of ventilatory support after UE may save a patient's life, significant organ damage can still occur, resulting in a delay in recovery and prolonged ICU care and hospitalization [8]. Other authors stated that patients with UE had a lower mortality rate despite longer days on MV and longer ICU stay, which indicates the increased need for MV and ICU care, where a moderate to a high prevalence of potentially modifiable risk factors for UE means unsatisfactory ICU practices [11]. In the Malaysian context, there is no specific research published on risk factors and outcomes of UE in the ICU. In concern with patient safety and wellbeing, it is necessary to identify the factors and issues of UE in order to improve patient management and, thus will reduce the incident of UE. Therefore, this research aimed to study the factors and outcomes of UE among mechanically ventilated patients in the ICU.

2 Method

The study is a retrospective with cross-sectional design, where data collection was carried out by reviewing the medical records of patients who had been mechanically ventilated and had experienced PE and UE. The instrument used is researcher-completed, data collection sheets

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

that were used to record the patients' demographic data, risk factors of UEs, and outcomes of PEs and UEs.

The sample of this study was recruited from a single 16-bed general ICU of a tertiary hospital in Kota Kinabalu, Sabah Malaysia. The data was collected for a period of three years, i.e. from January 2015 to December 2017. The population of this study involved all the critically ill adult patients that had undergone invasive mechanical ventilation with ETT intubation. An average of 74% out of the 925 patients admitted into the ICU in 2015 was ventilated mechanically with 0.3 per 100 intubated days of UE[2]. A total of 38 cases of unplanned extubations occurred in 7,164 mechanically ventilated patients over the 3-year study period (frequency, 0.5%). The sample size was determined based on this available data. This study had applied purposive sampling as a non-probability sample that is selected based on the characteristics of the population and the objectives of this study, and only patients who were intubated with ETT and have experienced PEs and UEs were recruited. The sample size calculation based on Slovin's formula; the sample size for this study was 300. To compare the outcomes between the two groups (planned and unplanned extubation), the percentage of outcomes for each group used for data analysis, where the total number of PEs was 262 while UEs only 38.

The instruments used in this study include data collection sheets that were used to identify the patients' risk factors, complications, and outcomes of UE. The instrument derived from previous researches with appropriate permissions granted by the authors. The instrument was modified according to the local clinical practice guidelines and the ICU management protocol [13]. These modified data collection sheets were validated by an expert team consisting of an intensivist, an ICU nurse specialist, and a respiratory therapist. Part A consists of participants' socio-demographic data and the intubation states, Part B entails the risk factors of UE and Part C entails the complications and outcomes of PE and UE after extubation.

The data collected was analyzed using the IBM Statistical Package for Social Science (SPSS) version 21. In order to identify the risk factors and complications of UE, the data was analyzed descriptively and the central tendency, variability or dispersion were measured. Compare the outcomes between PE and UE, a Chi-square test was carried out.

This study was approved by the UiTM Research Committee (REC); (Approval Reference: 600-IRMI(5/1/6) and the Medical Research and Ethics Committee (MREC), through the National Medical Research Registry (NMRR) [Approval Reference: NMRR-17-2991-39451 (IIR)]. All information gathered in this study will remain confidential. All required data was recorded in the data collection sheets, and no archival of medical records was done. There was no informed consent obtained as data was collected retrospectively from case records whereby the patients are no longer in the hospital as stated in the World Medical Association Declaration of Helsinki (2013), there may be exceptional situations that informed consent not necessary if it is impossible to obtain the consent[14].

3 Result

This study showed that 0.5% of UEs occurred in 7,164 mechanically ventilated patients over the 3-year study period from 2015 to 2017, conducted at the public hospital in Kota Kinabalu, Sabah Malaysia. The results were presented in three components. The first component describes the participants' demographic characteristics and intubation states. The second component shows the details on the risk factors of UE, and the third component reveals the comparison of outcomes between PEs and UEs.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

a. Participants' Demographic Characteristics and Intubation States

The summary of the frequency and percentage of the main demographic characteristic of the study samples are presented in Table 1. The type of extubation consists of 262 (87.3%) PEs and 38 (12.7%) UEs. Out of the 38 UEs, 31 (81.6%) were self-extubations and 7 (18.4%) were accidental extubations. The mean (SD) age of the subjects was 46.07 (16.57) years, ranging from 18 to 76 years old. The highest percentage was the age group between 50 to 59 years old. Meanwhile, the frequency for gender was 169 (56.3%) males and 131 (43.7%) females. The route of admission, most of the patients were admitted via the emergency department (ETD), i.e. 192 (64.0%), followed by the Operating Theater (OT) i.e. 53 (17.7%), via ward, i.e. 49 (16.3%) and finally from other hospitals i.e. 6 (2.0%). For reason of admission, a majority of the subjects admitted to the ICU were diagnosed with respiratory disease, i.e. 92 (30.7%), followed by septic shock i.e. 71 (23.7%), other diagnosis i.e. 62 (20.7%), Neurovascular disease 22 (7.3%), polytrauma 21 (7.0%), cardiovascular disease 14 (4.7%), endocrine disease 13 (4.3) and finally kidney disease 5 (1.7%). The duration of intubation days, the mean (SD) was 1.43 (0.64) with 5.1 (4.7) PE and 7.0 (4.9) UE, and the highest percentage was on ealier day of intubation duration (less than five days).

Table 1. Socio-demographic Characteristics and Intubation States of PE and UE (N = 300)

Variable	Total group n(%)	Mean (SD)	Planned Extubation		Unplanned Extubation	
			n(%)	Mean (SD)	n (%)	Mean(SD)
Age (Years)		46.1(16.6)		46.13 (16.6)		45.63 (16.3)
18 - 29	67(22.3)		59(22.5)		8(21.1)	
30 - 39	42(14.0)		34(13.0)		8(21.1)	
40 - 49	47(15.7)		44(16.8)		3(7.9)	
50 - 59	72(24.0)		60(22.9)		12(31.6)	
60 - 69	50(16.7)		46(17.6)		4(10.5)	
Above 70	22(7.3)		19(7.3)		3(7.9)	
Gender						
Male	169(56.3)		147(56.1)		23(60.5)	
Female	131(43.7)		115(43.9)		15(39.5)	
Routeof Admission						
ETD	192(64.0)		162(61.8)		30(78.9)	
Ward	49(16.3)		47(17.9)		2(5.3)	
OT	53(17.7)		47(17.9)		6(15.8)	
Other hospital	6(2.0)		6(2.3)		0(0.0)	
Reason for intubation						
Respiratory distress	92(30.7)		82(31.3)		10(26.3)	
Septic Shock	71(23.7)		61(23.3)		10(26.3)	
Neurovascular disease	22(7.3)		20(7.6)		2(5.3)	

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Variable	Total group n(%)	Mean (SD)	Planned Extubation		Unplanned Extubation	
			n(%)	Mean (SD)	n (%)	Mean(SD)
Polytrauma	21(7.0)		14(5.3)		7(18.4)	
Cardiovascular disease	14(4.7)		11(4.2)		3(7.9)	
Endocrine disease	13(4.3)		11(4.2)		2(5.3)	
Kidney disease	5(1.7)		5(1.9)		0(0.0)	
Others	62(20.7)		58(22.1)		4(10.5)	
Duration of Intubation		5.3 (4.2)		5.1 (4.7)		7.0 (4.9)
Less than 5 days	195(65.0)		178(67.9)		17(44.7)	
5 – 10 days	81(27.0)		69(26.3)		12(31.6)	
More than 10days	24(8.0)		15(5.7)		9(23.7)	

b. Risk Factors of Unplanned Extubation

A descriptive analysis test was performed to determine the risk factors associated with UE among the 38 UEs. The result of the test shown in Table 2. indicates that there is an increased risk of UE among males, i.e. 23 (60.5%) as compared to females, i.e. 15 (39.5%). Patients with a RASS score of +2 (agitated), i.e. 18 (47.4%), and a score of 0 (alert & conscious), i.e. 10 (26.3%) have a higher risk of UE as compared to the other scores. UE incident is also higher in a Glasgow coma scale (GCS) of 9T/15 (moderate response) i.e. 17 (44.7%) near to GCS of 10T/15 (responsive) i.e. 15 (39.5%) and lower incident if the GCS is low at 8T/15 (low response) i.e. 6 (15.8%). In terms of location of patients during extubation, almost all were at their bedside, i.e. 36 (94.7%), and only 2 (5.3%) occurred outside of the unit. UE most frequently occurs during the weaning process, i.e. 24 (63.2%). UE also most frequently occurs during the afternoon shift, i.e. 21 (55.3%) as compared to the morning shift and night shift. Higher incidents of UE are noted in the earlier days of intubation with 25 (65.8%) cases in less than five days. It is also higher when the patient appears agitated, i.e. 21 (55.3%). Patients who were diagnosed with respiratory disease (26.3%), septic shock (26.3%), and polytrauma (18.4%) also had a higher risk for UE.

There is no significant increased risk of UE when the nurse is not at the patients' bedside as 33 (86.8%) UEs occurred when a nurse is at their bedside and only 5 (13.2%) when a nurse is not. Similarly, UE incidents still happened when the nurse-patient ratio is at 1:1 i.e.36 (94.7%), and only 2 (5.3%) incidents occurred when the nurse-patient rate is at 1:2. The use of physical restraint also has no preventive effect as UE occurred on 7 (18.4%) patients who were restrained. Factors of whether the ETT is secured properly i.e.with tape (84%) or not (15.8%), whether the patient was on sedation 33 (86.8%) or not 5 (13.2%), and whether the ventilator tubing was supported with sidearm 21 (55.3%) or not 17 (44.7%) were found to be insignificant as well.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 2. Risk factor of unplanned extubation

Variable	All patients N= 300 n(%)	Planned Extubation N= 262 n(%)	Unplanned Extubation N= 38 n(%)
Gender			
Male	170(56.7)	147(56.1)	23(60.5)
Female	130(43.3)	115(43.9)	15(39.5)
RASS score			
-2 (light sedation)	1(0.3)	0(0.0)	1(2.6)
-1(drowsy)	5(1.7)	0(0.0)	5(13.2)
0 (alert & calm)	272(90.6)	262(100.0)	10(26.3)
+1 (Restless)	2(0.7)	0 (0.0)	2(5.3)
+2 (Agitated)	18(6.0)	0 (0.0)	18(47.4)
+3 (Very agitated)	2(0.7)	0 (0.0)	2(5.3)
Glascow Coma Scale during extubation			
10T/15 (Responsive)	277(92.3)	262(100.0)	15(39.5)
9T/15 (moderate response)	17(5.7)	0 (0.0)	17(44.7)
8T/15 (low response)	6(2.0)	0 (0.0)	6(15.8)
Location of patient during extubation			
At bedside	298(99.3)	262(100.0)	36(94.7)
Out of ICU (CT scan/OT)	2(0.7)	0(0.0)	2(5.3)
Situation when extubationoccured			
Weaning process	286(95.3)	262(100.0)	24(63.2)
During procedure	6(2.0)	0(0.0)	6(15.8)
Other Situation	8(2.7)	0(0.0)	8(21.1)
The nurse at bedside during event?			
Yes	295(98.3)	262(100.0)	33(86.8)
No	5(1.7)	0(0.0)	5(13.2)
Nurse:Patient Ratio			
1:1	298(99.3)	262(100.0)	36(94.7)
1:2	2(0.7)	0(0.0)	2(5.3)
Time of Extubation			
Morning shift	124(41.3)	112(42.7)	12(31.6)
Afternoon shift	171(57.0)	150(57.3)	21(55.3)
Night shift	5(1.7)	0(0.0)	5(13.2)

c. Comparison of Outcomes between Planned and Unplanned Extubation

The outcomes of patients post-extubation are shown in Table 3. Chi-square analysis was used to compare the post-extubation outcomes of the patients from both groups. Despite a higher percentage of adverse consequences in UE, the test shows that only some of the results show a significant difference, such as in complications with re-intubation (p=0.001), complications in post-extubation (p=0.001) and complications with tracheostomy (p=0.039).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

There are no significant differences in terms of length of ICU stay (p=0.057), length of hospital stay (p=0.082) and patient status at discharge (p=0.242).

Patients with UE recorded a higher percentage of re-intubation than patients with PE (60.5% vs. 11.1%). Meanwhile, 89% of the patients with UE developed complications post-extubation such as respiratory distress (65%), the trauma of mouth and trachea (21.1%) and aspiration pneumonia (2.6%), which is significantly higher as compared to patients with PE (23.7%). Although statistically, it showed that there were not a significant differences in regards to the length of ICU and hospital stay, the percentage showed that patients with PE had shorter ICU stays, i.e. less than seven days (64.9%) as compared to patients with UE (47.4%). Similarly, patients with UE had longer hospital stays of more than 14 days (63.2%) as compared to patients with PE (46.6%). Only 8.8% of the patients with PE required tracheostomy as compared to patients with UE (21.1%). There is no significant difference in terms of patient's status at hospital discharge between PE (90.8% alive, 9.2% dead) and UE (84.2% alive, 15.8% dead).

Table 3. Comparison of patient outcomes between PE and UE

Variable	**Planned extubation (%) n=262**	**Unplanned Extubation (%) n=38**	**Total n=300**	**Chi-Square test** X^2	**p**
Re-intubation				53.253	0.001
Yes	29(11.1)	23(60.5)	52(17.3)		
No	233(88.9)	15(39.5)	248(82.7)		
Complications post extubation				63.062	0.001
Yes	62(23.7)	34(89.5)	96(32.0)		
No	200(76.3)	4(10.5)	204(68.0)		
Respiratory distress	61(23.3)	25(65.8)			
VAP	1(0.4)	0(0.0)			
Trauma mouth & trachea	0(0.0)	8(21.1)			
Aspiration Pneumonia	0(0.0)	1(2.6)			
Length of ICU Stay				3.636	0.057
Less than 7 days	170(64.9)	18(47.4)	188(62.7)		
More than 7 days	92(35.1)	20(52.6)	112(37.3)		
Length of Hospital Stay				3.023	0.082
Less than 14 days	140(53.4)	14(36.8)	154(51.3)		
More than 14 days	122(46.6)	24(63.2)	146(48.7)		
Tracheostomy				4.153	0.039
Yes	23(8.8)	8(21.1)	31(10.3)		
No	239(91.2)	30(78.9)	269(89.7)		
Patient status at discharge				0.968	0.242
Alive	238(90.8)	32(84.2)	270(90.0)		

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Variable	Planned extubation (%) n=262	Unplanned Extubation (%) n=38	Total n=300	Chi-Square test X^2	p
Dead	24(9.2)	6(15.8)	30(10.0)		

4. Discussion

In general, this study revealed that the risk factors associated with UE were very significant with various factors. Whereas the post-extubation outcomes in patients that underwent UE were found to be poor as compared to that of PE. A higher risk of UE occurs during the weaning process (63.2%), as highlighted in the previous study that one-third of invasive mechanical ventilator time is devoted to the weaning process. An increased rate of liberation from MV over 48 hours among UE patients with MV modes were set lower during the weaning process as compared to those with PE [15], and extubation failure is usually associated with an increased risk of death and prolonged the ICU and hospital stays [16]. However, shorter intubation time can help in avoiding intubation related complications such as ventilator-associated pneumonia. Once extubated, the patient will be monitored on whether they can tolerate breathing without MV. Re-intubation will be considered in situations when the patient exhibits mental alteration, diaphoresis, tachycardia, tachypnea, agitation, and inability to cough or breathe normally as these symptoms signal that the patient is in danger of developing respiratory failure or arrest [17].

The result of this study also indicates that there is an increased risk of UE in males. This is consistent with the findings in many other studies that had indicated higher incidences of UE in males as compared to females [3,15,18]. Another risk factor leading to UE is a RASS score of +2 (agitated), as agitation combined with inadequate sedation and decreased patient surveillance could be a major risk factor of UE [19].

A higher Glasgow Coma Scale of 9T/15 (moderate response) is also associated with UE. Nevertheless, previous study shows that a higher GCS score above 10/15 is associated with successful extubation if the patient was able to maintain their airway clearance [20]. A higher risk of UE incident is recorded during the afternoon shift; however, a majority of other studies had reported incidents of UE during the night shift [5,8,9]. This could be due to the policy or practice of this hospital that prohibits the weaning off of patients during the night shift. Higher incidents of UE are also recorded during the earlier days of intubation (65.8%). There is limited evidence to support this finding from previous studies, but this can be explained when a comparison is made to the Acute Physiology and Chronic Health Evaluation (APACHE) score, which is used to determine the severity of a disease within the 24-hour admission of a patient into the ICU. The higher the APACHE score, the more severe the disease, and the higher the mortality rate. Unfortunately, the APACHE score was not recorded in this hospital, and therefore it could not be related to the finding.

Patients who were diagnosed with respiratory disease have a higher rate of experiencing UE, followed by septic shock and polytrauma. This finding is supported by previuos authors who reported that patients with respiratory diseases such as COPD were prone to experience self-extubation because they frequently receive prolonged MV with low ventilator setting and minimal amount of sedation[10]. This study showed no significant increased risk of UE when the nurse is not at the patient's bedside, when the nurse-patient ratio is more than 1:1, and when physical restraints were used (hand restraint). The use of physical restraints poses an increased risk of 3.11 times [11]. However, another author noted

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

that the use of physical restraint remains controversial as some studies found that it encourages UE while some found it helpful in reducing the risk factors in adults [19]. There are no differences in the risk of UE if the ETT is secured properly with tape when the patient is not on sedation and when the ventilator tubing was supported with sidearm.

The outcomes of this study show that there are significant differences in terms of complications with re-intubation, complications post-extubation and complications with tracheostomy, but no significant differences in terms of length of ICU stay, length of hospital stay and patient status upon discharge. The outcomes of UE include an increased number of re-intubations, increased number of post-extubation complications, increased number of tracheostomy insertions, and longer ICU and hospital stays, however no significant difference in terms of mortality rate similar to previous study who reported that the UE outcomes are more on re-intubation rates, poor ICU outcome at time of discharge, and longer ICU and hospital stays [5]. Patients who underwent UE have a higher percentage of re-intubation than patients who underwent PE. Another study stated that around 56% out of 75 patients who underwent UE required re-intubation which is associated with higher hospital costs, demands for more chronic care, and greater incidence of infection such as VAP. Mortality rate was reported significantly higher among patients requiring re-intubation than among those who do not [21] ; however there is no significant difference in the duration for re-intubation between the UE and PE groups as they were mostly re-intubated less than 6 hours within 24-hour of post-extubation.

UE can cause serious injuries to the patient's upper airway tract, aspiration of gastric substances to the respiratory system leading to severe hypoxia, consequently causing the development of respiratory failure. This current study found that 89% of patients who underwent UE developed complications post-extubation, which is significantly higher than patients who underwent PE (23.7%). The risk factors and outcomes of UE in the ICU as reported in other study include serious complications such as aspiration pneumonia, lethal arrhythmia, respiratory arrest, and cardiac arrest, which cause an increase in morbidity and mortality [8,23,24].

This study also shows that patients who underwent UE were recorded to have longer hospital stays (63.2%) as compared to patients who underwent PE (46.6%). The previous study had reported that patients who underwent UE had longer ICU stays and hospital stays [17]. The failed group also had a longer duration of mechanical ventilation as well as longer ICU and hospital stays, which was probably due to them not yet recovering sufficiently from their acute illnesses and not yet ready to begin the weaning trials. More patient who underwent UE required tracheostomy. However, there is no significant difference in terms of patient status upon hospital discharge between PE and UE whether they were alive or dead.

The researcher was unable to generalize the findings because the study sample represents only a small fraction of the extubated and mechanically ventilated patients in one ICU of one hospital. Therefore, further study should be conducted on a larger sample size in various institutions. The researcher was also unable to conduct investigations on nurses' knowledge, practice or experience on UE due to the retrospective nature of the study as information regarding the nurses' knowledge, practice or experience cannot be collected through previous records.

5 Conclusion

This study had attempted to study the risk factors and outcomes of UE which can serve as a platform for future researchers to come up with strategies to prevent or reduce the

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

occurrence of UE. The evidence from this study suggested that the risk factors associated with UE based on various factors were very significant and the outcomes were also poor. UE reflects the quality of services provided by the institution's staff, which is interpreted as not efficient. These poor outcomes also contribute to an increase in patients' morbidity as well as in the institutional cost of treatment thus, UE need to be acknowledged as a critical issue for ICU quality control and high priority should be emphasized on the effective management of MV patients with ETT, in order to improve patients' outcomes.

Further research could explore staff-related factors such as nurses' knowledge, practice, experience, and attitude i.e. whether or not they are associated with the occurrence of UE. Self-extubations had been reported most frequently during night shifts, in the care of nurses with less working experience and with a nurse-patient ratio of more than 1:2 [25]. This is quite distinct from the current study where UE mostly occurs during the afternoon shift and UE still occurs when there were adequate staffing, patient were sedated and when the nurses were at patient bedside. It would be interesting to find out why UE still occurs when there is adequate nurse-patient ratio. As this study was retrospective, no data was recorded on the nurses' experience or knowledge, hence further research could explore staff-related factors as a risk factors to UE pertaining to nurses knowledge, practice, experience and attitude.

Since most UEs occurred during the weaning process, future studies should focus on the weaning protocol from mechanical ventilator, particularly on its utilization and compliance to the protocol. A specific policy for sedation and weaning can be very helpful in managing intubated patients and preventing unintended harm. More emphasis should be placed on the correct timing to extubate patients. Patients should be extubated immediately once they fulfill the set criteria.

Finally, an interventional study on strategies to prevent UE should be incorporated in future researches with a focus on combating the higher risk factors. The prevention strategies should also include the utilization of standardized protocols including for weaning, sedation and pain management. Nursing intervention in the implementation of quality improvement programs for ICU patients during the weaning process should also be considered. Concentrated effort and proper action in implementing such interventions and quality improvement programs are highly needed to materialize any improvement in the outcomes of UE patients.

References

[1] McNett, M. and Kerber, K.: Unplanned Exubations in the ICU: Risk Factors and Strategies for Reducing Adverse Events, 22(7), 303–311(2015).

[2] Tong, M. G., Tay, L. L., Tan, C.C., Lim C. H. and Ismail, N. I: Malaysian Registry of Intensive care, Report for 2015, Clinical Research Centre, MOH(2015).

[3] da Silva, P.S.L. & Fonseca, M.C.M: Unplanned Endotracheal Extubations in the Intensive Care Unit: Systemic Review, critical appraisal, and evidence-based Recommendation. Anesthesia & Analgesia,114(5); 1003-1014(2012).

[4] Gao, F., Yang, L. H., He, H. R., Ma, X. C., Lu, J., Zhai, Y. J., … Zheng, J.: The effect of reintubation on ventilator-associated pneumonia and mortality among mechanically ventilated patients with intubation: A systematic review and meta-analysis. Heart and Lung: Journal of Acute and Critical Care, 45(4), 363–371. https://doi.org/10.1016/j.hrtlng.2016.04.006(2016).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[5] Kwon, E., & Choi, K.: Case-control Study on Risk Factors of Unplanned Extubation Based on Patient Safety Model in Critically Ill Patients with Mechanical Ventilation. Asian Nursing Research, 11(1), 74–78. https://doi.org/10.1016/j.anr.2017.03.004(2017).

[6] Chang, L. C., Liu, P. F., Huang, Y. L., Yang, S. S., & Chang, W. Y.: Risk factors associated with unplanned endotracheal self-extubation of hospitalized intubated patients: A 3-year retrospective case-controlstudy. Applied Nursing Research, 24(3), 188–192. https://doi.org/10.1016/j.apnr.2009.09.002(2011).

[7] Singh, P. M., Rewari, V., & Arora, M. K: A retrospective analysis of determinants of self-extubation in a tertiary care intensive care unit, 6–11. https://doi.org/10.4103/0974-2700.120363 (2013).

[8] de Groot, D., Groot, R. I. De, Dekkers, O. M., Herold, I. H. F., Jonge, E. De, & Arbous, M. S: Risk factors and outcomes after unplanned extubations on the ICU : a case-control study Risk factors and outcomes after unplanned extubations on the ICU : a case-control study, 19(January), 1–9(2011).

[9] Phoa, L. L., Pek, W. Y., Yap, W. S., & Johan, A. (2002). Unplanned extubation: A local experience. Singapore Medical Journal, 43(10), 504–508.

[10] Bouza, C., Garcia, E., Diaz, M., Segovia, E., & Rodriguez, I: Unplanned extubation in orally intubated medical patients in the intensive care unit: a prospective cohort study. Heart & Lung : The Journal of Critical Care, 36(4), 270–6. https://doi.org/10.1016/j.hrtlng.2006.10.002(2007).

[11] Chang, L., Wang, Kai-wei Katherine & Chao, Y. F: Influence Of Physical Restraint On Unplanned Extubation Of Adult Intensive Care Patients: A Case-Control Study, 17(5), 408–416(2008).

[12] Tripathi, S., Nunez, D. J., Katyal, C., & Ushay, H. M: Plan to Have No Unplanned : A Collaborative , Hospital-Based Quality-Improvement Project to Reduce the Rate of Unplanned Extubations in the Pediatric ICU, (8). https://doi.org/10.4187/respcare.03984(2015).

[13] Ministry of Health Malaysia MOHM: Management protocol in ICU, Anaesthesia Programme & Cawangan Kualiti Penjagaan Kesihatan, Bahagian Pembangunan Perubatan, Malaysian Society of Intensive Care(2012).

[14] World Medical Association: World Medical Association Declaration of Helsinki, Ethical Principle for Medical Research Involving Human Subjects, JAMA, 310(20) : 2191-2194 (2013)

[15] Chao, C. M., Sung, M. I, & Chen, C. M: Prognostic factors and outcomes of unplanned extubation, Scientific Report, Nature Publishing Group. 7:8636(2017)

[16] Pierucci, P. Carlucci, A., Schreibe, A. & Nave, S: Weaning from mechanical ventilation and post-extubation failure. Respiratory Intensive Care, 12:27-31(2011)

[17] Ismaeil, M. F., El-Shahat, H. M., El-Gammal, M. S., & Abbas, A. M. (2014). Unplanned versus planned extubation in respiratory intensive care unit, predictors of outcome. Egyptian Journal of Chest Diseases and Tuberculosis, 63(1), 219–231. https://doi.org/10.1016/j.ejcdt.2013.09.023

[18] Curry, K., Cobb, S., Kutesh, M. & Diggs, C: Characteristic associated with unplanned extubation in a surgical ICU. Am J. Crit. Care, 17: 45-5(2008)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[19] Kiekkas, P., Aretha, D., Panteli, E., Baltopoulos, G. I. & Filos, K. S. (2013) Unplanned extubation in critically ill adults: clinical review, Nurse Critical care, 18(3); 123-134.

[20] King, C. H., Moores, L. K. & Epstein, S. K: should patient be able to follow commands prior to extubation? Respiratory Care. 55(1):56-65(2010)

[21] Epstein, S. K: Decision to extubate. Intensive Care Med. 28(5): 535-546(2002)

[22] Lee, T. W., Hong, J. W., Ju, S., Lee, S. H., Lee, S. J., Cho, Y. J…….Kim, H. C: Unplanned extubation in patient with mechanical ventilation : Experience in the medical ICU of a single tertiary hospital. Turbecc Respir Dis (Seoul). 74(4): 336-340(2015)

[23] Beverly, A., Brovman, E. Y., Malapero, R. J., Lekowski, R. W. & Urman, R. D: Unplanned re-intubation following cardiac surgery: incidence, timing, risk factors, and outcomes, J Cardiothorac Vasc Anest, 30(6) ;1523-1529(2016)

[24] Tanios, M. A., Epstein, S. K., L ivelo, J., Mba, & Teres, D: Can We Identify Patients at High Risk for Unplanned Extubation ? A Large-Scale Multidisciplinary Survey, 55(5), 561–569(2010)

[25] Yeh, S. H., Lee, L. N., Ho, T. H., Chiang, M. C., & Lin, L. W: Implications of nursing care in the occurrence and consequences of unplanned extubation in adult intensive care units. International Journal of Nursing Studies, 41(3), 255–262. https://doi.org/10.1016/S0020-7489(03)00136-6(2004)

Acknowledgments

Director General Ministry of Health Malaysia, Universiti Teknologi MARA, Malaysia Clinical Research Centre Kota Kinabalu, Queen Elizabeth Hospital Kota Kinabalu, Madam Suzana Yusof, Dr Khiril Anuar, Dr Yen Chia How, Mr Jerry Liew, Dr Heric Corray, Dr Khoo Tien Meng, Madam Nadirah Sulaiman, Madam Tuminah Sabar and Madam Hanadibah Fuad.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Parents Management on Drug Therapy Among Children With Asthma

Noraini Hashim[1*], Erlisha Wendy Likimas[2], Rozila Latiff[3], Zuleha Abu Bakar[4]
{norainihashim1212@gmail.com[1], pcm810@hotmail.com, rozila@gmail.com[2]}

Centre for Nursing Studies, Faculty of Health Sciences, University Technology MARA, Malaysia

Abstract. Asthma is a chronic disease that commonly affects children's health. Medication compliance among children depends on the family's culture belief and their perceptions of the disease. This study aimed to identify parents' management of drug therapy among children with asthma and to determine the relationship between demographic data (parents' educational level and age of parents) with the management of childhood asthma. A cross-sectional study using Asthma Therapy Assessment Control questionnaire (ATAQ) was conducted in Hospital Selayang among 152 parents who had children with asthma. 74.3% participant was a mother and father represent 25.7%. The result of parent management on drug therapy among asthmatic children indicated poorly control 73.7%(n=112). No difference in mean between parent's age and children's asthmatic control (p=0.09). Parent educational level is not determined by the successful management of their asthmatic children. This show that the urgency need to organize an educational intervention program on asthma management for parents

Keywords: asthma, child, management, parent.

1 Introduction

Asthma is the most common chronic illness among children and about 235 million people suffer from asthma with 250,000 annual deaths attributed to the disease [1]. In Malaysia, 2 million are asthma sufferer and 90% had poor asthma control [2]. Asthma affects people regardless of any ethnic groups, various socio-economic levels and ages. Poor management of the illness can be caused by lack of knowledge, misconception about asthma and its treatment [3]. Childhood asthma is measured to be the most common chronic pediatric chest problem, which has an impact on children's quality of life [4]. Asthmatic children account for a large proportion of childhood hospitalization, healthcare visit, absenteeism from school and workdays missed by parents [5].

Parents of asthmatic children use many unsuccessful parenting strategies to manage their child's asthma [6]. In general, obedience is lower and morbidity higher if parents have low self-efficacy in manage the child's asthma, [7]when parents use ineffective parental problem-solving strategies [6] and when parents reduce their participation in their child's asthma management [8].

The purpose of this study is to identify parents' management in drug therapy among children with asthma at the range of age 1-12 years old. It is very important to address parents deal with a child with asthma as a child is not able to take care of themselves.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

2 Method

Study Design and Sample

A cross-sectional study design was conducted to identify and validate the parent's management on drug therapy among children with asthma Convenience sampling was used to select the sample among parents with asthmatic children aged between 1 to 12 years old. The inclusion criteria of the participants were those who came to the Selayang Hospital and outpatient clinic to get the treatment of asthma for their children from January 2016 until May 2016. Parent also must be able to converse in English. The exclusions criteria were parents with children who were admitted to the ward and diagnosed with other problems besides asthma.

Data Collection

All participants were given written informed consent before data collection. The participants were asked to answer the Asthma Therapy Assessment Questionnaire (ATAQ) that adapted from [9] in close-ended questions during admitted to the ward or visits to the outpatient clinic. The questionnaire consists of two sections which were demographic data and asthma therapy assessment. Participants have been given approximately 20 to 30 minutes answering the questionnaires and returned the completed questionnaires into the provided envelope and dispatch their completed questionnaires directly back to the researcher.

Instruments

ATAQ English version was used to measure parent management of their asthmatic children at home. The ATAQ instrument domains include asthma Control, Communication, Behaviour/ Attitude, Self-Efficacy, and Knowledge. Scores were obtained using 3 points Likert scale [9]. The results of the participants scored in 2-point scales (well-controlled and poorly controlled). "Well-controlled' was assigned if the parents' scored from 1 to 3. "Poorly controlled" was assigned if the parents' scored from 4 to 7. The Internal consistency reliability of each domain and the entire instrument was Cronbach's coefficient 0.9.

Data analysis

All data collected were processed and analyzed using Statistical Package for the Social Sciences (SPSS) version 16.0. Parents' management of drug therapy among children with asthma is used descriptive analysis. T-test and chi-square was used for comparison of asthma management scores and demographic data.

3 Results

Sample description

Hundred and fifty-two parents participated in this study. The majority of the participants were mothers 74.3% (n=113) and father represent the smallest group of participants which 25.7% (n=39). The mean (SD) age of the parents was 1.36 (0.48). The

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

range of age of parents involved in this study was between 18-35 years old, 61.8% (n=94), and age 36-55 years old, 38.2% (n=58).
In this study, parents are divided into two groups which were secondary educational level and tertiary educational level. The percentage of participants with the secondary educational levels was 63.8% (n=97), and the tertiary educational level was 36.2% (n=55).

Table 1. Describtive characteristic of participant (N=152).

	Weight %
Father	25.7
Mother	74.3
Age 18-35	61.8
Age 36-55	38.2
Education level	
Secondary	63.8
Tertiary	36.2

Asthma management

The overall mean score for asthma management (ATAQ) is 4.28. The score ranges from 1 to 7. The score is categorized into 1(1-3) = well-controlled and (4-7) = poorly controlled. The result shows that parent's management of drug therapy among asthmatic children is poorly controlled referred to as the ATAQ (n=112). From a hundred and fifty-two parents, only forty parents are able to control well of their children's asthma.

Table 2. Asthma management score.

		ATAQ
	N	%
Well-controlled	40	26.3
Poorly control	112	73.7

Parent's age and child asthma management

From this study, the mean value for parent's age is 1.36. The finding shows that there is no mean difference between parent's age and ATAQ, p=0.09 (p>0.05).

Table 3. Relationship between parent age and child asthma management.

Variable	Mean (SD) score		t statistic	*p* value
	18-35	36-55		
ATAQ	1.78 (0.42)	1.65 (0.48)	1.70	0.09

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Parent educational level and child asthma management

The finding indicates that there is no difference between the parent's educational level and ATAQ, p=0.86 (p >0.05). Hence, parents' management of drug therapy among children with asthma is not associated with parents' educational level..

Table 4. Association between parent educational level and child asthma management.

Variable	ATAQ, n(%)		X^2 (df)	*p* value
	Well control	Poorly control		
Educational level			0.03 (1)	0.86
Secondary	26 (26.8)	71 (73.2)		
Tertiary	14 (25.5)	41 (74.5)		

4 Discussion

The objective of this study is to identify parents' management of drug therapy among children with asthma using ATAQ. In this study, the result has demonstrated that the majority of respondents are female respondents (female, 74.3% and male, 25.7%).This same with study in Saudi Arabia which mother is more closed with their children compared to the father [3]. This study focuses on children aged between 1 to 12 years old because children in this range of age have higher of poorly controlled asthma compared to children with well-controlled asthma [7]. Our result revealed when asked the parent about the condition of their asthmatic children in the last 4 weeks used ATAQ, indicated parent management of drug therapy among children with asthma was poorly control. It shows probably in this study that parents may have a lack of knowledge about asthma management at home. Children who have poor asthma control measured by ATAQ had a higher rate of hospitalization[10]. In addition based on the result of this study, there is no difference between the age of parents and their asthmatic children drug management at home (p=0.09). This consistent with another study [10], suggested parents who have long exposure to asthma prone to give better management of asthma and is not related to their age. Regarding parent's educational level in this study are not determinate the better management of drug therapy their asthmatic children (p=0.86). In contrast, higher parental education was found to reduce the risk of uncontrolled asthma [11]. It shows parent in this study may have the same knowledge about asthma irrespectively to their level of education.

5 Conclusion

In conclusion, this study shows that parents' management of drug therapy among children with asthma in Malaysia is poorly controlled. In addition, parent's age and parent's educational status are not determined by the better management of their asthmatic children. Therefore there is urgency needs to organize educational intervention program on asthma management for parents. In future written asthma plans should be discussed with the parent for better child asthma management. As a limitation of this study, in the future, ATAQ should

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

translate into Malay version to make it easier for parents with asthmatic children to understand the questionnaire.

Acknowledgments

My deepest thanks to Hospital Selayang ethic comittee who was very helpful and give approve to conduct this research. Thanks to everyone, those have been contributing by supporting the work and help during the beginning until the study completed.

References

[1] W. H. Organization, "10 Facts on Asthma," *WHO*, 2011. [Online]. Available: https://www.who.int/features/factfiles/asthma/en/.

[2] A. Malaysia, "No Title," 2019. [Online]. Available: http://www.asthmamalaysia.org/. [Accessed: 13-May-2019].

[3] A. K. Abu-Shaheen, A. Nofal, and H. Heena, "Parental Perceptions and Practices toward Childhood Asthma," *Biomed Res. Int.*, vol. 2016, 2016.

[4] L. G. S. . Ferrante G, "The Burden of Pediatric Asthma," *Front Pediatr*, vol. 6, p. 186, 2018.

[5] H. Elshazly, I. El Mahalawy, H. Gabr, S. Abd El Naby, and E. Elzoghby, "Quality of life among asthmatic children attending the Outpatient Clinic in Menoufia University Hospital," *Menoufia Med. J.*, 2015.

[6] A. Morawska, C. Gregory, and S. Burgess, "Parental beliefs about behaviour problems of their asthmatic children and interventions to support parenting," *Journal of Child Health Care*. 2012.

[7] J. Zhao *et al.*, "The knowledge, attitudes and practices of parents of children with asthma in 29 cities of China: A multi-center study," *BMC Pediatr.*, 2013.

[8] E. L. McQuaid *et al.*, "Pediatric asthma morbidity: The importance of symptom perception and family response to symptoms," *J. Pediatr. Psychol.*, 2007.

[9] E. A. Skinner *et al.*, "The asthma therapy assessment questionnaire (ATAQ) for children and adolescents," *Dis. Manag.*, vol. 7, no. 4, pp. 305–313, 2004.

[10] G. B. Diette, S. Sajjan, E. A. Skinner, T. W. Weiss, A. W. Wu, and L. E. Markson, "Using the pediatric asthma therapy assessment questionnaire to measure asthma control and healthcare utilization in children," *Patient*, 2009.

[11] F. Strömberg Celind, G. Wennergren, S. Vasileiadou, B. Alm, N. Åberg, and E. Goksör, "Higher parental education was associated with better asthma control," *Acta Paediatr. Int. J. Paediatr.*, vol. 108, no. 5, pp. 920–926, 2019.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Exercises as a Hand Rehabilitation on Poststroke Muscle Strength by Modified Sphygmomanometer Test

Novita Elisabeth Daeli[1]
{email: novita_daeli@ukmc.ac.id}

[1]Nursing Science Study Program
Faculty of Health Science, Musi Charitas Catholic University

Abstract. Stroke is a disease that effects of arteries leading to and within the brain. Poststroke patients have may experience like a loss of motor function and may cause impaired mobility. Hand open exercises could increase the strengthening muscles of hand function on poststroke patients. This research aims to determine the effectiveness of Hand Open exercises on muscle strength, a modified sphygmomanometer test (MST), as a measurement method. This research design used quasi-experimental design. The number of samples is 90 respondents with the sampling technique used purposive sampling. Most respondent of this study has age (55-65 years) that 38.9% and female is 56.7%. Different paired test results showed a significant increase in muscle strength before and after intervention p=0.000 (<0,05). The result of the independent different test has a significant increase in muscle strength between the hand open intervention group and the control group with p=0,000 (<0,05). Hand rehabilitation intervention has an effect on the increase of muscle strength, the modified sphygmomanometer test (MST) method, as many 45,1%. It means that hand open can be increased muscle strength of poststroke patients and this research recommends further study as nursing self-care interventions in nursing care.

Keywords: hand open, stroke, muscle strength, Modified Sphygmomanometer Test (MST).

1 Introduction

Stroke is a disorder of the nervous system that occurs because there is no blood flow through the arterial supply system in the brain [1]. Stroke is divided into two classifications, namely, hemorrhagic stroke and ischemic stroke. Stroke is caused by risk factors such as smoking and drinking alcohol, lack of exercise, hypertension, age, diabetes, and heart disease can also affect stroke [2]. The brain is very sensitive to the condition of decreased or restored blood supply. Hypoxia can cause cerebral ischemia so the brain cannot use anaerobic metabolism if there is a lack of oxygen or emissions [3].

Stroke is the second most common cause of death worldwide and causes major disability. Worldwide, the number of deaths caused by stroke is increasing every year. According to the American Hearth Association/American Stroke Association (AHA/ASA) in 2017 said that there are 6 million stroke patients every year. In Indonesia, the prevalence of stroke increased from 8.3 per 1,000 in 2007 to 12.1 per 1,000 in 2013 [6]. Patients with strokes may have experienced with physical need problems, impaired mobilization, defecate and urination problems, depression, and anxiety. All these problems must be dealt with immediately [7].

In the acute phase, the first symptom of stroke disease is hemiparesis and decreased tendon reflexes, when the tendon reflexes reappear (usually 48 hours), muscle tone increases too. Hemiparesis is a common problem that can cause disability. The exercise can be used to increase cerebral blood flow, minimize disability due to stroke, and can improve sensory-motor [8]. Hemiparesis can cause a limited range of motion and upper extremity functions [9]. Limitations of movement in the upper limb make sufferers difficult to perform activities of daily living and this is directly related to the functions and movements of the upper limb [10,11]. Therefore, the improvement in motor skills of the upper limb is needed through a rehabilitation program in stroke patients [12].

Hand rehabilitation exercise is one of the exercises that used to increase muscle strength in stroke patients. For stroke patients, movement exercise interventions are very important to improve functional abilities, restore functional abilities such as self-care independence and carry out activities of daily living. The impaired motor function, specifically the muscle strength scale in this study, was measured by using the Modified Spygmomanometer Test (MST) technique. This assessment technique is based on the adaptation of the conventional sphygmomanometer, and this tool is easily available because it is often used as a blood pressure measurement tool by health professionals [13]. The goal of this study is to increase muscle strength as rehabilitation for post-stroke patients.

2 Method

The study design used a quasi-experimental with pretest and posttest design. Muscle strength scale data were collected before and after the intervention. Samples in this study were 90 respondents divided into two

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

groups namely the intervention group and the control group of stroke patients. The data were collected on April-June 2018. Further, this research employed total sampling techniques. The sample criteria include the willingness to participate, no permanent disability, the history of stroke at least 3 months after the first attack and adulthood [14]. The interventions carried out were hand open exercise once a day for four weeks. Muscle strength was assessed before and after doing the exercise by using the Modified Sphygmomanometer Test (MST). The measurement of muscle strength, specifically the handgrip, was conducted by positioning the patient in a sitting position and hands raised by forming an angle of 900 (no pedestal), the cuff pump shows a number (up to 20 mmHg) and the patient is encouraged to apply pressure to the cuff roll for 5 seconds, carried out 3 times and the last result will be used as an evaluation of muscle strength. The results of exercises that have increased to only 2 mmHg from the results of the pretest strength test are called significant [13,15].

3 Result

Table 1 Frequency Distribution of Respondent Characteristics

Characteristics	Frequency	Percentage (%)
Age		
20-35 years old	0	0
36-45 years old	3	3
46-55 years old	22	24,4
56-65 years old	35	38,9
> 65 years	30	33,3
Gender		
Male	39	43,3
Female	51	56,7
Length of Suffering Stoke		
First 3 months	54	60
3 months - 1 year	21	23,3
> 1 year	15	16,7
Body Mass Index		
Underweight	2	2,2
Normal	25	27,8
Overweight	52	57,8
Obesity I	9	10,0
Obesity I	2	2,2

Table 1 shows the characteristics of respondents by age are the majority of the group 56-65 years as much as 38.9%. Regarding gender, the majority is female, as many as 51 people (56.7%). The number of respondents who suffered a stroke in the first 3 months was 54 (60%), and the majority body mass index was overweight, that is, 52 (57.8%).

Table 2. Muscle Strength Differences between Before and After the Interventions

Muscle Strength	Pre-Post Test		P-value
	Frequency	Percentage (%)	
Significant	52	77,6	0,000
Not Significant	15	22,4	

Based on table 2, the difference in the average level of muscle strength by using the measurement of the Modified Sphygmomanometer Test (MST), before and after the Hand Open Exercise interventions, demonstrates that the Wilcoxon test results are significant with p = 0,000 (p <0.05). It means that there are significant differences in muscle strength before and after Hand Grip interventions.

Table 3. Respondents' Muscle Strength Differences After the Interventions in the Intervention and Control Groups

Muscle Strength	Interventions Groups		Control Groups		p-value
	Frequency	Percentage (%)	Frequency	Percentage (%)	
Significant	52	77,6	0	0	0,000
Not Significant	15	22,4	23	100	

Table 3 demonstrates the difference in the average level of muscle strength with the measurement of the Modified Sphygmomanometer Test (MST) after the Hand Rehabilitation Exercise intervention in the

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

intervention group and the control group. The result is that the value of the Mann-Whitney U test is significant, with p = 0,000 (p <0.05). It means that there are significant differences in muscle strength in the intervention and control groups.

Table 4. The Effect of Hand Rehabilitation Intervention toward Muscle Strength Changes

	Parameters Estimates		
Independen Variabels	Estimate	P_{value}	Cox and Snell
(Muscle strengtf after interventions=1,00)	22,622	0,000	0,451
Age	,025	0,941	
Gender	,498	0,420	
Length of Suffering Stoke	,227	0,595	
Body Mass Index	,682	0,153	
Hand Open Interventions	20,779	0,000	

Based on table 4, the intervention of Hand Rehabilitation Exercises has a significant effect on changes in muscle strength by using the Modified Sphygmomanometer Test for stroke patients. Further, the p value on the variables of age, sex, length of suffering, and BMI does not have a significant effect on changes in muscle strength (p-value > 0.05). Besides, the variable of Hand Open Exercises intervention contributes to the muscle strength variable by 45.1%, the remaining 54.9% is explained by the variables outside the model or variables not examined in this study.

4 Discussion

Muscle nervous innervated by different motor neurons. One motor neuron can supply some muscle fibers, but each muscle fiber is only supplied by one motor neuron. When motor neurons are activated, all the muscle fibers supply is stimulated to contract simultaneously. This functional unit is called a motoric unit.

Hand open exercises are a modality for sensory stimulation of smooth touch and pressure on the receptors capsules in the upper limb. The response will be conveyed to the sensory cortex in the brain's sensory pathway through the cell body in the C7-T1 nerve directly through the limbic system. Existing processing of stimuli gives a rapid response to the nerves to act on these stimuli. This mechanism is called feedback. Sensory of stimuli and pressure will be processed in the sensory cortex, which then impulses are distributed in the motor cortex. This process then leads to muscle movements in the upper limb. This mechanism is called feed-forward control in response to pressure stimuli and the smooth touch of rubber balls and objects on the hands[3,12].

The problem experienced by stroke patients is movement disorders. Patients have difficulty, especially in carried out activities using the upper extremity due to interference with muscle strength. Stroke patients have an experience disorders of the central nervous system that controls and triggers the motion of the neuromusculoskeletal system. Movement training for stroke patients is a prerequisite for achieving patient independence. Because exercise helps the hand function gradually return to or near normal, and give strength to the patient to control life. The training given is adjusted to the patient's condition, and the main target is awareness to make movements that can be controlled properly. A further mechanism is the adaptation of the nervous system, resulting in hypertrophy of muscle fibers, which can increase muscle mass, especially if routine physical exercise is carried out [23].

The grip strength can be evaluated by using a dynamometer [13]. However, the modification of the sphygmomanometer test can be conducted with the aim of providing a more objective measure and lower costs. The study was conducted on stroke patients who experienced hemiparesis. The results showed that there was a significant correlation in the muscle strength assessment of stroke patients by using a modified sphygmomanometer with a p-value of 0.05. In multivariate analyzed using ordinal logistic regression, the results showed Cox and Snell values of 0.451, which means the intervention contributed to muscle strength by 45.1%, the remaining 54.9% is a variable that has not been examined in this study. The measurement of muscle strength by the sphygmomanometer modification method has the potential to be used in a clinical context because it uses portable, easily accessible, low-cost equipment and can be used by health professionals because of its ability to provide objective measurements [16]. In addition to providing an objective, reliable, and valid measurement of strength, MST is also feasible because an aneroid sphygmomanometer used for muscle strength assessment is easily found worldwide, and is commonly used by health professionals [17]. Muscle strength is a top priority in the rehabilitation of stroke patients, especially in the upper extremities which have very complex functions [1,19].

After four weeks of intervention, there was a significant difference in the effect on the muscle strength of stroke patients. The result of the study showed that, 47% of patients have muscle strength in the first exercises (pre experiment), and after four weeks exercises (post experiment), theres was a significant increase in

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

muscle strength over 50% [22]. The exercise is conducted in one session for four weeks and the overall role of the fingers and the grasping function in the area experiencing hemiparesis is performed simultaneously [21]. Providing hand rehabilitation exercises is a modality for sensory stimulation of the subtle touch and receptor pressure on the upper limb. Impulses are delivered to muscle cells through the neuromuscular motor endplate, and then muscle movements will occur in the upper extremities. This mechanism is called feed-forward control in response to pressure stimuli and the smooth touch of rubber balls and objects in the hands [12]. Based on this, the researchers assume that the recruitment of muscle contractions in this study is not just one technique so that the active muscle fibers are also more numerous and complex. The implementation of consecutive exercises for four weeks also increases the activity of each muscle cell so that there is a significant increase in muscle strength.

5 Conclusion

In this study, muscle strength in the measurement method experiences has significant results to increase patient's self-care abilities such as bathing, tooth-brushing, changing clothes, and toileting. The nursing theory in this study forwards to Orem's Theory, which focuses on self-care and emphasizes self-care needs by nurses, individuals, or both. Nursing has an important role in helping individuals who have problems in personal needs because self-care is not only the responsibility of the patient but also the responsibility of the nurse. Nurses play a role as facilitators to help patients who experience self-care deficits, so that patients may optimize themselves in their self-care efforts. With an increase in muscle strength and improvement in individual patients, especially patients with stroke, the patient may be responsible for minimal activities that help in meeting their daily needs.

References

[1] Price, & Wilson. (2012). *Konsep Klinis Proses-Proses Penyakit Edisi 6. Vol.2.* Jakarta: EGC.

[2] Ignatavicius, D. D., & Workman, M. L. (2010). *Medical surgical nursing: Patient centered collaborative care.* St. Louis: Elsevier Saunder.

[3] Black & Hawks. (2014). *Medical Surgical Nursing: Clinical Management for Positive Outcame*. Saunders: Elsevier.

[4] World Health Organsation. Global Report Non Noncommunicable Diseases. Geneva: WHO Press; 2014.

[5]Hewitt, J., Castilla Guerra, L., Fernández-Moreno, M. del C, et al., Diabetes and stroke prevention: a review. Stroke Res Treat. 2012;673187).

[6] Riskesdas. Badan-Penelitian-Dan-Pengembangan. Riset Kesehatan Dasar. Jakarta; 2013.

[7] Nelson MLA, Hanna E, Hall S, Calvert M. What makes stroke rehabilitation patients complex? Clinician perspectives and the role of discharge pressure. J comorbidity. 2016;6(2):35–41

[8] Rhestifujiayani, E., Huriani E., dan Muharriza. 2015. Comparison of Muscle Strength in Stroke Patients between The Given and Not Given Range of Motion Exercise. *Nurse Media Journal of Nursing*. 5(2). 88-100.

[9]Kim, Hyun Ju, Lee, Yaelim, Sohng, K.-Y. (2014). *Effects of Bilateral Passive Range of Motion Exercise on the Function of Upper Extremities and Activities of Daily Living in Patients with Acute Stroke.*

[10] Bae JH, Kang SH, Seo KM, Kim DK, Shin HI, Shin HE. Relationship between grip and pinch strength and activities of daily living in stroke patients. *Ann Rehabil Med*. 015;39(5):752e762

[11] Bertrand AM, Fournier K, Wick Brasey MG, Kaiser ML, Frischknecht R, Diserens K. Reliability of maximal grip strength measurements and grip strength recovery following a stroke. *J Hand Ther.* 2015;28(4):356e363

[12] Park, S., & Joo-Young Park. 2016. Grip strength in post-stroke hemiplegia. *J Phys Ther Sci*. 28(2): 677–679

[13] Martins, J. C., Aguiar, L. T., Lara, E. M., Teixeira-Salmela, L. F., & Faria, C. D. C. de M. (2014). *Assessment of grip strength with the modified sphygmomanometer test: Association between upper limb global strength and motor function. Brazilian Journal of Physical Therapy*, *19*(6), 498–506. https://doi.org/10.1590/bjpt-rbf.2014.0118

[14] Sullivan J, Girardi M, Hensley M, et al. Improving arm function in chronic stroke: a pilot study of sensory amplitude electrical stimulation via glove electrode during task-specific training. Top Stroke Rehabil. 2015;22(3): 169e175

[15] Silva, S. M., Corrêa, F. I., Silva, P. F. C., Silva, D. F. T., Lucareli, P. R. G., & Corrêa, J. C. F. (2015). *Validation and reliability of a modified sphygmomanometer for the assessment of handgrip strength in Parkinson???s disease. Brazilian Journal of Physical Therapy*, *19*(2), 137–145. https://doi.org/10.1590/bjpt-rbf.2014.0081

[16] Souza, L. A. C., Martins, J. C., Moura, J. B., Teixeira-Salmela, L. F., De Paula, F. V. R., & Faria, C. D. C. M. (2014). *Assessment of muscular strength with the modified sphygmomanometer test: what is the best method*

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

and source of outcome values?, *Brazilian Journal of Physical Therapy*, *18*(2), 191–200. https://doi.org/10.1590/S1413-35552012005000149

[17] Aguiar, L. T., Lara, E. M., Martins, J. C., Teixeira-Salmela, L. F., Quintino, L. F., Christo, P. P., & Faria, C. D. (2016). *Modified sphygmomanometer test*, *52*(5), 637–649.

[18] Barzel A, Ketels G, Stark A, et al. Home-based constraint-induced movement therapy for patients with upper limb dysfunction after stroke (HOMECIMT): a cluster-randomised, controlled trial. *Lancet Neurol*. 2015;14(9):893e902.

[19] Corbetta D, Sirtori V, Castellini G, Moja L, Gatti R. Constraint-induced movement therapy for upper extremities in people with stroke. *Cochrane Database Syst* Rev. 2015;10:CD004433

[20] Wahyuningsih, I. (n.d.). (2013). *Pengaruh Range Of Motion Aktif (Cylindrical Grip) Terhadap Kekuatan Otot Ekstremitas Atas. 1*, 0–15

[21] Vinstrup J.,Calatayud J,et al. Hand strengthening exercises in chronic stroke patients: Dose-response evaluation using electromyography. *Journal of Hand Therapy*. 2016;xxx (1-10).

[22] Bertrand, A. M., Fournier, K., Wick Brasey, M.-G., et al. Reliability of maximal grip strength measurements and grip strength recovery following a stroke. *Journal of Hand Therapy*, (2015). *28*(4), 356–363. https://doi.org/10.1016/j.jht.2015.04.004

[23] Speed, C. A., & Campbell, R. Mechanisms of strength gain in a handgrip exercise programme in rheumatoid arthritis. *Rheumatology International*. (2012). *32*(1), 159–163. https://doi.org/10.1007/s00296-010-1596-x

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Standard Precautions: Knowledge and Practice among Nursing Students in UiTM Puncak Alam

Roswati Nordin[1], Nur Aimuni Zulkiflee[2], Mohd Bakri Jali[3], Puteri Nurhidayah Ismail[1], Nurul Farah Dalila Mohd Asmadi[1]
{ roswati2809@uitm.edu.my[1], munii_nur95@yahoo.com[2], mbakrijali@sirim.my [3]}

Centre for Nursing Studies[1,2], Faculty of Health Sciences, Universiti Teknologi MARA (UiTM) Puncak Alam Campus, Malaysia.SIRIM Bhd, Shah Alam Selangor, Malaysia[3]

Abstract. Standard Precautions are infection control practices to reduce the risk of acquiring the occupational infection when handling equipment and devices contaminated with any infectious. Nursing students were exposed early in hospitals environment and activities during their clinical attachment with an unknown infection status due to their lack of experience in performing a procedure. The purpose is to determine the knowledge and practice of Standard Precautions among nursing students in UiTM Puncak Alam. A cross-sectional design was used using Standard Precautions knowledge and practice questionnaire, then analyzed using SPSS version 21. The findings revealed that nursing students were having a good and moderate level of knowledge and practice towards the standard precautions. Further studies should be conducted to identify the factors contributing to the risk of transmission of microorganisms that may lead to occupational exposure infections during their clinical attachment.

Keywords: knowledge, nursing students, occupational infection, Practice, Standards Precautions.

1 Introduction

The US Centre for Disease Control and Prevention (CDC) recommended blood and body fluid precautions when a patient was known or suspected to be infected with bloodborne pathogens. Regardless of patient infection status, the precautions must be consistently used because people that had infected with blood-borne pathogens cannot be visibly recognized or verified via medical history and physical examination [1]. This is referred to as “universal blood and body fluid precautions” or “universal precautions.” In 1996, the CDC changed the universal precautions to “Standard Precautions (SPs)” [2].

Studies on Standard Precautions are increasing over the world to protect healthcare workers (HCWs) from infection of microorganisms that can cause morbidity and mortality [2]. Standard Precautions are infection control practices to reduce the risk of acquiring the occupational infection when handling equipment and devices that are contaminated with blood, body fluids, secretions, and excretions except for sweat and non-intact skin (including rashes), and mucous membranes in the healthcare setting [3]. Standard Precautions have two objectives, which are to protect HCWs from percutaneous injuries and to prevent the transmission of nosocomial infection. HCWs are constantly exposed to microorganisms including exposure to blood-borne infections such as HIV and hepatitis B and C virus (HBV and HCV) infection from sharps injuries and contact with body fluid as they perform their clinical activities in a hospital [4].

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The World Health Organization (WHO) estimates that about 2.5% of Human Immunodeficiency Virus (HIV) infection cases, 40% of Hepatitis B Virus (HBV) infection cases, and Hepatitis C Virus (HCV) infection cases among HCWs worldwide are the result from these exposures. Therefore, it is crucial to prevent these exposures of infection. Standard Precautions include hand hygiene, use of gloves, and other barrier protectors like masks, eye protection, face shield, gown, and safe injection practices, safe handling of contaminated equipment or surfaces in the patient environment [5].

However, practice among nurses is reported as "poor" and "lacking." In England, Wales and Northern Ireland, lack of Standard Precautions practice remained as the major contributing factor of occupational exposure among nurses [4]. Nurses who were working in the operating room need the training to increase their practice on Standard Precautions. Other than that, nursing students also are in close contact with patients having blood-borne infections and injuries due to accidental contamination during their clinical attachments [5]. Proper practices toward these infections of nursing students are the cornerstone of preventing the spread of blood-borne infections [6].

Nursing students are at high risk of exposure to occupational infection because they are required to provide care to patients admitted with an unknown infection status [7]. Due to their lack of experience in performing a procedure, nursing students are at risk of exposure to bloodborne pathogens [3]. Other studies observed that better knowledge of Standard Precautions among HCWs was one of the predictors of better practice. Knowledge of Standard Precautions by HCWs may be influenced by their type of training. Strict observance on Standard Precautions ensures that HCWs are protecting against infection. Other factors that contribute to poor practice on Standard Precautions include lack of understanding and knowledge on how to properly use protective barriers, lack of time, lack of resources, and lack of proper training [5].

Similarly, in Malaysia, high cases of needle stick injuries among the HCWs in a public training hospital in Negeri Sembilan was significantly correlated with poor practice on Standard Precautions [1]. Nurses, the largest group of HCWs that provide the most significant portion of care to patients, were found to be the profession that reported most cases of occupational exposure. It indicates poor practice on Standard Precautions guidelines among nurses. Besides, a study conducted by nurses in Hospital Universiti SainsMalaysia revealed the poor practice of glove used for nine different procedures. Therefore, the purpose is to determine the knowledge and practice on Standard Precautions among nursing students in UiTM Puncak Alam.

2 Method

This study used a cross-sectional research design. The study setting was at the Faculty of Health Sciences in UiTM Selangor, Puncak Alam Campus. The researcher used stratified random sampling as a sampling design with inclusion and exclusion criteria. The population size for this study was 264. Regarding Krejcie and Morgan for population size (N) of 270, the sample size (*n*) was 159 [8].

The simple random method was used to identify the exact number of respondents in this study. Each name from the name list of 264 nursing students was placed in a bowl and mixed thoroughly. Then the researcher blindly picked 159 names from the bowl. All the names chosen by the researcher were identified as the respondents in this study.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Study Instrument

Self-reported Questionnaire on Standard Precautions Knowledge and Practice developed by Askarian et al.,[9] was used. The questionnaires consisted of four parts. Part A included the standard questions to gather a respondent‟s general information. Part B was regarding the experience of respondents, part C consisted of the questions about knowledge, and part D was regarding the practice on Standards Precautions.

Standard Precautions knowledge questions were developed by Askarian with modifications, covering 19 items, with possible responses of „Yes‟ and „No‟. „Yes‟ is given a value of 1 point, and „No‟ is given a value of 0 points; the maximum possible score is 19[9]. The higher the score, the greater the knowledge on Standard Precautions. The validity of the expertise judgments on Standard Precautions questions is 0.98; reliability is Cronbach‟s Alpha (α) was 0.92.

From the previous study by Swe & Bhardwaj, student‟s knowledge was summed up by transforming it into knowledge score and grouped into three levels such as poor knowledge level, moderate knowledge level, and good knowledge level according to individual values [9]. Poor knowledge level was decided as a score of less than 33.3% of the individual total score which is 1 to 6 of total values. The moderate level was marked as a score between 33.3% and less than 66.6% of the individual total score which is 7 to 12 of total values. Good knowledge level was decided to score more than or equal to 66.6% of the individual total score which is 13 to 19 of total values.

Practice on Standard Precautions was determined using the Standard Precautions questionnaires also developed by Askarian et al., [10] with modifications. There were 19 practice items with a scale of 0–3 points: 0 = never, 1 = sometimes, 2 = usually, and 3 = always, giving a score range of 0–57. The higher the score, the better that person carries out the Standard Precautions practice. From the previous study, the respondents were asked 19 questions to assess their overall Standard Precautions practice [11]. Considering the practice mean score of the respondent‟s answers, those nursing students reported to performed less than the mean value out of 19 as “poor” which were 1 to 19 of total values. Next, nursing students were reported to perform more than 19 of total values and less than 38 of total values which were 20 to 38 as “moderate”. Lastly, nursing students reported performing equal or greater than 39 of total value which was 39 to 57 as “good”.

Respondents that practice the specific component on Standard Precautions every time without any interruption considered as “always”, those individuals practice many times considered as “sometimes”, those individuals that practice once or two times considered as “usually” and those individuals that did not used the specific practice at any time or at any occasion considered as “never practice”. Ethical approval obtained from the Human Resource Ethics committee UiTM Selangor, Puncak Alam Campuses.

Data Analysis

The data from the questionnaire were coded and entered a computerized database and analyzed using SPSS, version 21. Frequencies, percentages, mean and median were used for analyzing the selected socio-demographic data and assessing the level of knowledge and level of practice on Standard Precautions among nursing students.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

3 Result

Demographic Distribution

Demographic data that have been asked in the early part of the questionnaire were analyzed using descriptive statistic tests. The total number of respondents (*n*) and percentage of the demographic data were obtained by using SPSS version 21.0 and tabulated in Table 1. As shown in Table 1, almost half of the respondents (45.9%, *n*=73) were 20 years old. A quarter of the respondents (25.8%, *n*=41) were 19 years old, whereas (17.6%, *n*=28) of the respondents were 21 years old. While the least number of respondents who participated in this research study was 22 years old, which is (10.7%, *n*=17), next, most of the respondents were female (93.7%, *n*=149). On the other hand, the least respondents who participated in this research study were male, which only (6.3%, *n*=10). Then, more than half of the respondents were from the diploma level (53.5%, *n*=85). The remaining respondents of this research study were from degree level (46.5%, *n*=74). Whereas, most of the respondents came from semester 2 and 4 (44%, *n*=70) and (45.3%, *n*=72) respectively. The rest of the respondents of this research study comes from semester 6 (10.7%, *n*=17).

Table 1. Socio-demographic data of respondents

Variable	Frequency (*n*)	Percentage (%)
Age		
19 years old	41	25.8
20 years old	73	45.9
21 years old	28	17.6
22 years old	17	10.7
Gender		
Male	10	6.3
Female	149	93.7
Level of education		
Diploma	85	53.5
Degree	74	46.5
Semester		
Semester 2	70	44.0
Semester 4	72	45.3
Semester 6	17	10.7

The Level of Knowledge on Standard Precautions among Nursing Students

Table 2 presented the total number of respondents (*n*) and percentage with their frequency of level of knowledge on Standard Precaution among nursing students according to each category. The rate was categorized into a poor, moderate and good level of knowledge. As shown in table 4.5, most of the respondents (94.3%, *n*=150) were categorized in a good level of knowledge on Standard Precautions. While only (5.7%, *n*=9) were in the moderate knowledge category. Whereas, none of the respondents (0.00%, *n*=0) were categorized into

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

poor category regarding the level of knowledge on Standard Precautions.

Table 2. The level of Knowledge on Standard Precautions among respondents

level of knowledge	Frequency (*n*)	Percentage (%)
Poor	0	0.0
Moderate	9	5.7
Good	150	94.3

The Level of practice on Standard Precautions among Nursing Students

Table 3 presented the total number of respondents (*n*) and percentage with their frequency of level of practice on Standard Precaution among respondents according to each category. The rate was categorized into a poor, moderate and good level of practice. Most of the respondents (95.6%, *n*=152) were categorized as a good level of practice on Standard Precautions. While only (4.4%, *n*=7) were in the moderate practice category. Whereas none of the respondents (0.00%, *n*=0) were categorized into a poor category regarding the level of practice on Standard Precautions.

Table 3. The level of Practice on Standard Precautions among respondents

Category of the level of practice	Frequency (*n*)	Percentage (%)
Poor	0	0.0
Moderate	7	4.4
Good	152	95.6

4 Discussion

The Level of Knowledge on Standard Precautions among Nursing Students in UiTM Puncak Alam.

Results from the study revealed that the majority of nursing students UiTM Puncak Alam had a good level of knowledge on Standard Precautions. The findings were similar to other study conducted before. It was proven that nursing students were knowledgeable regarding Standard Precautions [12]. Good level of knowledge on Standard Precautions among nursing students may be influenced by inclusion concepts on Standard Precautions in the nursing taught in college [12].

Similar to the finding research done by Sodhi et al., [13] showed that more than 90% and Kim et al.,[14]. Showed that 56% of nurses had a very good knowledge of Standard Precautions [15]. Besides, the researcher agreed with the results obtained from previous studies conducted in Jamaica that indicate the majority (64.0%) of the healthcare workers had good level of knowledge on Standard Precautions while just over one-quarter had poor knowledge [2]. A study also conducted in Australia stated that the respondents showed a

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

stronger level of knowledge on the topic of Standard Precautions (88.9%),[16]. Then, a study held in Ethiopia mentioned that the majority of the respondents (84.2%) had good level of knowledge regarding Standard Precautions [17]. Thu et al., [18], wrote that a study conducted in Vietnam indicated that the large percentages of correct responses to the items about knowledge on Standard Precautions (range for individual items were between 83.9% -99.2) [19].

A study had been conducted among nurses in Zabol City in 2014 revealed that more than 90% of nurses in the ICU ward had a very good level of knowledge regarding infection control. This result was compatible with another study conducted which showed that half of the nurses (56%) had good level of knowledge about infection control while more than half of the nurses (79%) showed good level of practice on Standard Precautions when they were being evaluated [15]. Similarly, according to a study in West Jamaica among Health Care Worker, nurses showed a high level of knowledge when compared to the other HCWS which was around 90%. Then, following by medical officers (88%) and medical laboratory technologists (70%) [2].

Whereas, according to a web-based survey conducted by the researchers claimed that Jordanian nursing students scored relatively higher on total knowledge regarding Standard Precautions than students from other countries with the total mean of correctly answered questions 79.9% [20]. It includes nursing students from Australia with means of (59.8%), Italy (74.2%), Namibia (66.6%) and Ghana (61.3%) [20].

Sarani et al. [15]. had suggested that one of the main sources of information to improve student knowledge was through teaching during the curriculum. He stated that through formal teaching or informal bedside clinical side practices, the information regarding Standard Precautions guidelines and practice can be emphasized more compared to student‟s self-learning [12]. Furthermore, Sarani et al. [15] concluded that training courses contributed to positive consequences on the improvement of knowledge, attitude, and practice in health care personnel as well as the most effective ways to fight HAIs.

The Level of Practice on Standard Precautions among Nursing Students in UiTM Puncak Alam

The results from this research study revealed that most of the nursing students UiTM Puncak Alam had a good level of practice on Standard Precautions. This finding can be supported by other previous research studies that had been conducted before. A study in Singapore regarding hand hygiene knowledge and practice among nursing students in 2012, showed that 66.3% of students presented with good practice on hand hygiene and 48.9% of the students were revealed to have good level of knowledge on hand hygiene[21].

Similarly, to a research finding conducted among HCWs regarding Standard Precautions, the researcher reported that 86% of HCWs had relatively good practice in handwashing, 79% for wearing gloves, 46% for wearing masks, eye goggles (25%) and 45% for using gown or plastic apron when engaged in aseptic procedure [2]. Mukherjee et al. [22] found that 54.7% out of the total number of interns of Medical College in West Bengal, India had practiced hand washing after being contacted with different patients. Most physicians and nurses in the Emergency Department in Canada had a high rate of handwashing practice before and after contact with patients with a mean score of 4.9 out of 5 possible points [23].In Abuja, Nigeria, physicians, and nurses, which comprised 96.38% and 97.94% respectively, had practiced hand washing after engaging in direct contact with patients [24]. The majority of HCWs reported in their self-reported questionnaire that they wore gown or plastic apron during

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

procedures, which might induce the splashing of blood or body fluids [24].

Apart from that, the result of this research study revealed most nursing students had a good level of practice on Standard Precautions. It was compatible with a survey conducted in the emergency department in Italy which reported that most of the HCWs always used gloves and performed hand washing immediately after contact with patients and after removing gloves[23]. However, there were some of the Standard Precautions guidelines that were still not practiced thoroughly by some HCWs. This can be proven by the result from this research study that showed around 20.1% of the nursing students in UiTM Puncak Alam had stated that they never wore a protective cap or shoe shade in the procedure that might induce the splashing of blood, body fluids, secretion or excretion.

Factors that were associated with the occurrence of inadequate practice on Standard Precautions among HCWs were lack of understanding regarding the proper use of personal protective equipment (PPE), lack of equipment and time, uncomfortable when handling PPE [23]. Faculties should provide strict monitoring on Standard Precautions during the clinical attachment[5]. Furthermore, students to faculty ratio also contributed to good practice level. As the numbers of nursing students were relatively small in faculty; therefore, the clinical instructors will be able to closely monitor the performance of nursing students on Standard Precautions [5].

5 Conclusion

The majority of nursing students in UiTM Puncak Alam had a good level of knowledge and a good level of practice on Standard Precautions. However, the researcher suggested for further training and education regarding Standard Precautions. Teaching and practice on Standard Precautions must be strengthened to decrease the transmission of microorganisms that may lead to Hospital-Acquired Infections among students and patients. Furthermore, further studies regarding years of study, training, management support, barriers, and nursing staff influenced the level of practice on Standard Precautions were recommended.

Acknowledgments

We want to thank our supervisor, Madam Roswati Nordin and Centre for Nursing Studies and the Ethics Committee of Faculty of Health Sciences, Universiti Teknologi MARA (UiTM) Selangor, Puncak Alam Campus.

References

[1] Phing,. C. H., & Chee, O. Y. (2016, October 5). Knowledge, Attitude & Practice on Standard Precautions. Med J Malaysia, 71, 238-243. Retrieved fromhttp://www.e-njm.org/2016/v71n5/HIV-infection.pdf

[2] Vaz, K., MoGrowder, D., Alexander-Lindo, R., Gordon, L., Brown, P., & Irving, R. (2010). Knowledge, Awareness and Compliance with Universal Precautions among Health Care Workers at the University Hospital of West Indies, Jamaica. Health Care Workers and Universal Precautions, 1 Number 4, 10. Retrieved 21 July 2017, from https://www.ncbi.nlm.nih.gov/pubmed/23022806

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[3] Amin, T. T., Al Noaim, K. I., Bu Saad, M. A., Al Malhm, T. A., Al Mulhim, A. A., & Al Awas3, M. A. (2013). Standard Precaution and Infection Control, Medical Students Knowledge, and Behaviors at a Saudi University. Global Journal of Health Science, 5, 114-125. Retrieved 27 May,2018,fromhttps://www.ncbi.nlm.nih.gov/pmc/articles/PMC4776810/
[4] Sreedharan, J., Muttappillymyalil, J., &Venkatraman, M. (2011). Knowledge about standard precautions among university hospital nurses in the United Arab Emirates. Eastern Mediterranean Health Journal, 17 No 4, 4. Retrieved 2 July 2017, from https://www.ncbi.nlm.nih.gov/pubmed/22259892
[5] Labraque, L. J. (2012). Knowledge of and Compliance with Standard Precautions among Student Nurses. International Journal of Advanced Nursing Studies,84-97. Retrieved August 29, 2017, from https://www.sciencepubco.com/index.php/IJANS/article/view/132
[6] Mollaoglu, M., Mollaoglu, M., &Sanal, L (2015). Compliance with Standard Precautions of Students in Clinical Practice. Journal of Family Medicine & Community Health, 5. Retrieved21 July 2017, from https://www.sciencedirect.com/science/article/pii/S1976131715000341
[7] Cheung,K., Chan,C.K., Chang,M.Y., Chu,P.H., Fung,W.F., Kwan,
[8] Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. Educational and Psychological Measurement, 607. Retrieved June9,2018, from http://journals.sagepub.com/doi/pdf/10.1177/001316447003000308
[9] Askarian, M., McLaws, M., &Meylan, M. (2007). Knowledge, attitude, and practices related to standard precautions of surgeons and physicians in university-affiliated hospitals of Shiraz, Iran. International Journal of Infectious Diseases, 11, 213-219. Retrieved May 28, 2018, from https://www.sciencedirect.com/science/article/pii/S1201971206000920
[10] Gebresilassie, A., Kumei, A., &Yemane, D. (2014). Standard Precautions Practice among Health Care Workers in Public Facilities of Mekelle Special Zone, Northern Ethiopia. Community Medicine & Health Education,1-5.Retrieved June 9,2018, from https://www.omicsonline.org/open-access/standard-precautions-practice-among-health-care- workers-in-public-health-facilities-of-mekelle-special-zone-northern-ethiopia-2161- 0711.1000286.pdf
[11] Ghalya, H. A., & Ibrahim, Y. (2014). Knowledge, Attitudes and Sources of Information among Nursing Students toward Infection Control and Standard Precautions. Life Science Journal, 260. Retrieved August 28, 2017, fromhttp://www.lifesciencesite.com./
[13] Sodhi, K., Shrivastava, A., Arya, M., & Kumar, M. (2013). Knowledge of infection control practices among. Journal of Infection and Public Health, 269-275.Retrieved June, 92018,from https://www.jiph.org/article/S1876-0341(13)00036-1/pdf
[14] Kim, K. M., & Oh, H. (2015). Clinical Experiences as Related to Standard Precautions Compliance among Nursing Students: A Focus Group Interview Based on the Theory of Planned Behavior. Asian Nursing Research, 2(9), 109-114. Retrieved June 9, 2018, from https://www.sciencedirect.com/science/article/pii/S1976131715000341?via%3Dihub
[15] Sarani, H., Balouchi, A., Masinaeinezhad, N., &Ebrahimitabs, E. (2016). Knowledge, Attitude and Practice of Nurses about Standard Precautions for Hospital-Acquired Infection in Teaching Hospitals Affiliated to Zabol University of Medical Sciences (2014). Glob J Health Science, 193-198. Retrieved 27May,2018,from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4804055/
[16]Mitchell, B. G., Say, R., Wells, A., Wilson, F., Cloete, L., & Matheson, L. (2014). Australian graduating nurses" knowledge, intentions and beliefs on infection prevention and control: a cross-sectional study. BMC Nursing, 1-7.Retrieved June9,2018,from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4266973/pdf/12912_2014_Article_43.pdf
[17]Gulilata, K., &Tiruneh, G. (2014). Assessment of knowledge, attitude and practice of health care workers on infection prevention in health institution. Science Journal of Public Health, 384-393.RetrievedJune9,2018,from http://article.sciencepublishinggroup.com/pdf/10.11648.j.sjph.20140205.13.pdf
[18] Thu, T. A., Anh, N. Q., Chau, N. Q., & Hung, N. V. (2012). Knowledge, Attitude and Practices Regarding Standard and Isolation Precautions Among Vietnamese Health Care Workers: A Multicenter. Internal Medicine: Open Access, 2(4), 1-5. Retrieved June 9, 2018, from

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

https://pdfs.semanticscholar.org/99bb/4414e30d03538d422e5d0c6857bb7 9027e55.pdf
[19] Gawad, A. (2014). Assessment of Knowledge about Standard Precautions and Nosocomial. International Journal of Caring Sciences, 10(1), 169- 175.Retrieved 27 May, 2018,from https://pdfs.semanticscholar.org/42c0/521f358182b00a41b81e8b06c9c86 9b96a7d.pdf
[20]Al-Rawajfah, O., &Tubaishat, A. (2015). Nursing students' knowledge and practices of standard precautions. Nurse Education Today, 35(12), 1175-1180. Retrieved27 May 2018 from https://www.sciencedirect.com/science/article/pii/S0260691715002282?via%3Dihub
[21] Nasirudeen,A.M.A., Josephine, W.N., Koh.,Adeline, L. C.L., Wenjie,L., Lay, S. L.,&Cynthia Y. X.(2012). Hand hygiene knowledge and practices of nursing students in Singapore. American Journal of Infection Control, 40, 241-243. Retrieved May 28, 2018, from https://www.sciencedirect.com/science/article/pii/S0196655312007067
[22] Mukherjee, S., Bhattacharyya, A., SharmaSarkar, B., Goswami, D. N., Ghosh, S., &Samanta, A. (2013). Knowledge and Practice of Standard Precautions and Awareness Regarding Post-Exposure Prophylaxis for HIV among Interns of a Medical College in West Bengal, India. Oman Medical Journal,28, 141-145. Retrieved August 28, 2017, fromhttps://www.ncbi.nlm.nih.gov/pmc/articles/PMC3631309/
[23] Parmeggiani, C., Abbate, R., Marinelli, P., &Angelillo, I. F. (2010). Healthcare workers and healthcare-associated infections: knowledge, attitudes, and behavior. BMC Infectious Diseases, 1-9. Retrieved June 8, 2018, fromhttps://bmcinfectdis.biomedcentral.com/track/pdf/10.1186/1471-2334-10-35
[24] Okechukwu, E. F., &Motshedisi, C. (2012). Knowledge and practice of standard precautions in public health facilities in Abuja, Nigeria. International Journal of Infection Control,1-7. Retrieved August 28,2017, from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.831.8824&rep=rep1&type=pdf

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Hospitalization Stress in Children in DR. M. Djamil General Hospital Padang

Hermalinda Herman[1*], Deswita[2], Rika Sarfika[3]
{hermalinda@nrs.unand.ac.id[1], deswita@nrs.unand.ac.id[2], rikasarfika@nrs.unand.ac.id[3] }

Department of Child Health Nursing, Faculty of Nursing, Andalas University, KampusLimauManis Street, Padang West Sumatera, Indonesia 25163[1,2]
Department of Mental Health Nursing, Faculty of Nursing, AndalasUniversity, KampusLimauManis Street, Padang West Sumatera, Indonesia 25163[3]

Abstract. This research aimed to identify the stress of hospitalization in children during their treatment in the children's ward. This was quantitative research by using a descriptive design. A total of 133 children participated in this research. Stress hospitalization in children was valued by age using a questionnaire of hospitalization's response in children and observation sheets for symptoms of anxiety in children. More than half of the hospitalized babies or 67.7% always hug parents tightly, 69.2% of toddlers always run toward parents, 63% of pre-school ages always hug parents tightly; feeling bored is a common behavior for school-aged children and adolescents with a percentage of 56.4% and 47.8% respectively. Among the most visible physical symptoms in children was the face looked pale with a percentage of 66.9%. It is expected that nurses identify stress in children and can help children adapt to undergoing cars and treatments in the hospital.

Keywords: children, hospitalization, illness and anxiety.

1 Introduction

Being sick and hospitalized becomes a major crisis that occurs in children. Hospitalization is a situation of illness and must be treated in a hospital, which occurs in children as well as families [1]. It is affected by the level of children's development, their experiences with the disease, experiences of parting or the effects of hospitalization [2].

Hospitalization can be an intimidating and stressful experience for children due to an unfamiliar environment and medical procedures and do not know why they are being treated. This condition can lead to varying responses in children such as anger, a sense of uncertainty, anxiety, and feelings of helplessness [3]. Sick children become easy to cry, and more reliant on parents, feel scared, sad, and are very vulnerable to show anxiety [4].

When hospitalization is needed, children's emotional state becomes worse because they feel away from home and family with some adjustments in their habits, and children are in an environment that is strange for them where they must undergo several invasive and painful procedures [4]. Children with severe illness will show extreme stress. This is due to invasive procedures, separate from family, critical conditions of other children and child mortality [5].

The experience with children's hospitalization can be regarded as a process to restore health. Nurses can facilitate this process by demonstrating the importance of the experiences and feelings

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

of individuals during hospitalization and helping them adapt to the environment [6]. It is crucial to provide children with the right information related to the disease and the examination to be conducted as well as the explanation about differences with other children's diseases [7].

Based on the results of the study, it is necessary to have a research with a biopsychosocial approach to children that aims to deal with anxiety during prehospitalization appropriately, early recovery, and reduce the problem of hospitalization.

2 Method

Study Design

This research was a quantitative research with descriptive analytic design.

Sample and sampling technique

The population of this research was all children who were hospitalized in the children's care room of RSUP Dr. M. Djamil Padang. Samples were taken by simple random sampling technique with a total sample of 133 people.

Ethical Considerations

This research had obtained the ethics test approval from the Health Ethics Committee of RSUP Dr. M. Djamil Padang. Besides, before deciding to participate in this research, respondents were given informed consent about the research. Respondents were then given the freedom to choose whether or not to participate in this research. Researchers also ensured clients' confidentiality by only including initials on the questionnaire for respondents' identity data. During conducting research, researchers strived to maintain clients' privacy, provided pleasantness and actions that were not detrimental to respondents.

Data collection and analysis

Researchers conducted direct observations on children related to signs and symptoms of anxiety by using an observation sheet. The examination carried out covers biological needs and psychological needs. The biological needs of researchers examined ten symptoms in children, including increased heart frequency, increased breathing frequency, sweating, tremors, pale, trembling voice, decreased appetite, frequent urination, and sleep disorders. While for psychological needs, researchers examined seven symptoms such as nervous looks, looks tense, frightened, irritable, hot-tempered, moody/sorrowful/ sad, crying and unwilling to stare at the researchers. The symptoms were the anxiety responses in children according to the NANDA NIC NOC diagnosis standards 2014, and the concepts by (4)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Univariate analysis was intended to describe the results of research based on the characteristics of respondents, to identify the distribution of data for each variable and question items both frequency distribution and tangential values such as mean, standard deviation, minimum and maximum values.

3 Result

Children's anxiety symptoms

The following table explained the symptoms of children's anxiety based on the results of tests that researchers had conducted.

Table 1. Symptoms of anxiety to hospitalization (n=133)

Symptoms of anxiety	Yes		No	
	Sum (f)	Percentage (%)	Sum (f)	Percentage (%)
Increased pulse frequency	11	8.3	122	91.7
Increased breathing frequency	23	17.3	110	82.7
Sweeting	57	42.9	76	57.1
Shivering	14	10.5	119	89.5
Pale face	89	66.9	44	33.1
Trembling voice	25	18.8	108	81.2
Decreased appetite	56	42.1	77	57.9
Frequent urination	86	64.7	47	35.3
Sleep disorders / insomnia	66	49.6	67	50.4
Looks nervous	52	39.1	81	60.9
Looks tense	48	36.1	85	63.9
Frightened	47	35.3	86	64.7
Irritable/hot-tempered	16	12	117	88
moody/sorrowful/sad	41	30.8	92	69.2
Crying	48	36.1	85	63.9
Unwilling to stare at the examiner	38	28.6	95	71.4

Table 1 is an overview of the symptoms of children's anxiety observed during the research. It can be seen that the highest anxiety symptom is pale looking face with a percentage of 66.9%. The next most common symptoms were frequent urination (64.7%), sleep disorders (49.6%), sweating (42.9%), decreased appetite (42.1%) and nervous (39, 1%). Most children showed symptoms of looking tense (36.1.7%), crying (36.1%), frightened (35.3%), sadness (30.8%), and no eye contact (28.6%). Anxieties in children also affected the pulse

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

and breathing frequency, where 8.3% of children experiencing an increase in pulse frequency and 17.3% with an increase in breathing frequency.

Table 2. Symptoms of Children's Anxiety at RSUP M.Djamil Padang (n=133)

Variable	Mean	SD	Min – max
Symptoms of children's anxiety	8.88	3.12	3 – 16

Based on the anxiety symptoms examined in children, it can be seen in table 2 that children show anxiety symptoms with an average of 8.88, and a standard deviation of 3.12. The least number is with 3 symptoms and the most with 16 symptoms.

4 Discussion

Based on the results of the study, from several signs and symptoms of anxiety that were observed, children showed at least three signs or symptoms of anxiety and at most showed 16 symptoms. Among these symptoms were physical and behavioral symptoms. The most common symptoms in physical changes were pale faces, frequent urination, sleep disorder, sweating, decreased appetite and trembling. In this research, only a small proportion of children showed changes in the frequency of pulse and breathing.

The average children in this study showed eight symptoms of anxiety. It can be seen that children experience mild to severe anxiety. Children with mild anxiety only show three symptoms, while children with severe anxiety symptoms can show 16 symptoms. Synthesis of the concept elements is a guide to measure the anxiety of hospitalization in children in the context of health care providers. Symptoms of hospitalization anxiety are divided into two needs, namely biological needs and psychological needs. Changes in biological needs include dilated pupils, tachycardia, tremors, changes in appetite, dyspnea, and insomnia. some changes in psychological needs include fear, anxiety, hyperactive, impulsive, agitation, feeling insecure, impotent, feeling guilty, self-harm, feeling neglected, feeling alone, nervous, irritable, crying and decreased concentration [4]

Anxiety can be shown directly through physiological changes including 1) Heart; heart palpitations, increased heart frequency, increased blood pressure, fainting, decreased blood pressure and decreased pulse frequency. 2) Breathing; rapid breathing, shortness of breath, chest pressure, slow breathing, chest swelling, suffocating sensation, and breathing, 3) Digestion; decreased appetite, dislike for food, discomfort in the abdomen, nausea, heartburn, and diarrhea, 4) Neuromuscular; shocked reflexes, twitching eyelids, insomnia, tremors, stiffness, restlessness, loiter, strained face, general weakness, shaky legs, awkward movements, 5) Urinary tract; pressure to urination and frequent urination, 6) Skin; reddish skin, sweating, itching, hot and cold sensation, pale face [8].

Meanwhile, for the symptoms of behavioral, the observed signs children were looking nervous, looking tense, crying, frightened, sadness, no eye contact, trembling voice, and irritability. According to Stuart in 2013, the behavioral changes of anxiety were restlessness,

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

physical tension, trembling, shocked reactions, fast-talking, reduced coordination, risk of accidents, interpersonal dependence, mind drifting, avoiding, and hyperventilation.

Sick children become prone to crying, and were more dependent on parents, felt scared and sad, and were very vulnerable to show anxiety. If hospitalization was s needed, the child's emotional state becomes worse because they felt away from home, family or changing in their routine habits and they were in an environment where they would undergo several invasive and painful procedures [4].

Children identified various fears and worries such as separation from parents and family, unknown environment, examination and treatment, and loss of decision-making rights. Losing the right to make decisions about personal needs worsened children's fear. It was worth considering that adjustments to hospital routines were variables that influenced children's attitudes toward hospitalization [9].

Based on aspects related to the hospitalization in children, we knew that anxiety was triggered by stress and threatening factors that formed imbalances in children's psychologies. This affected the development of children. Based on the conceptual definition, it was indispensable to identify the anxiety caused by an unknown environment, where children must be separated from their family and social environment and should stay with strangers to them, meanwhile they were also the subject of invasive and painful procedures. Also, their recreational activities became disturbed [4].

Hospitals and oncology care rooms were unknown circumstances, had several challenges, and psychosocial effects on children [10]. Treated children were usually confused, afraid, and needed support, guarantees, and explanations that matched their comprehension, as well as children's need to be recognized as someone who was being treated not only the body but also as humans who had emotions, pain, worry, and attention [11].

To minimize psychosocial stress due to the hospitalization in children, we needed to understand the causes, children's needs, and effective interventions. Nurses were able to reduce the psychosocial impact of hospitalization in children by showing the importance of individual experiences and feelings during the hospitalization and helping children and their families to adapt to the surrounding environment [10].

5 Conclusion

Children's anxieties varied by age. Infant, toddler and preschool age showed more anxiety behavior because of the separation in the phase of protest, desperate, and acceptance or denial. Common anxiety behaviors included hugging parents tightly, crying to parents, and doing aggressive behaviors. Only a small proportion of children showed behavior at the acceptance stage such as being attracted to the environment, smiling and happy. The most common anxiety of school-age and teenagers was feeling bored, often inquiring about their illness and when to go home, and some of them felt sad and lonely during hospitalization. Physically, symptoms of anxiety that appeared in children included a pale face, frequent urination, sleep disorder, sweating, decreased appetite, trembling, increased frequency of breath and pulse. Anxiety symptoms related

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

to behavior such as being agitated, looking tense, crying, frightened, sad, no eye contact with the examiner, and hot-tempered. It is expected that there is a training program for nurses that aims to enhance the knowledge and skills in identifying anxiety experienced by children and parents as well as to improve the ability to overcome the anxiety of children and parents.

Acknowledgment

This research was funded by the Faculty of Nursing at Andalas University. The authors would like to acknowledge all the respondents who spend their time to participate in this study.

References

[1] Kyle T. Pediatric Nursing Clinical Guide. China: Lippincoat Williams & Wilkins; 2013.
[2] Hockenberry M, Wilson D. Wong's Essentials of Pediatric Nursing. 9 th Ed. St. Louis: Mosby Elsevier; 2013.
[3] Saharan P. Assess the Effectiveness of Play Interventions on Anxiety among Hospitalized Children in Selected Hospital of Yamuna Nagar , Haryana : An Experimental Study. 2017;2(11):88–94.
[4] Gomes GLL, Nóbrega MML da. Anxiety in children following hospitalization: a proposal for a nursing diagnosis. Rev Lat Am Enfermagem [Internet]. 2015;23(5):963–70. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692015000500963&lng=en&tlng=en
[5] Rennick JE, Dougherty G, Chambers C, Stremler R, Childerhose JE, Stack DM, et al. Children's psychological and behavioral responses following pediatric intensive care unit hospitalization: the caring intensively study. BMC Pediatr. 2014;14:276.
[6] Bsiri-Moghaddam K, Basiri-Moghaddam M, Sadeghmoghaddam L, Ahmadi F. The concept of hospitalization of children from the view point of parents and children. Iran J Pediatr [Internet]. 2011;21(2):201–8. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3446164&tool=pmcentrez&rendertype=abstract
[7] Crnkovic M, Divcic B, Rotim Z, Coric J. Emotions and experiences of hospitalized school age patients. Acta Clin Croat. 2009;48:125–35.
[8] Stuart GW. Principle and practice of psychiatric nursing. 10 th. St Louis, Missouri: Elsevier Health Sciences; 2013. 216–243 p.
[9] Coyne I. Children's experiences of hospitalization. J Child Heal Care. 2006;10(4):326–36.
[10] Obaid KB. Psychosocial Impact of Hospitalization on Ill Children in Pediatric Oncology Wards. IOSR J Nurs Heal Sci [Internet]. 2015;4(3):2320–1940. Available from: www.iosrjournals.org
[11] Rokach A. Psychological, emotional and physical experiences of hospitalized children. Clin Case Reports Rev. 2016;2(4):399–401.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Farmers And Disaster : A Phenomenology Study

Fitrio Deviantony[1], Enggal Hadi[2], Rismawan Adi Y[3]
{fitrio.psik@unej.ac.id[1] , Rismawanadi@unej.ac.id[2] , enggalhadi.psik@unej.ac.id }

Nursing Faculty University of Jember

Abstract. Floods and landslides are disasters that cause a lot of damage related to the neighborhood, and there is an increasing number of morbidity, as well as the amount of damage from the environment that occurs, and other impacts will undoubtedly affect the psychology of the communities affected by the disaster. The psychological effect of this unusual event will undoubtedly lead to trauma or the so-called posttraumatic stress disorder (PTSD). This study aimed to explore the experiences of farmers who experience direct floods and landslides; the research design was qualitative research using an interpretative phenomenology approach. The technique of collecting data used in-depth interviews with a semi-structured interview guide involving five participants, and the data were analyzed using interpretative phenomenology analysis. This research conducted six themes. First is disasters caused by humans, the second theme is accepting the existing reality, the third theme is getting closer to God, the fourth theme has the desire to farm again after the disaster, the fifth theme is restoring the family economy, the sixth theme is keeping the environment around and improving themselves. Considering the impact that will arise from this condition if it does not get proper treatment, it is needed the role of health workers in providing services to farmers affected by floods and landslides to understand, live and accept conditions that occur adaptively.

Keywords: natural disaster, mental health disorders, adaptations

1 Introduction

Indonesia is one of the countries with the most disasters in the world. Floods and landslides enter the most frequent disasters in Indonesia. In East Java itself, flooding became the number 1 most frequent disaster. In Jember some areas are included in areas prone to flooding and landslides. Floods and landslides cause much damage including environmental damage, material losses and of course fatalities. Jember's national disaster authority noted that the damage damaged residents' houses and paddy fields and public facilities.

The psychological impact of flooding and landslides in the Panti area needs to be given more attention. This problem is because it is associated with the occurrence of posttraumatic stress disorder (PTSD). Residual symptoms due to natural disasters can certainly occur where psychosocial and psychiatric disorders most often appear. Excellent handling must undoubtedly be given to patients affected by disasters [5].

Most of the inhabitants along the orphanage river are working as farmers with farmland around the area of the river, consequently, a lot of agricultural lands has been submerged and affected by floods and landslides. In addition to experiencing economic losses, farmers also suffer psychological losses, where enthusiasm in farming decreases [14].

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

This psychological pressure needs to be overcome by increasing the ability of farmers to live post-disaster life. Resilience can be built through elements of psychosocial that are adaptive and can increase psychological resilience so that they can adapt quickly and return to disaster-affected areas strongly. Own ability to survive is called resilience, where resilience includes three fundamental aspects, namely resilience, recovery, and modification of disasters [15].

Disasters that destroy the dimensions in people's lives, such as income, economy, work, home, and the environment was motivating them to reorganize their lives gradually immediately. The decision of farmers to stay at home even though the flood and landslide disaster will come suddenly is based on the belief that this is a risk that must be taken when living on the slopes of mountains and river banks. Research carried out by states that surviving in disaster areas is a part of their lives. They have their pride that can be a differentiator compared to others. The economic situation is also the main reason for the majority of disaster victims to return to their original homes and move on [13].

Being resigned and resilient becomes the main force of affected communities to survive or resilience to stressful situation. This situation encourages farmers on the banks of the orphanage to make efforts to survive. Where efforts to get closer to God Almighty is done by increasing worship and always come to places of worship. All of these activities make the community affected by disasters to become able to accept the situation and be able to understand that everything that happens is a test from God. A preliminary study conducted on farmers in the village of Panti, farmers, said that during the flood, all residents experienced extraordinary fear, evacuation became a safe place for my family and me. After the conditions are safe, I want to get out of the refugee camp immediately; I want to immediately see the condition of the residence and fix the damage that occurred. Housing is a top priority for me. Agricultural land is the next concern that can be improved slowly. The impact of the flash flood at that time was that my house and agricultural land were damaged, vegetables and durian were just waiting for the harvest. A farmer needs time, money, and energy to farm, and everything will be replaced when the harvest arrives. Feeling very sad when I saw the reality at that time, the long-awaited harvest was gone. Panti Village farmers said that to continue their lives, farmers worked together to clean their houses and fields so that they could be productive again. Together, the residents feel the burden they experience becomes lighter if they do the work together

2 Method

Design

A qualitative study guided by the phenomenological approachwas incorporated to explore the disaster experience of the farmers. Using rigorous, critical and systematic methods, phenomenologic studies create a plethora of rich data that facilitate a better understanding of the participants' lived experience [10]. Phenomenology attempts to describe the experience in conditions of essential structures embedded in individual phenomena [10].
The theory underlying phenomenology posits that to understand social realities, the researcher must investigate knowledge that the interviewees put forth to describe that reality. Husserl's

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

descriptive phenomenological method, emphasizes that researchers must thus put aside or 'bracket' prior knowledge or experience about the phenomenon [10].

Setting

Purposive sampling was used to select participants. All participants provided written informed consent after researchers explained the study purpose, assured privacy, and informed them that they could withdraw at any time. Participants were interviewed in their home environment until data saturation occurred.

Sample

Participants in this study are farmers who lived along the banks of the Bedadung River and were affected by the flash floods and landslides in 2018. The sample was five participants ranging in age from 50 -56 years. The method of selecting participants is done by purposive sampling or purposive sampling, ie, the sample chosen is oriented towards the research objectives. Deliberately, Individuals are selected or chosen because they have experience by following the phenomenon under study.

At the recruitment stage, the researchers used the inclusion criteria, so those prospective participants matched the research objectives. The inclusion criteria include: 1) Farmers, as well as cultivators in Panti Village, Panti District who are affected by flash floods and, are still domiciled in the area, 2) Age 40-60 years because researchers assume that individuals are physically and cognitively mature, have resilience abilities which are sufficiently formed with the experience gained more than two times of flash floods, 3) is willing to participate as a participant by signing a letter of willingness to become a participant, 4) can tell his experience well / cooperatively.

Data Collection

Participants were interviewed using a semi-structured approach that allowed them to elaborate on their personal experiences [10]. After an initial introductory period during which the participant gained familiarity and trust, the interviewer asked an open-ended question relative to their current experience of flood disaster in general.

The researcher who collected the data was trained in conducting qualitative interviews. Predictive techniques such as probing, reflection, and paraphrasing were used to indicate an understanding of the participants' experiences, which were often of a sensitive and emotional character. Follow up questions were asked only if essential for clarification. Interviews were terminated when participants indicated that they had exhausted their descriptions [10]. All interviews were audio-recorded and transcribed. The interviews lasted between 45 to 90 minutes and were conducted over a three-months period. Following all interviews, the researcher conversed with the participants related to neutral topics to reduce any emotional activation that may have occurred that was associated with the discussion of disaster's experience topics.

Data Analysis

The audiotapes were reviewed several times and transcribed verbatim. Researchers examined transcripts line-by-line, highlighting key statements describing participants'

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

experiences and coding them for content. Content codes were defined, categorized, and formulated into thematic clusters [10]. To explore the hidden meanings, the datawere‘interrogated’[10] : for example: What was said?; how was it said?; What do you mean by this sentence?.

Two levels of phenomenological reduction to reduce study bias was incorporated to ensure scientific rigor, and to maintain the assumptions of the phenomenological approach [8]. The first assurance was via bracketing to reduce investigator bias [8]. The second level of rigor included continuous study during the interviews; allotting adequate time and building trust in the relationship between the interviewer and interviewee; review and revision of the content and translation by senior investigators; and finally, participants’ view of notes and descriptions. Data analysis and validation were done as a research team to increase the study‘s credibility. Theme categories were initially derived individually by members of the study team, and then compared as a group until theme consensus was attained.

3 Results

A total of 100 content units about the disaster experience were extracted from the data for analysis. We derived six major themes with corresponding sub-themes: (a) disaster caused by humans; (b) accept the reality; (c) draw closer to God; (d) having the desire to farm again; (e)restoring the family economy and (f) Maintain the natural environment and improve themselves. The following is a detailed description of the themes related to each sub-theme. We used pseudonyms to protect participant anonymity.

Disaster Caused By Humans

The sub-theme of flash floods and landslides will occur at any time is the community's understanding of the time of the floods that occur when heavy rainfalls, although it is difficult to predict, it is not a burden on the lives of people who are on the banks of the river. Two examples are provided :

"*My thoughts are natural disasters ... which are unexpected ... yes, because I live on the edge of the river, suddenly it comes, bro, maybe this is also because of our behavior*" (participant 1)

"Well, if the problem of flooding with the landslide determines from god, but if you look at the slopes, it's already bare" (participant 4)

Accept The Reality

Farmers who were suffering because of closed financial resources finally began to open up again, even though the conditions were not yet full, but it had helped and could slightly reduce the family's financial burden.The improved psychological condition of farmers is preceded by abundant harvests and large selling prices. It was as expressed by several participants :

"Yes, the harvest is still not normal ... but alhamdulilah is able to help the family economy ... For a year the results are still minimal, but that is okay, we accept it“ (Participant 4)'

"But yeah, what do you want to do, little by little the feeling decreases ... what else can you do that is the will and the power of god ... you have to come back later ... (Participant 2)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Draw Closer To God

"In the city, if you don't have anything your life just like in hell ... it's different here, calm and peaceful, and more people are willing to help you, it's a matter" (Participant 6)

The statement above shows that to meet the needs of community life around the disaster area is not too difficult because there is a lot of natural wealth that can be utilized and also the peace of heart that is used to get closer to the almighty god. several participants stated are :
"*The important thing is if we want to get the money we must work hard, and another important thing is we must grateful to the almighty God*" (Participant 5)

"*We don't think anything, if we can eat and pray to the god, that's enough*" (Participant 3)

Having The Desire To Farm Again

The spirit of farming again is a surging instinct about the lives of farmers. They are starting to realize that everything that happens is God's will, it cannot be denied or cannot be asked, we as human beings can only pray that there will be a trial. As expressed by participants :

"*I do not dare to borrow at the bank, what guarantees will be made by me, if the harvest success maybe I can pay the debt, but what if not, so I likely borrow from another family member, despite the small number but it has low risk ...* (Participant 1)"

"*Well, when I ran out of money to buy medicinal plants, I sold my wife's necklace and borrowed money from my sister ...*(Participant 5)"

Restoring The Family Economy

To cover the economic shortcomings, the residents must be good at managing the economy and looking for other alternatives. Sub-themes that build these themes are looking for sources of income, raising livestock, and looking for sympathy to get money. The theme answers the research objectives of post-flood farmers and landslide behavior in homes. Two examples are provided :
"*Trying to look for work on a plantation department, search coffee plant and sell it or try to find leaves for livestock and find wood in the jungle and sell it ...* (Participant 1)"

Maintain the natural environment and improve themselves

Preserving the community's old traditions is the theme of people's hopes after the floods and landslides. The theme was built by the sub-theme of village governance reviving old habits, expecting blessings from doing tradition, preserving traditional entertainment and do naturally think about the environment. the hope of maintaining ancient traditions is the desire of the community, especially farmers to carry out the habits that had been run by their ancestors. Two examples are provided :

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

"*Yes, it must be the old one, right, but the old one doesn't want to think about nature and doesn't seem to want to know the condition of the surrounding environment* (Participant 3)"

"*The point is to give alms, give thanks and gratefully ... the results from nature are good, we must give alms* (Participant 4)"

4 Discussion

The contextual meaning of flood uncertainty is that floods and landslides can occur at any time. The flood is a reasonable condition because river water discharge depends on rainwater. God is the one who knows all of that, whether it is a reprimand or, calamity and blessing. As the results of research from Smet & Leysen (2012) flood is an unpredictable natural event that causes damage, loss, suffering, and even death for humans and the environment, caused by natural activities. Mitigation is the best to do to prevent and avoid disasters effect. Early detection of a catastrophe such as evacuation is the best thing that can be done to reduce the number of victims. Every disaster, both natural and due to human error, leaves sorrow, trauma, impressions, and unforgettable history, both by victims and their families and citizens of the world [9].

Accepting reality is the response of someone who has gone through various processes, starting to refuse, bargain, and accept. The reaction occurs many factors that influence usually start from the size of the loss, the threshold of stress, and support from the environment. In this condition a farmer begins to accepting because they start to realize that flood and landslide is a natural thing that happens simultaneously, it's because the river is still flowing, no one can refuse or ask about that,

Bedadung river is not seen as a frightening natural force that must be shunned and avoided, but instead must be approached and maintained properly even though floods and landslides occur later. Evacuating for a moment when there is a flood and then rebuilding settlements and fields ravaged by floods is a common phenomenon when living along the river. This process means, there is a construction of thought on the river, there is self-awareness, there is acceptance to face and respond and continue to do good for the big rivers [1].

After the occurrence of floods and landslides, the sadness experienced by all residents appear, especially farmers, farmers do not want too long to dissolve in their grief. Looking for peace of mind is one of the actions taken by affected residents so that they immediately forget all events experienced and look towards a good future. Psychologically, almost all people experience stress after severe disasters such as floods and landslides. If it does not develop into a prolonged depression, post-disaster stress conditions are normal. Some of the survivors will recover in a few weeks, several months, but some survivors still experience anxiety for several years. According to the scale of Rahe and Holmes, the loss of a beloved one is the greatest form of life pressure [2], so that most people experience severe stress when losing their beloved ones, especially because of unexpectedly natural disasters.

The behavior of people affected by disasters, when returning to the home spirit of farming appears again, and it becomes a rapid act in the lives of farmers. They are starting to realize that everything that happens is God‘s will, it cannot be denied or cannot be asked; we as humans can only pray that all will be okay. Bedadung river activity never deters residents

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

who inhabit the river banks to move back. Because in addition to threatening disasters, Bedadung River is also a source of life for residents around the river banks.

Efforts to restore the family economy are actions taken by farmers in carrying out their lives as farmers, we know at that time the family economy was in trouble because flash floods destroyed the crops. Even though the farmer was waiting for the harvest at that time, to cover the economic shortcomings, the residents must be good at managing the economy and looking for other alternatives.

The economy is the main reason for the victims with disasters to return to their original place of residence; in addition, they need the shelter so that they can survive and continue their lives further. Damage to various dimensions ranging from income, economy, work, home, and the environment motivates them immediately to rearrange their lives

Various community expectations after the occurrence of flash flood disasters are proper disaster management. Natural disaster management became a people hope along the Bedadung riverbank, and it is an expression of the desire or future aspirations in the event of a flood based on the experience of various events. The main theme was built from six variety of sub-themes, and we can say that the main theme is Hoping for government assistance when the disasters are coming and be patience of the disasters also trust the god that everything will be okay, it's important because the aid it's very needed at that time because the condition was very sad, houses were damaged, agriculture was damaged, basic needs could not be fulfilled so the assistance would be beneficial and soothe the psychological burden that for people who are affected by the disaster.

The study is limited by its small sample size and a homogenous sample. The limitation on taking participants is that the researcher only looks at one location, namely in the most affected side of the village, the researcher does not see his family type, the researcher does not look at the family's economic background in detail and the researcher does not see the stage of his family's development.

5 Conclusion

This research produced six themes, there is: 1) human-caused disasters, 2) accepting the reality that happened, 3) getting closer to God, 4) having the desire to farm again, 5) restoring the family economy 6) protecting the natural environment and improving themselves**.**

References

[1] Aldunce. P, et al.: Resilience for Disaster Risk Management in a Changing Climate: Practitioners Frames and Practices. Global Environmental Change 30 (2015) 1-11

[2]Azzahra, F., & Dharmawan, A. H. :Pengaruh Livelihood Assets terhadap resiliensi. Jurnal Sosiologi Pedesaan, 3(1), 1–9 (2015).

[3] Badan Nasional Penanggulangan Bencana (BNPB). :Jurnal Penanggulangan Bencana. Volume 3 Nomor 1. Jakarta: BNPB (2014).

[4] Boon, H. J., Cottrell, A., King, D., Stevenson, R. B., & Millar, J.: Bronfenbrenner ' s bioecological theory for modelling community resilience to natural disasters. Natural Hazards, 60(11), 381–408. (2012)

[5] Braun, V., & Clarke, V. Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf & K. J. (2012).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[6] Braun, V., & Clarke, V. :Successful qualitative research: Apractical guide for beginners. London: Sage. (2013).
[7] Cahyani, R. I. Resiliensi komunitas petani padi sawah dalam menghadapi serangan hama di dusun bengle, kabupaten karawang renita intan cahyani. IPB, 1–121. (2015).
[8]Chavers, D.J. Relationships between Spirituality, Religiosity, Mindfulness, Personality and Resilience. University of South Alabama. UMI Number: 1536881(2013).
[9]Chukwuorji, John B.C. & Ajero Chukmuedozie.K. Resilience in Igbo Rural Community Adolescents and Young Adults. Journal of Social Science 10 (3): 86-96, 2014.
[10]Creswell, J. W. Penelitian Kualitatif & Desain Riset (3rd ed.). Pustaka Pelajar. (2014).
[11]Crossman, J. Environmental and spiritual leadership: Tracing the synergies from an organizational perspective. Journal of Business Ethics, 103(4), 553-565. doi:http://dx.doi.org/10.1007/s10551-011-0880-3 (2011)
[12] Dharma, K.K, Metode Penelitian Keperawatan; Panduan Melaksanakan dan Menerapkan Hasil Penelitian, Jakarta: Trans Info Media (2011),
[13] Eggerman. M, Kalin. M, Grimon. M.P, Brick. C.P. Trauma Memories, Menatl Health, and Resilience: a Prospective Study of Afghan Youth. Journal of Child Psychology and Psychiatry. 56:7, pp 814-825. (2015).
[14] Jia, Z., Shi, L., Duan, G., Liu, W., Pan, X., Chen, Y., & Tian, W. Traumatic experiences and mental health consequences among child survivors of the 2008 Sichuan earthquake: a community-based follow-up study. BMC Public Health, 13(1), 104. https://doi.org/10.1186/1471-2458-13-104 (2013).
[15] Johnson, T., Henry, A. M., Henry, A. M., & Thompson, C. Qualitative Indicators of Social Resilience in Small- Scale Fishing Communities : An Emphasis on Perceptions and Practice Qualitative Indicators of Social Resilience in Small-Scale Fishing Communities : An Emphasis on Perceptions and Practice. (2014).
[16] MacKee, J., Haugen Askland, H., & Askew, L. Recovering cultural built heritage after natural disasters. International Journal of Disaster Resilience in the Built Environment, 5(2), 202–212. https://doi.org/10.1108/IJDRBE-09-2012-0032(2014).
[17] Pietrzak. Robert H. Resilience in the Face of Disaster: Prevalence and Longitudinal Course of Mental Disorders Following Hurricane Ike. Institute of Psychiatry at the Federal University of Rio de Janeiro, (2012).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The Reason Why People Living with HIV Perform Delayed Test in High Density Stigma City of Indonesia: A Qualitative Study

Gusti Sumarsih[1], Mahathir[2]
{ gustifkep123@gmail.com [1], mahathir.mahat@gmail.com [2] }

Universitas Andalas, Kampus Unand Limau Manis, Padang, Indonesia[1,2]

Abstract. Delayed conducting tests had been a significant prevalence in the population at risk of HIV. Prompt access to healthcare services is important to prevent delays for HIV treatment and care. This study aimed to gain a deep understanding of the people living with HIV who experienced delaying conducting HIV tests. The exploration of HIV test services received by people living with HIV can provide a thick description related to their engagement with care and treatment. In-depth interviews were conducted to 22 people living with HIV and utilizing HIV test services. In this phenomenological qualitative study, the researchers used the Stevick-Colaizzi-Keen data analytical method. This study identified several themes experienced by people living with HIV. The themes were that people living with HIV was mentally not ready to expect the consequences, feared of the impacts, and ignorantly make safe. Test delay impacted HIV eradication success; it requires ease of access and full support from all social components.

Keywords: healthcare services, HIV test, Serostatus

1 Introduction

Comprehensive service providing efforts are important to reduce mortality and morbidity of HIV/AIDS, limit the transmission of the disease and also reduces the negative impact caused by the disease [1]. There were various obstacles experienced by People Living With HIV (PLWH) in an effort to engage with healthcare facilities such as inadequate delivery of information related to availability health services, difficult access to health services, the fear that PLWH will be stigmatized, and unavailability of skilled and culturally sensitive personnel [2], thereby causing the delays of access to health service by the PLWH.

Access to health services is important to prevent handling delays. Establishing strategies to improve accessibility health services for PLWH should be the focus of the government. Access to health services can easily improve the sustainability and adherence to treatment and care of PLWH [3]. Cases of delays are prevalently found in people with HIV. Limitation of information related to detection and examination of HIV status is not well provided in the

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

community, primarily for the population at risk [4]. Delayed handling will improve the rate of disability, death, and decreased quality of life for PLWH [5].

PLWH, as the users of healthcare services, will also experience a lot of processes during treatment and medication. The feeling of uncertainty of getting infected creates their anxiety [6]. PLWH have a chance to be infected without their knowledge. Unwittingly, the virus may have dug through body cells. The ability of the virus to mutate creates increasingly diverse responses in each individual and will affect the decision to test, engage the care and treatment of the patient [7].

2 Method

This research used qualitative research with a phenomenological approach. Qualitative research is descriptive to provides an explanation of a phenomenon experienced by a human being, interpreted in narrative form. This narrative explanation allows the researcher to understand the depth meaning and interpretation of the phenomena. Qualitative research phenomenology sees various contexts of the wholeness of the phenomenon being studied and interpreted it realistically.

Qualitative research does not set the standard rules in determining the minimum amount of sample. The number of participants in qualitative research is largely determined by the present repetition of information or data saturation. There were 22 participants of PLWH in this study who were using the health services test. The participants were voluntarily involved in the in-depth interview during the research process. The data were analyzed by using Stevick-Colaizi-Keen analysis method to emerged the themes.

The ethical research guideline applied to all research activities to ensure that no one is in a harmful or negative impact of research activities undertaken. This is in line with the National Health Research Ethics guidelines, defining that the purpose and ethical considerations are to ensure the well-being and the dignity of the participants, respect, and protect the participants. This study passed the ethical test and obtained the ethical clearance certificate.

3 Result

Participant Characteristic

There were 22 participants of PLWH in this study who were using health services. The participants were voluntarily involved in the in-depth interview done during the research process. During the interview, the participants recognize their positive status. All participants showed openness to engage in the research and be cooperative in answering interview questions. They did not express objections nor indicate unwillingness in conveying the information inquired through the questions as well as responding to in-depth information inquiries. Participants consisted of 18 men and 4 women in the age range of 29-41 years old.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

In terms of education level, one participant was an elementary school graduate, six participants completed junior high school, and other participants had Senior High School and Bachelor's Degree.

Themes

Being informed of their HIV/AIDS disease and health information service that can be utilized does not necessarily make the participants check themselves immediately. They took so many considerations in deciding to do a serostatus check. Participants experienced various situations that make them decide not to hasten their serostatus check even though they have realized that they belong to a risk group susceptible by their various risky behaviors. These participants experienced mental unpreparedness in accepting the consequences and chose to delay doing the test.

Mentally not ready to expect the consequences

Participants stated that they were not ready to accept the consequences so that they delayed in doing the test. Although participants have received enough relevant information about the disease and realizing that they were part of a risk group, they acknowledged their fear of a positive outcome and were not yet ready to receive the results if doing an HIV test. Participants admitted that they were at-risk groups and fully aware of the possibility of getting positive results. Therefore various reasons appear on participants not to check their status immediately. Participants state this was due to fear of finding positive results, getting discriminated against, shunned by family and friends. Participants took years to postpone the test since knowing that they were at a risk group and may be infected with HIV/AIDS. The following is an excerpt from the participant's statement:

"... at that time, it is only because it really afraid me, I am afraid of being discriminated, stigmatized by the people must be, afraid of being shunned when the result is positive and then everybody will hate me. I just can't take it, so I just decided will do it next year and then next year... "(P18)

Feared of the psychological impact

Other participants revealed that feared of positive results emerged due to their fears of the psychological impacts that will be faced later. They felt that knowing the status would even give them stress. It took five years for participants to check their status after obtaining the information about HIV/AIDS. By smiling gently showing a sense of weirdness to his attitude, the participant conveyed as follows:

"... I already know the HIV information around the year of 2008. At that time I did not want to check my serostatus even. Yes, it's just because I am being feared. It will stress me out If the result becomes positive. I don't want to live with it. I just want to live my life. 5 years after, in 2013 exactly, I checked my self in, and it's positive (smile softly) ... "(P5)

Ignorant makes safe

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Participants stated that delaying the examination of HIV status was due to being unprepared for the test. They said they had to gather courage in advance so that they could receive any consequences later, but by being ignorant makes them feel better and safe. By all unreadiness, participants feel comfortable by their unknown serostatus. It makes them feel better to did not know about their status. The following quote comes from one participant:

> *"... at that time, I've heard the information completely. I am no fool to understand all related knowledge. I am pretty much realized that I belong to the risk person, but I have to put up my courage. And by not knowing, it comforts me really, so I just let it be, for years ... "(P7)*

Other participants also showed an ignorant attitude in responding to the possibility of getting infected. They claimed to not conducting tests because they should get themselves security from all the impact that will follow. Here is what they said:

> *"... yes actually I can feel it, even I can feel that I have this disease ever since, it was different you know, from yourself before. But, at first, I was kept being ignorant. It makes me better by that time and ready for anything that will happen to my body. Year after year one weird thing happened, and I couldn't handle, and then they took the test ... "(P10).*

4 Discussion

Obtaining information about HIV/AIDS disease and complete information about health services that can be utilized does not necessarily make PLWH in the study examined their HIV status immediately. PLWH in this research confessed that when they got the information they realized that they belong to a group that is likely to be infected but these PLWH chose to delay doing the examination because they were mentally not ready yet to expect the consequences. Feelings of fear for favorable and unfavorable outcomes will affect inside PLWH when knowing they were categorized as the risky behavior group of [8]. HIV test examination is a significant step in prevention strategies [9]. However, most key people and populations still do not want to check their status due to various reasons.

The decision made by the risk group that decided not to check their status immediately was influenced by various factors, internal and external factors [10]. The internal factors are derived from the individual's perspective of their own as a risk group. The risk group feels that they do not require the serostatus test as soon as there is no physical problem. The external factor comes from socioeconomic conditions, access to health care, and community stigma. In this study, PLWH stated that they initially feared the impact of the obtained results. If the results are positive, PLWH assumes to get discriminatory treatment and shunned by their social environment.

In addition, people living with HIV also think that if their HIV status is known by the public, it will become a source of the stressor [11]. The postponement of HIV status tests by the risk group was due to the assumption that the fact of their disease will become a new stressors source that they must face. It raises doubts and fears in them to do a serostatus check. The desire to do a serostatus test influenced by several

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

personal factors. The willingness to stay healthy and live longer, as well as external factors such as social support, availability of facilities, and economic conditions [12].

PLWH stated that the delay for the serostatus check was due to unpreparedness, as well. PLWH must gather their courage first so that they could feel capable of dealing with the consequences of the result later. The feeling of unready may be due to mental unpreparedness in accepting the illness, the inability to coping with receiving undesired results, and inadequate information received. Inadequate information leads to an inaccurate understanding of HIV/AIDS diseases so that the risk group did not accelerate their serostatus test [4]. Therefore, the risk groups should be given complete and accurate information so that they can prepare a positive coping strategy in the management of the results they received later and give encouragement to others to check their status immediately [13].

The delay in examining HIV status in HIV patients is very influential in the development of the disease. Delays in checking the status will lead to the worsening conditions of the disease in the severe phases, which may even fall into AIDS. Delaying the checks will allow the virus to continue growing so that it can give way to the development of multi-strain viruses. Procrastinating the test will also affect the pattern of transmission because the unknown status allows for the more widely undetected spread of the disease [14]. For groups at risk to have the desire to check themselves, personal and external factors need to be considered.

5 Conclusion

PLWH experienced delayed serostatus examination, although information on risky behavior of transmission and information on health services has been obtained. Delayed serostatus examination conducted by PLWH for various reasons such as mentally not ready to expect the consequences, feared of the impacts, and ignorant make safe. Delays serostatus examination by the group at risk, becoming one of the barriers in implementing efforts to prevent transmission of disease.

References

[1] John R.Giudicessi, BA.Michael J.Ackerman. 2013. NIH Public Access. Bone [Internet]. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3624763/pdf/nihms412728.pdf. 23(1):1–7 (2012)

[2] Akullian AN, Mukose A, Levine GA, Babigumira JB. People living with HIV travel farther to access healthcare: A population-based geographic analysis from rural Uganda. J Int AIDS Soc. 19(1):1–8 (2016)

[3] Levi J. Ensuring timely access to care for people with HIV infection: A public health imperative. Am J Public Health. 92(3):339–40 (2002)

[4] Cherutich P, Kaiser R, Galbraith J, Williamson J, Shiraishi RW, Ngare C, et al. Lack of knowledge of HIV status a major barrier to HIV prevention, care and treatment efforts in Kenya: Results from a nationally representative study. PLoS One. 7(5):1–10 (2012)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[5] May M, Gompels M, Delpech V, Porter K, Post F, Johnson M, et al. Impact of late diagnosis and treatment on life expectancy in people with HIV-1: UK Collaborative HIV Cohort (UK CHIC) Study. BMJ. 343(7829):1–11 (2011)
[6] Eldredge SA. Intimacy Uncertainty and Identity in Gay Male Couples Dealing with a Serodiscordant HIV Status. (2014)
[7] Sheikh V, Murray JS, Sherwart A. Ibalizumab in Multidrug-Resistant- Accepting Uncertainty. N Engl J Med. 379(7):603–5 (2018)
[9]Dejman M, Ardakani HM, Malekafzali B, Moradi G, Gouya MM, Shushtari ZJ, et al. Psychological, social, and familial problems of people living with HIV/AIDS in Iran: A qualitative study. Int J Prev Med. December (2015)
[9] Sciences G, Position P. The Importance of HIV Testing. March (2014)
[10] Xie J, Hsieh E, Sun MQ, Wang HL, Lv W, Fan HW, et al. Delays in HIV diagnosis and associated factors among patients presenting with advanced disease at a tertiary care hospital in Beijing, China. PLoS One. 12(8):e0182335 (2017)
[11] People With AIDS Foundation T. Treatment Bulletin - Stress & HIV, Jan 2010 ;(2)
[12] Gelaw YA, Senbete GH, Adane AA, Alene KA. Determinants of late presentation to HIV/AIDS care in Southern Tigray Zone, Northern Ethiopia: An institution-based case-control study. AIDS Res Ther. 12(1):1–8 (2015)
[13] Rzeszutek M, Gruszczyńska E, Firląg-Burkacka E. Coping profiles and subjective well-being among people living with HIV: less intensive coping corresponds with better well-being. Qual Life Res. 26(10):2805–14 (2017)
[14] Krawczyk CS, Funkhouser E, Kilby JM, Vermund SH. Delayed access to HIV diagnosis and care: Special concerns for the Southern United States. AIDS Care - Psychol Socio-Medical Asp AIDS/HIV. 18(SUPPL. 1):1–14 (2006)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Sleep Quality among Hemodialysis Patients

Devia Putri Lenggogeni[1], Ratna Sitorus[2], Riri Maria[2]
{Email: deviaputri@nrs.unand.ac.id}

[1] Medical Surgical Nursing Department, Faculty of Nursing, Universitas Andalas
[2] Medical Surgical Nursing Department, Faculty of Nursing, Universitas Indonesia

Abstract. Patients undergoing hemodialysis often had poor sleep quality. Some of the factors that are known related to sleep quality are demographic, pathophysiological, and psychological factors. Besides those factors, there is one new factor related to sleep quality, which is a spiritual factor. This study aims to identify and explain factors related to sleep quality among patients undergoing hemodialysis. The design of this study is cross-sectional analysis with a sample size is 100 respondents. Chi-square and logistic regression are used to analyze data. The result showed relation among ages (p= 0,003), with hemodialysis schedule (p=0,001), hemodialysis adequacy (p=0,000), *interdialytic weight gain* (IDWG) (p=0,004), depression (p=0,000) and spirituality (p=0,000). Depression is the most related factor with sleep quality among patients undergoing hemodialysis. It is necessary to consider the factors that relate to sleep quality in arranging nursing intervention to enhance sleep quality among patients undergoing hemodialysis.

Keywords: End-Stage Renal Disease, hemodialysis, sleep quality

1 Introduction

End-stage renal disease (ESRD) is an irreversible decreasing of renal function occurs more than 95%, which cannot be cured due to the variations of causes. According to The National Kidney Foundation (NKF) Kidney Disease Outcome Quality Iniative (KDOQI), ESRD is a condition in which alteration of renal function occurs progressively and irreversible with glomerulus filtration rate < 15ml/min/1.73m^2 for more than 3 months in which body cannot maintain the metabolism, fluid balance and electrolyte and that can lead to uremia [1].

The prevalence of ESRD has increased every year. The World Health Organization (WHO) estimated by 2013, a number of patients with renal failure increased up to 50%. In Indonesia, according to the data of Riskesdas (2013) the increasing of ESRD is approximately 6% per year. By the increasing of those numbers, replacement therapy for renal failure will also increase. Indonesian Renal Register [2] stated that hemodialysis is the most common replacement therapy, which is chosen by ESRD patients.

Hemodialysis is a replacement therapy for ESRD patients which is able to do excretion of waste product from metabolism and maintain fluid and electrolyte balance through semipermeable membrane which can function as artificial renal [3]. Nevertheless, hemodialysis cannot cure, recover or replace metabolic or endocrine activity that is done by renal thus ESRD patients undergoing hemodialysis will still experience disturbance either from the disease or effect of hemodialysis therapy. Sleep disturbance is one of the disturbances that is often complained subjectively by the patients undergo hemodialysis [4,5].

Approximately 50-80% hemodialysis patients experience sleep disturbances and have poor sleep quality [6]. Demographic, pathophysiological, and psychological factors are attributed with the decreasing of sleep quality. Besides those factors, nowadays, spiritual factor is also known to influences sleep quality. Spirituality is one new factor that has not been examined widely related to sleep quality.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

This study identifies various factors affecting sleep quality of hemodialysis patients. The factors are demographic factors, namely age, and sex. Dialysis factors include a schedule of hemodialysis, duration of hemodialysis, and adequacy of hemodialysis. Furthermore, pathophysiological factors include hemoglobin levels, comorbid diseases, and interdialytic weight gain (IDWG). Besides that, there are also psychological factors that affect sleep quality hemodialysis patients, namely depression. Recently there are also spiritual factors that affect the sleep quality of hemodialysis patients.

Sleep is a basic human need thus maintaining sleep quality for hemodialysis patients is an important thing that needs to be done by health care team in hemodialysis unit. Understanding the factors related to sleep quality among hemodialysis patients can be used as an approach to do assessment and arrange appropriate interventions that fit with patient's condition to enhance sleep quality. Based on that, this study aims to know the factors related to sleep quality among patients undergoing hemodialysis.

2 Method

The design used in this study was cross sectional study. Sampling method used was consecutive sampling with some inclusion criteria. The sample size in this study was 100 respondents. This study was conducted in May 2017. The instruments included respondents' characteristics, Pittsburgh Sleep Quality Index (PSQI), Beck Depression Index (BDI), Ellison and Paloutzian Spritual Well-Being. Before filling the questionnaire, respondents were required to fill informed consent. To ensure the respondents' right being protected, the researcher noticed ethical principles which are beneficience, respect for human dignity and justice.

3 Result

The results showed description of respondents' characteristic and relation between respondents' characteristic and quality of sleep. Description of respondents' characteristic include quality of sleep, ages, gender, hemodialysis schedule, duration of hemodialysis, hemodialysis adequacy, hemoglobin level, comorbid disease, interdialytic weight gain (IDWG), depression, and level of spirituality.

In this study, respondents' ages were categorized into early age (17-44 years old), middle age (45-59 years old), and elderly (60-70 years old). From 100 respondents, majority of the respondents are in the range of 45-59 years old, with the total 53 respondents (53%). Based on gender, the majority of the respondents are male with the total of 61 respondents (61%).

According to dialysis factor, it was revealed that the majority of the respondents with the total of 64 respondents (64%) undergoing hemodialysis < 1 year. Next, the majority of the respondents of 56 persons (56%) undergoing hemodialysis at day shift. According to hemodialysis adequacy, it was revealed that the majority of the respondents of 64 respondents (64%) have inadequate hemodialysis.

According to biological factors, the majority of the respondents of 64 respondents (64%) have anemia, about 59 respondents (59%) have normal interdialytic weight gain (IDWG) (< 3.5%), and most of the respondents of 90 respondents (90%) have comorbid disease. It was also revealed that 37 respondents (37%) have depression. From the point of spirituality, the majority of the respondents of 69 persons (69%) have middle level of spirituality. According to the sleep quality, it was revealed that the majority of the respondents (64%) have poor sleep quality.

Table 1
Analysis of Demographic Factor in Sleep quality among Hemodialysis Patients at Dr. M. Djamil Hospital (n=100)

Variable	Sleep Quality				Total		*p-value*
	Good		Poor				
	n	%	n	%	n	%	
Ages							
Early age (17-44 years old)	21	55	17	45	38	100	0,003*
Middle age (45-59 years old)	11	21	42	79	53	100	
Elderly age (60-70 years old)	4	44	5	56	9	100	
Gender							
Male	23	38	38	62	61	100	0,818
Female	13	33	26	67	39	100	
Total	36	36	64	64	100	100	

Table 1 shows the analysis of demographic factor in sleep quality hemodialysis patients. Based on statistical test, it was revealed that there is relation between ages and sleep quality ($p=0.003$; $\alpha=0.05$). In respect of gender with sleep quality, it was revealed no significant relation between gender and sleep quality among hemodialysis patients ($p=0.818$; $\alpha=0.05$).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 2
Analysis of Psychological Factor in Sleep Quality among Patients Hemodialysis
at Dr. M. Djamil Hospital (n=100)

Variabel	Sleep Quality				Total		*p-value*
	Good		Poor				
	n	%	n	%	n	%	
No depression	33	54,5	30	47,6	63	100	0,000*
Depression	3	8,1	34	91,9	37	100	
Total	36	36	64	64	100	100	

Table 2 shows relations between psychological factor which is depression and sleep quality among hemodialysis patients. The result of statistical test shows that there is relation between depression and sleep quality among hemodialysis patients (p= 0.000; α= 0.05)

Table 3
Analysis of Dialysis Factor in Sleep quality among Hemodialysis Patients
at Dr. M. Djamil Hospital (n=100)

Variabel	Sleep Quality				Total		*p-value*
	Good		Poor				
	n	%	n	%	n	%	
Hemodialysis Schedule							
Morning	24	55	20	46	44	100	
Day	12	21	44	79	56	100	0,001*
Hemodialysis vintage							
< 1 years	26	41	38	59	64	100	0,167
1-3 years	7	39	11	61	18	100	
>3 years	3	17	15	83	18	100	
Hemodialysis Adequacy							
Adequate	21	58	15	42	36	100	0,001*
Inadequate	15	23	49	77	64	100	
Total	36	36	64	64	100	100	

Table 3 shows analysis of dialysis factor with sleep quality among hemodialysis patients. It shows that there is significant relation between hemodialysis schedule with sleep quality among hemodialysis patients (p=0.001;α=0.05). Furthermore, there is no relation between hemodialysis vintage and sleep quality among hemodialysis patients (p=0.167; α=0.05). In addition, analysis of hemodialysis adequacy shows that there is significant relation between hemodialysis adequacy and sleep quality among hemodialysis patients (p=0.001; α=0.05).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 4
Analysis of Pathophysiological Factors in Sleep Quality among Patients Hemodialysis
at Dr. M. Djamil Hospital (n=100)

Variabel	Sleep Quality				Total		*p-value*
	Good		Poor				
	n	%	n	%	n	%	
Hemoglobin level							
No anemia	16	44	20	56	36	100	
Anemia	20	31	44	69	64	100	0,27
Comorbid disease							
Have	6	60	4	40	10	100	0,187
Have Not	30	33	60	67	90	100	
Interdialytic Weight Gain (IDWG)							
Normal	28	48	31	53	59	100	0,008*
Abnormal	8	20	33	81	49	100	
Total	36	36	64	64	100	100	

Table 4 shows analysis of pathophysiological factor and sleep quality among hemodialysis patients. The related pathophysiological factors include hemoglobin level, comorbid disease, and interdialytic weight gain (IDWG). It was revealed that no relation between hemoglobin level and sleep quality among hemodialysis patients (p=0.27; α=0.05). In addition, there is no relation between comorbid disease and sleep quality among hemodialysis patients (p=0.187; α=0.05). Another factor which is interdialytic weight gain (IDWG) shows there is significant relation with sleep quality among hemodialysis patients (p=0.008; α=0.05).

Table 5
Analysis of Spiritual Factor in Sleep Quality among Hemodialysis Patients
at Dr. M. Djamil Hospital (n=100)

Variabel	Sleep Quality				Total		*p-value*
	Good		Poor				
	n	%	n	%	n	%	
High	22	71	9	29	31	100	0,000*
Medium	14	20	55	80	69	100	
Total	36	36	64	64	100	100	

Table 5 shows relation between spiritual levels with sleep quality among hemodialysis patients. The statistical test shows that there is relation between spirituality and sleep quality among hemodialysis patients (p= 0.000; α= 0.05). In addition, according to the result of the multivariate test, it was revealed the final modeling result of multivariate as follow:

Table 6
Final Multivariate Modeling of Independent Variable Related to Sleep Quality among Hemodialysis Patients
at Dr. M. Djamil Hospital (n=100)

Variable	B	Wald	*p-value*	OR 95% CI
Age		10,791	0,005	
Age (1)	2,946	10,674	0,001	19,034 (3,250-111,459)
Age (2)	1,427	1,573	0,21	4,165

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

				(0,448-38,715)
Hemodialysis Schedule	2,593	0,853	0,002	13,373 (2,514-71,129)
Hemodialysis vintage		1,705	0,426	
Hemodialysis vintage (1)	0,79	0,708	0,4	2,204 (0,350-13,890)
Hemodialysis vintage (1)	1,143	1,196	0,274	3,136 (0,404-24,329)
Hemodialysis Adequacy	1,308	2,887	0,089	3,7 (0,818-16,741)
Interdialytic Weight Gain (IDWG)	0,219	0,071	0,79	1,245 (0,248-6,258)
Comorbid	0,136	0,015	0,901	1,146 (0,133-9,835)
Depression	3,093	9,167	0,002	22,042 (2,976-163-239)
Spiritualitality	1,727	4,684	0,03	5,626 (1,177-26,888)
Constanta	14,623	14,557		

Table 6 shows the final multivariate modeling of independent variable related to sleep quality among hemodialysis patients. It yielded that the most influencing factor to the sleep quality is depression variable with OR 23.063 (CI 95%= 3.227-164.823), which means patients with risk for depression have bad sleep quality 23.063 times compare to those who are not depressed.

4 Discussion

The findings show there is significant relation between ages and sleep quality (*p-value*: 0.003). Age is a factor that is often attributed to the quality of sleep. The older a person is, the more decreasing the body function is. The elderly age cause the decreasing of the sensitivity to the time to maintain circadian rhythm. The elderly ages cause 25% decreasing of hormone production including melatonin. In patients with ESRD undergoing hemodialysis, the decreasing of melatonin can also be caused by inflammation. The alteration of melatonin production cause disturbance in sleep-wake up rhythm. The decreasing of melatonin production cause sleep disturbances which are difficulty to fall asleep and maintaining sleep that lead to frequently waking up or early waking up [7,8].

In this study, it can be seen that there is no relation between gender and sleep quality (p-value: 0.818). Although, from some literatures, it was mentioned that there are differences of gender in sleep and circadian regulation because of different hormones between male and female [9]. The analysis result from this study showed that majority of the respondents' age are in the range of 45-59 years old, which is known from that range that estrogen hormone in female has decreased due to menopause, so that the difference of hormone between male and female at that range age is not that significant. This study is consistent with Cengić [10] who showed that there is no relation between gender and sleep quality among patients undergoing hemodialysis.

This study shows that there is relation between hemodialysis schedule and sleep quality (p-value: 0.001). This is related to the change of circadian rhythm which can change the cycle of wake and sleep and activity pattern. The change of circadian rhythm can be explained by the change of temperature due to hemodialysis process. The increasing of body temperature of patients with hemodialysis can maintain for hours after hemodialysis. This change is considered to alteration of circadian rhythm regulation, increasing of sleep onset and rapid eye movement latency (REM) and decreasing of REM sleep percentage [11].

In this study, it also shows that there is no relation between hemodialysis vintage and sleep quality (p-value: 0.167). Although, hemodialysis vintage is considered to have role in establishing sleep disturbance among hemodialysis patients [12]. The finding of this study is consistent with a study by Firoz [13] which also showed that hemodialyis vintage is not related to the sleep quality among hemodialysis patients. Based on the analysis of this finding, it may be due to the frequency of hemodialysis < 1 year.

This study shows the relation between hemodialysis adequacy and sleep quality among hemodialysis patients (p-value: 0.001). Some studies explained that hemodialysis adequacy is an independent factor for sleep quality.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The similar study conducted by Chang & Yang [14] also showed that there is relation between hemodialysis adequacy and sleep quality. Hemodialysis adequacy is associated with urea clearance. Urea clearance in hemodialysis process is a factor that determines the effectiveness of hemodialysis process. If the adequacy is not adequate, it will result to the accumulation of urea toxicity. The high urea level in blood will cause the decreasing of β1 and β2 adrenoreceptor. The decreasing of this receptor will cause the decreasing of melatonin that can disturb body circadian rhythm [7].

This study informs us that there is relation between interdialytic weight gain (IDWG) with sleep quality among hemodialysis patients. IDWG causes the increasing of intravascular volume which is associated to upper respiratory tract obstruction. The excess of this fluid can cause accumulation of fluid in nuchal and parapharyngeal. The fluid excess may contribute to the pathogenesis of obstructive sleep apnea (OSA) for some patients such as heart failure, renal failure, and idiopathic peripheral edema [15].

The result of this study shows that there is no significant relation between hemoglobin level and sleep quality among patients undergoing hemodialysis (p-value: 0.27). A study by Sabbatini [16] also showed the same result. It was explained poor sleep quality among hemodialysis patients is influenced by the demographic factor, such as gender, age, dialysis time, dialysis schedule, and clinical problem. The clinical problem includes high blood pressure, anti-hypertension medicine, or cardiovascular disease, hyperparathyroidism, where those factors can cause sleep disturbances that need to be considered.

The result of this study shows that there is no significant relation between hemoglobin level and sleep quality among patients undergoing hemodialysis (p-value: 0.27). A study by Sabbatini [16] also showed the same result. It was explained poor sleep quality among hemodialysis patients is influenced by the demographic factor, such as gender, age, dialysis time, dialysis schedule, and clinical problem. The clinical problem includes high blood pressure, anti-hypertension medicine, or cardiovascular disease, hyperparathyroidism, where those factors can cause sleep disturbances that need to be considered.

The analysis result of this study that explain no relation between hemoglobin level and sleep quality among hemodialysis patients because variation in the data collection of hemoglobin level. Hemoglobin levels that were taken were the latest hemoglobin levels with the time when the study was conducted so that the researcher cannot represent the description of the sleep quality in the last one month.

This study shows the relation between depression and sleep quality among hemodialysis patients (p-value: 0.000). The pathophysiology of depression is associated with neurotransmitter during sleep. Depression is considered as an imbalance condition between some neurotransmitter, especially acetylcholine, serotonin, and dopamine. The imbalance of this cholinergic path cause domination of REM sleep in patients with depression [17].

This study also identifies the relation between spirituality level and sleep quality among patient undergoing hemodialysis (p-value: 0.000). For many patients who have chronic disease, spirituality is an important coping source. Besides that, spirituality aspect is one factor that is associated with sleep quality among patients with chronic disease. It is known that the patients with high level of spirituality have lower depression and anxiety in life. Thus, it can lead to good sleep quality [18].

The result of multivariate analysis shows that depression is the most influencing variable for quality of sleep. Depression is a psychological factor, but the changes of the depression can cause biological changes indirectly. It is known that person with depression will have the increasing of inflammation and alteration in cytokine production. IL-6 is one of the cytokines that will increase if the person has depression. IL-6 is known as a type of cytokine that cause sleep regulation disturbance.

5 Conclusion

Factors related to sleep quality among patients undergoing hemodialysis are age, hemodialysis schedule, hemodialysis adequacy, IDWG, depression, and spirituality. Determinant factors that influence sleep quality among hemodialysis patients in Dr. M. Djamil Hospital is depression. The results of this study can be guidance for nurses in doing assessment of sleep disturbance problem among hemodialysis patients so that the appropriate intervention can be applied that fit with patients' condition

.

References

[1] Ignatavicius D., Workman M. Medical Surgical Nursing Patient Center Collaborative Care. 7th edition. St.Louis: Elsevier; 2013.

[2] Indonesian Renal Register. 7 th Report Of Indonesian Renal Registry 2014 7 th Report Of Indonesian Renal Registry 2014. Jakarta; 2014.

[3] Sukandar E. Nefrologi Klinik. Bandung: Pusat Informasi Ilmiah (PII) Departemen Ilmu Penyakit Dalam Fakultas Kedokteran Universitas Indonesia; 2013.

[4] Parker KP, Bliwise DL, Bailey JL, Rye DB. Daytime sleepiness in stable hemodialysis patients. Am J Kidney Dis. 2003;41(2):394–402.

[5] Black J., Hawks J. Medical Surgical Nursing: Clinical Management for Positive Outcomes. 8th editio. Philadelphia: Elsevier; 2009.

[6] Tosun N, Kalender N, Cinar FI, Bagcivan G, Yenicesu M, Dikici D, et al. Relationship between dialysis

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

adequacy and sleep quality in haemodialysis patients. J Clin Nurs. 2015;24(19–20):2936–44.
[7] Koch BCP, Nagtegaal JE, Kerkhof GA, ter Wee PM. Circadian sleep–wake rhythm disturbances in end-stage renal disease. Nat Rev Nephrol [Internet]. 2009;5(7):407–16. Available from: http://www.nature.com/nrneph/journal/v5/n7/full/nrneph.2009.88.html#top%0Ahttp://www.nature.com/nrneph/journal/v5/n7/pdf/nrneph.2009.88.pdf
[8] Pinto AR, da Silva NC, Pinato L. Analyses of melatonin, cytokines, and sleep in chronic renal failure. Sleep Breath. 2016;20(1):339–44.
[9] Baker FC, O'Brien L. Sex Differences and Menstrual-Related Changes in Sleep and Circadian Rhythms. In: Kryger M, Roth T, Dement W., editors. Principle and Practice of Sleep Medicine. 6th editio. Philadelphia: Elsevier; 2017. p. 1516–24.
[10] Cengić B, Resić H, Spasovski G, Avdić E, Alajbegović A. Quality of sleep in patients undergoing hemodialysis. Int Urol Nephrol [Internet]. 2012;44(2):557–67. Available from: http://apps.webofknowledge.com/full_record.do?product=UA&search_mode=GeneralSearch&qid=1&SID=2Db5poamKpAhJFgaEy2&page=1&doc=1
[11] Park J., Ramar K. Sleep and Chronic Kidney Disease. In: Kryger M, Roth T, Dement W., editors. Principle and Practice of Sleep Medicine. Philadelphia: Elsevier; 2017. p. 1323–8.
[12] Sakkas G., Stefanidis I. Renal Disorders and Sleep. In: Chokroverty S, Sahoota P, editors. Acute and Emergent Events In Sleep Disorder. New York: Oxford University Press; 2011. p. 229–46.
[13] Firoz MN, Shafipour V, Jafari H, Hosseini SH, Charati JY. Sleep Quality and Depression and Their Association with Other Factors in Hemodialysis Patients. Glob J Health Sci [Internet]. 2015;8(8):121. Available from: http://www.ccsenet.org/journal/index.php/gjhs/article/view/53485
[14] Chang S, Yang T. Sleep Quality and Associated Factors in Hemodialysis Patients. Acta Nephrol. 2011;25(321):97–104.
[15] Chiu KL, Ryan CM, Shiota S, Ruttanaumpawan P, Arzt M, Haight JS, et al. Fluid shift by lower body positive pressure increases pharyngeal resistance in healthy subjects. Am J Respir Crit Care Med. 2006;174(12):1378–83.
[16] Sabbatini M, Pisani A, Crispo A, Ragosta A, Gallo R, Pota A, et al. Sleep quality in patients with chronic renal failure: A 3-year longitudinal study. Sleep Med. 2008;9(3):240–6.
[17] Gul A, Aoun N, Trayner EM. Why do patients sleep on dialysis? Semin Dial. 2006;19(2):152–7.
[18]Araujo SMHA, Bruin VMS de, Nepomuceno LA, Maximo ML, Daher E de F, Correia Ferrer DP, et al. Restless legs syndrome in end-stage renal disease: Clinical characteristics and associated comorbidities. Sleep Med [Internet]. 2010;11(8):785–90. Available from: http://dx.doi.org/10.1016/j.sleep.2010.02.011

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The Correlation Between Transcultural Nursing Competencies and Hospital-based Nursing Therapeutic Communication in Jember, Indonesia

Ahmad Rifa'i, Alfid Tri Afandi[1], Elly Rindiantika
{ alfid@unej.ac.id }

Faculty of Nursing, University of Jember, East Java, Indonesia[1]

Abstract. This study aimed to analyze the relationship between transcultural nursing competencies and the therapeutic communication of nurses at the inpatient ward. This study used a cross-sectional study involving 106 nurses in Hospitals in Jember. The sample was chosen randomly from a population of 145 with the Slovin formula with inclusion criteria nurses willing to become respondents. The results of this study indicate that the majority of nurses have an adequate transcultural nursing competency (74.5%) and nurses applying therapeutic communication techniques in moderation (49.1%). This research found a relationship between transcultural nursing competencies and therapeutic communication of nurses with p-value = 0.001, and r = 0.320. The differences in culture and language cause a low correlation between transcultural nursing competencies and nurse therapeutic communication. Cultural differences must be maintained so that they can still respect each other and be more harmonious in developing professional relationships between nurses and patients.

Keywords: culture, Therapeutic communication, Transcultural nursing.

1 Introduction

The role of nurses in implementing excellent nursing services is increasing. Nurses are not only required to be proficient in mastering science and technology, but nurses are also expected to be able to develop caring, soft skills in terms of patient care management, patient relationships, expertise in adaptation, providing comfort, patient problem solving and ways of communicating. The nurse caring for soft skills in communication are still considered to be less than optimal [28]. Inadequate nurses are caring soft skills in connection due to time constraints and the number of nurses' duties, so that therapeutic communication is not carried out according to the procedure [15].

Differences become one of the challenges for nurses to maintain the quality of nursing services by behaving well while interacting with patients. Nurses are required to be skilled in conveying information from the therapeutic communication process that has been carried out. Excellent therapeutic communication between nurses and patients can also be used as a benchmark for patient satisfaction with care services while in hospital [22]. Clients are unique individuals with different needs, strengths, values, and beliefs. The hospital facilitates the client to communicate openly to build trust and understand and protect the cultural values of the client [19].

Population migration or migration of certain ethnic groups has led to the development of diverse cultures. Madurese are the majority who live in the northern part of Jember. They live in groups and are based on a genealogical element called the "taneyan lanjang" settlement pattern so that the people living in northern Jember use Madurese. Many Javanese live in the southern part of Jember, and most

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

of them do not understand Madura [6]. Nurses often find the ethnic, cultural diversity of the community in a health service institution, namely in the hospital. Hospitals in the Jember region receive many patients from various ethnic cultures. In 2013 one of the Regional Hospitals in Jember was appointed as a regional referral hospital for the coverage of the districts of Jember, Bondowoso, Situbondo, Banyuwangi, and Lumajang through the Governor's Decree Number 188/786 / KPTS / 013/2013 concerning the regional implementation of the referral system East Java province [3]. Based on this background, researchers are interested in researching the relationship of transcultural nursing competencies with nurses' therapeutic communication in dealing with patients from different ethnic cultures.

2 Method

The research design used in this study is a cross-sectional study. The population in this study were nurses who served in hospital inpatient rooms. The number of samples in this study was 106 nurses who served in the inpatient room. The sampling technique used in this study is the cluster sampling technique. Samples are grouped and collected according to the class of inpatient rooms and proportioned according to the desired sample size. The inclusion criteria in this study were nurses who were willing to be respondents in the research. The exclusion criteria are nurses who are not in place or on official leave. This study uses a quantitative approach. The research method is descriptive-analytic and uses a cross-sectional design.

The questionnaire used in this study was the Transcultural Nursing Competency questionnaire and the Therapeutic Communication questionnaire. The Transcultural Nursing Competency Questionnaire was adapted from the book Teaching Cultural in Nursing and Health Care: Inquiry, Action, and Innovation [18]. The implementation of therapeutic communication techniques was adopted from The Therapeutic Communication Questionnaire [12]. The questionnaire has a list of questions that can be understood by respondents. Measurement of therapeutic communication questionnaire was assessed by a Likert scale consisting of 4 statements, namely, Never, Sometimes, Often, and Always. Analysis of the Transcultural Nursing Competency questionnaire was also evaluated using a Likert range. The scale consisting of 4 statements: Very Know, Know, Don't Know, and Very Not Know. The following is the interpretation table for the questionnaire used.

Researchers have conducted an Ethics Test at the Faculty of Dentistry, the University of Jember, which was processed from November 22, 2018, to January 9, 2019, with Number: Surat No.232 / UN25 / KEPK / DL2019. In this study, univariate and bivariate analyses were conducted. The univariate analysis in this study sets out the number of frequencies and percentages of demographic data, such as education class, length of service, and the area of origin of the respondent. Bivariate analysis in this study uses the Spearman Correlation Correlation Test because the analyzed variables have abnormal data distribution.

3 Result

Characteristics of respondents

The number of respondents was 106 nurses. Descriptions of the characteristics of the respondents in the study are presented in number, frequency, and percentage.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 1. The relationship between the level of transcultural nursing competencies and the educational groups (n = 106)

	Education	Transcultural Nursing Competencies			Total (%)	*p- value*
		Good (%)	Enough (%)	Less (%)		
a.	Diploma degree	14 (19,7)	55 (77,5)	2 (2,8)	71 (67)	0,318
b.	Bachelor degree	7 (20,6)	23 (67,6)	4 (11,8)	34 (32,1)	
c.	Master degree	-	1 (100)	-	1 (0,9)	
	Total				106	

Table 2. Educational Groups with Therapeutic Communication (n=106)

	Education	Therapeutic Communication			Total (%)	*p-value*
		Good (%)	Enough (%)	Less (%)		
a.	Diploma degree	32 (45,1)	36 (50,7)	3 (4,2)	71 (67)	0,726
b.	Bachelor degree	17 (50,9)	16 (47,1)	1 (2,9)	34 (32,1)	
c.	Master degree	1 (100)	0	0	1 (0,9)	
	Total				106	

Based on table 3, the majority of education is the diploma degree nurses, the correlation results with the majority of cross-cultural nursing competencies are sufficient. Based on the results of the ¬Spearman correlation test between classes of education and transcultural nursing competencies, obtained p-value = 0.318, which means there is no relationship between education classes with nursing competencies. Based on table 4, the relationship between respondents' education background characteristics with therapeutic communication, it obtains the statistical test results p = 0.726, which means there is no relationship between the education group with therapeutic communication.

Table 3. Length of Working Period with Transcultural Nursing Competencies (n = 106)

	Length of Work (Year)	Transcultural Nursing Competencies			Total (%)	*p-value*
		Good (%)	Enough (%)	Less (%)		
1.	1-5	5 (38,5)	8 (61,5)	-	13 (12,3)	0,155
2.	>5	16 (17,2)	71 (76,3)	6 (6,5)	93 (87,7)	
	Total				106	

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 4. Length of Working Period with Therapeutic Communication (n = 106)

	Length of Work (Year)	Therapeutic Communication			Total (%)	*p-value*
		Good (%)	Enough (%)	Less (%)		
1.	1-5	7 (53,8)	6 (46,2)	-	13 (12,3)	0,947
2.	>5	43 (46,2)	46 (49,5)	4 (4,3)	93 (87,7)	
Total					106	

According to table 5 and table 6, the majority of respondents' length of working period p is more than five years. In the relationship test, table-5 results obtained p = 0.155, which means there is no relationship between the length of working period with cross-cultural nursing competencies. In table-6, the results show there is no relationship between the length of work and therapeutic communication with p = 0.927.

Table 5. Origins with Transcultural Nursing Competencies (n = 106)

	Origins	Transcultural Nursing Competencies			Total (%)	*p-value*
		Good (%)	Enough (%)	Less (%)		
1.	Jember district	20 (21,5)	68 (73,1)	5 (5,4)	93 (87,7)	0,217
2.	Outside the district of Jember	1 (7,7)	11 (84,4)	1 (7,7)	13 (12,3)	
Total					106	

Table 6. Origins with Therapeutic Communication (n=106)

	Origins	Therapeutic Communication			Total (%)	*p-value*
		Good (%)	Enough (%)	Less (%)		
1.	Jember district	44 (47,3)	45 (48,4)	4 (4,3)	93 (87,7)	0,582
2.	Outside the district of Jember	6 (46,2)	7 (53,8)	1 -	13 (12,3)	
Total					106	

The area of origin of the respondents obtained results; there was no relationship between the city of birth with the implementation of transcultural nursing competencies and therapeutic communication.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Overview of transcultural nursing competencies

Table 7. Transcultural Nursing Competencies (n=106)

Transcultural Nursing Competencies	Good (%)	Enough (%)	Less (%)
	21 (19,8)	79 (74,5)	6 (5,7)
Total		106	

Table 7 describes that of the total respondents, the majority had cross-cultural nursing abilities in the sufficient category.

Overview of therapeutic communication

Table 8. Therapeutic Communication (n=106)

Therapeutic Communication	Good (%)	Enough (%)	Less (%)
	50 (47,2)	52 (49,1)	4 (3,8)
Total		106	

Table 8 describes that the description of respondents' therapeutic communication has results that are not too far apart between enough and good categories.

Relationship of transcultural nursing competencies with therapeutic communication

Table 9. Relationship of Transcultural Nursing Competencies with Therapeutic Communication (n=106)

Variable	Therapeutic Communication	
	p-value	*r*
Transcultural Nursing Competencies	0,001*	0,320

* There is a relationship.

Based on the Spearman correlation test, the relationship between cross-cultural nursing competencies with therapeutic communication showed p <0.005, with a p = 0.001. These results indicate that there is a relationship between transcultural nursing competencies with therapeutic communication. The correlation coefficient of the two variables shows the value of r = 0.320; it can be interpreted that the

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

strength of the relationship between the two variables of cross-cultural nursing competence and communication included in the low category.

4 Discussion

A person's education level will affect the level of his ability to accept and develop competence in the work environment [24]. Educational factors do influence not only transcultural nursing competencies but also several other factors that can affect nurses' transcultural nursing competencies. The previous research said that transcultural nursing competencies are significantly more influenced by other factors such as *self-efficacy*, transcultural ethics, experiences in visiting places that have cultural differences, cultural awareness, and self-perception [10]. Self-efficacy itself can increase knowledge if the task is carried out in groups and following standard operating procedures [1]. Efforts that can be done by hospitals to improve nurses 'ability to implement therapeutic communication is to increase *self-awareness* nurses. *Self Awareness* is intrapersonal awareness carried out in interpersonal relationships between nurses and patients consisting of nurses' ability to explore feelings, maintain ethics, be a *role model*, and be responsible when communicating or interacting with patients [4]. There are other factors besides education that can influence the implementation of therapeutic communication. This is consistent with previous research, which says that therapeutic communication is significantly related to several other factors, including factors such as work motivation, work climate, headroom support, and work colleague support [12].

The respondent's length of work has no relationship to transcultural nursing competencies and therapeutic communication. Efforts that need to be made by nurses to improve cross-cultural nursing competencies are by increasing *self-efficacy*. According to Bandura [7], motivation to learn is directly influenced by *self-efficacy*. *Self-efficacy* is closely related to behavior and motivation. Motivation is described as the power that will produce the success of an action. Self-efficacy itself can also improve the quality of life, which can be linked to an increase in the ability of nurses [2]. *Self-efficacy* in transcultural nursing is defined as the trust felt by nurses to master transcultural nursing skills. The skills used are skills needed to assess, plan, implement, and evaluate care that is culturally congruent [18]. Improving the application of nurse therapeutic communication is to provide training on therapeutic communication or conduct an evaluation by supervising patients about the implementation of therapeutic communication and how patient satisfaction with the implementation of therapeutic communication has been carried out by nurses [29].

The results of the correlation test between the area of origin with transcultural nursing competencies and therapeutic communication showed that they have no relationship. Jember district is an area that has a mixture of cultures, namely Javanese and Maduranese cultures [9]. This cultural mix led to the emergence of "pandhalungan" communities. This community upholds the values of manners, attitudes, and behavior in courtesy of daily interactions [27]. Therefore nurses must pay attention to their non-verbal behavior when using facial expressions and eye contact [13]. There are other factors besides the area of origin that are significantly related to transcultural nursing competencies. According to Herrero-Hahn [16], cultural competence is significantly related to *self-efficacy* nurse who is seen from several factors, namely special training in transcultural care, experience, and interactions with people from other countries both at home and abroad. Therapeutic communication is significantly related to job satisfaction, workload, and appreciation, which will ultimately motivate nurses to conduct therapeutic communication [25]. So it can be concluded that the

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

area of origin is not the only factor related to cross-cultural competence and therapeutic communication.

The competencies of nurses who were respondents in this study had enough categories. Transcultural nursing competencies of nurses are not optimal, because, in Indonesia, transcultural nursing competencies are still lacking attention. The majority of nurses have not yet been prepared for their cultural competence during the education process [20]. The existence of language differences causes nurses to experience difficulties when interacting with patients so that the cultural competence of nurses in understanding patient cultural differences has not yet been reached with maximal [21]. Multiculturalism between cultures has become an important concept for nursing education [14]. Health service providers must be aware of racial and ethnic differences in health services; this aims to reduce care gaps for minority groups or races [23].

The application of therapeutic communication, inadequate, and good categories does not have a significant difference. Improved services can be achieved when the implementation of therapeutic communication runs optimally. This communication can also affect patient satisfaction [8]. Nursing is a profession that is based on communication, which means that to provide the right nursing implementation and intervention, it takes the right way to deliver communication. Professional communication between nurses and patients is a basic pillar of nursing care [11].

The results showed a relationship between cross-cultural nursing competencies with nurses' therapeutic communication with low relationship strength. The presence of other factors can influence the strength of the relationship in this study. One factor that can influence this relationship is self-efficacy. Herrero's research [16], shows that nurse's self-efficacy influences cultural competence. In addition, the area of origin can affect individual perspectives in interpreting cultural differences, if individuals are unable to adapt to new environments, such as language differences, interpersonal relations, and regulations, there will be a *culture shock* [17]. Nurses can master transcultural nursing competencies and therapeutic communication well because nurses are able to adapt to the new cultural environment. Individuals who are able to make positive adjustments will not show excessive emotional tension but will be able to direct themselves to learn from experience and be objective [26]. The relationship of trust between nurses and patients can be achieved by understanding the patient's culture. Therefore nurses need to develop cross-cultural nursing competencies and therapeutic communication so that nurses can provide quality nursing services [5].

5. Conclusion

The conclusion of this study is that there is a relationship between transcultural nursing competencies with therapeutic communication with the power of relationships in the low category. Research respondents, in this case, nurses have transcultural nursing competencies and communication in a sufficient category. Characteristic data consisting of the majority of nurses are with vocational education, length of service of more than five years, and majority origin areas in Jember District.

References

[1] Afandi, A.T.: Peer Group Support Effectivity Toward The Quality of Life Among Pulmonary Tuberculosis and Chronic Disease Client : A Literature Review. Nurseline Journal. https://jurnal.unej.ac.id/index.php/NLJ/article/view/4901 (2016)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[2] Afandi, A.T & Kurniyawan, E.H.: Efektivitas Self Efficacy Terhadap Kualitas Hidup Klien dengan Diagnosa Penyakit Kronik. Jurnal baptis. http://jurnalbaptis.hezekiahteam.com/jurnal/index.php/PSB/issue/view/21 (2017)

[3] Ahmadi, N.: RSD dr. Soebandi Jember Ditunjuk sebagai Rumah Sakit Rujukan Regional Jatim. Available at: www.prosalina.com/2015/01/27/rsd-dr-soebandi-jember-ditunjuk-sebagai-rumah-sakit-rujukan-regional-jatim/ (2015)

[4] AIPNI.: Kurikikulum Inti Pendidikan Ners. Jakarta: Asosiasi Institusi Pendidikan Ners Indonesia (AIPNI). (2015)

[5] Ardalan, F.: Nursing Practice Today. *Nursing Practice Today*, 5(3), pp.326–334. (2018)

[6] Arifin, E.B.:Pertumbuhan Kota Jember dan Munculnya Budaya Pandhalungan. , 2, pp.28–35. Available at: www.prosalina.com/2015/01/27/rsd-dr-soebandi-jember-ditunjuk-sebagai--rumah-sakit-rujukan-regional-jatim/ (2012)

[7] Bandura, A.:Self Efficacy Mechanism in Psikological and Health Promoting Behavior, Prentice Hall, New Jersy (2010)

[8] Bolla, I.N.: Hubungan Pelaksanaan Komunikasi Terapeutik dengan Tingkat Kepuasan Pasien di Ruang Rawat Inap Melati RSUD Subang (2013)

[9] Cahyono, H.B.: Hambatan Komunikasi Antar Budaya Mahasiswa Thailand di Jember. *Jurnal ilmu Komunikasi*, 01(02), pp.114–128. (2018)

[10] Chang, L., Chen, S. & Hung, S.:Embracing diversity and transcultural society through community health practicum among college nursing students. *Nurse Education in Practice*. Available at: https://doi.org/10.1016/j.nepr.2018.05.004 (2018)

[11] Fakhr-Movahedi, A.: A qualitative content analysis of nurse – patient communication in Iranian nursing. *International Council of Nurses*, pp.171–180 (2011)

[12] Fitria, N. & Shaluhiyah, Z.: Analisis Pelaksanaan Komunikasi Terapeutik Perawat di Ruang Rawat Inap RS Pemerintah dan RS Swasta. *Jurnal Promosi Kesehatan Indonesia*, 9(2), pp.183–195 (2014)

[13] Giger, J.N. & Davidhizar, R.E.: *Transcultural Nursing* 5th ed. R. Carter & D. Davis, eds., United States of America: Mosby Elsevier. (2007)

[14] Goldman, N. & Trimmer, K.:Towards a Culturally Inclusive Model of Care: Quality Practice and Care Through the Lens of a Practising Nurse. , I, pp.123–149 (2014)

[15] Handayani, D. & Armina.: Faktor-faktor yang Berhubungan dengan Penerapan Komunikasi Terapeutik oleh Perawat pada Pasien di Ruang Rawat Inap Rumah Sakit Daerah Raden Mattaher Jambi. *Jurnal Akademika Baiturrahim*, 6(2), pp.1–11 (2017)

[16] Herrero, R.:Level of Cultural Self-Efficacy of Colombian Nursing Professionals and Related Factors. *Journal of Transcultural Nursing*, pp.1–9 (2018)

[17] Indrianie, E.: Culture Adjustment Training untuk Mengatasi Culture Shock pada Mahasiswa Baru yang Berasal dari Luar Jawa Barat. , 14(65), pp.149–158 (2012)

[18] Jeffreys, M. R.: Teaching Cultural Competence in Nursing and Health Care: Inquiry, Action, and Innovation. New York: Springer Publishing Company, Inc (2006)

[19] Kemenkes RI.: Buletin Jendela Data dan Informasi Kesehatan, Jakarta: Kementerian Kesehatan Republik Indonesia (2011)

[20] Novieastari, E., Gunawijaya, J. & Indracahyani, A.: Pelatihan Asuhan Keperwatan Peka Budaya Efektif. , 21(1), pp.27–33 (2018)

[21] Ogbolu, Y., Scrandis, D.A. & Msn, G.F.: Barriers and facilitators of care for diverse patients : Nurse leader perspectives and nurse manager implications. *Journal of Nuese Management*, (April), pp.1–8 (2017)

[22] Pieter, H.Z.: *Dasar-Dasar Komunikasi bagi Perawat*, Jakarta: Kencana. (2017)

[23] Raigal-aran, L., Ferré-grau, C. & Belzunegui-eraso, A.: Nurse Education Today The Spanish version of the Cultural Competence Assessment (CCA-S): Transcultural validation study and proposed refinement. *NurseEducation Today*, 72(October 2018), pp.47–53. Available at: https://doi.org/10.1016/j.nedt.2018.10.011. (2019)

[24] Rizal, A.A.F.: Hubungan Tingkat Pendidikan Perawat Instalasi Gawat Darurat dengan Kepatuhan Pelaksanaan Standar Prosedur Operasional Penerimaan Pasien Baru di RSUD AM Parikesit Tenggarong. *Jurnal Ilmu Kesehatan*, 5(1), pp.1–10. (2017)

[25] Sasmito, P.: Penerapan Teknik Komunikasi Terapeutik oleh Perawat pada Pasien. *Jurnal Kesehatan Poltekkes Ternate*, 11(2), pp.58–64. (2018)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[26] Suroso, Haryati, Rr Tutik Sri, M. & Novieastari, E.: Pelayanan Keperawatan Prima Berbasis Budaya Berpengaruh Terhadap Tingkat Kepuasan Pasien. *Jurnal Keperawatan Indonesia*, 18(1), pp.38–44. (2015)

[27] Warsiman.: Penguatan Identitas Budaya Lokal Jawa Timur: Mencari Jejak Kearifan Lokal. Malang: Universitas Brawijaya Press. (2015)

[28] Watson, J.: *Assessing and Measuring Caring in Nursing and Health Sciences* 2nd ed., New York: Springer Publishing Company. (2009)

[29] Yuliani, Tanto, H., & Ahmad, V. M.: Hubungan Pelaksanaan Komunikasi Terapeutik Terhadap Kepuasan Pasien Sectio Caesaria (SC) di Ruang Bersalin Rumah Sakit Panti Waluya Malang. *Nursing News, 1* (2), 21-27. (2016)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The Influence of Locus of Control on Burnout Among Nurses

Zifriyanthi Minanda Putri[1], Rika Fatmadona[2], Suci Meilisya[3]
{e-mail zifriyanthi@nrs.unand.ac.id}

[123]Faculty of Nursing, Andalas University

Abstract. Nurses can experience burnout because of high job demands and complex responsibilities. Burnout can occur because it is influenced by various factors, such as demographic factors and individual personality. The purpose of this research was to determine the relationship between the locus of control and nurses' burnout in Dr.Reksodiwiryo Hospital, Padang. This research used a quantitative study with a cross-sectional study design. The sampling technique used proportional random sampling and the sample size was 132 nurses. The instrument in this study was a questionnaire. Bivariate analysis using chi-square test. The results showed a significant relationship between locus of control and burnout (p = 0,000). Hospitals need to provide encouragement and support for increasing emotional intelligence in individual control loci so that nurses can improve their performance.

Keywords: burnout, locus of control, nurses.

1 Introduction

Burnout is a term used to recognize one type of stress. Burnout is a condition where individuals experience physical, mental, and emotional exhaustion due to stresses that occur in a long period accompanied by situations with high emotional involvement [1]. The prevalence of work burnout in nurses was higher than other health workers. Based on the results of research in Taiwan, nurses were the most who experienced work burnout in 66%, while other health workers such as doctors 38.6%, administrative staff 36.1%, and medical technicians 31.9% [2].

The results of a survey of the Indonesian National Nurses Association (INNA) in 2006, showed 50.9% of nurses experiencing work burnout who worked in four provinces in Indonesia. Besides, based on the results of Bella's research in 2017] in M. Djamil General Hospital Padang, most nurses experienced high levels of work burnout (53.8%) [3]. Burnout had negative consequences on nurses and influenced their activities. Burnout made a state of mind full and lost rationality that results in being overwhelmed with work, mental and emotional exhaustion, loss of work interest, and motivation. The results of research in the Philippines showed that burnout was one of the factors causing turnover intention in nurses [3].

Patients also felt the impact of nurses' burnout. Research results in Thailand found a link between burnout in nurses with adverse reporting from patients. Patients considered nurses to have poor service quality (16%), patients reported to fall (5%), errors in drug administration (11%), and occurrence of infections (11%) [4].

Burnout could happen because it was influenced by various factors, such as individual personality characteristics. Personality played a vital role in understanding multiple behaviors in the workplace. Some of these personality characteristics were hardiness, ability to control emotions, introverted and extroverted characters as well as a locus of control. Locus of control became the most prominent personality characteristics that had been studied in various occupations and organizational systems [5].

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Locus of control was a representation of the extent to which individuals could control the events that occurred in their lives so that it would affect the outcomes. Locus of control could control stress that occurred in individuals [6]. According to Rotter, there were two types of locus of control, namely internal and external. Individuals with an internal locus of control realized that the achieved results depend on the effort. Whereas, individuals with an external locus of control assumed that the control over themselves came from outsiders [7]. Each individual could have both types of locus of control but tended towards one type. The locus of control was not fixed but might change depending on the circumstances and conditions that accompanied it [8].

A preliminary study at Dr. Reksodiwiryo Hospital Padang found several nurses who said they felt saturated when the work was really tough. Working could be emotionally draining and working with people throughout the day required extra attempts. Based on interview with the nurses before collecting the data, 6 out of 10 nurses believed that getting something you desired was indeed the result of self hard work. Nurses performed tasks on their initiative without waiting for orders from their superiors. While another for nurses believed that what occurred in their work related to the workplace environment, for example, not only influenced by their actions but also by their superiors. Then, it could be because there are other factors such as luck or fate. This indicated that there were nurses who had the internal locus of control and also nurses who tended to have the external locus of control. The general purpose of this research was to determine the relationship between locus of control and the burnout of nurses' work in Dr. Reksodiwiryo Hospital Padang.

2 Method

This research was quantitative research with cross-sectional design. The sample of this research was 132 nurses who were chosen by using proportional random sampling technique, which corresponded to the criteria of inclusion. This research used the Work Locus of Control questionnaire and Masclah Burnout Inventory questionnaire as research instruments [9].

This research conducted a bivariate analysis using the chi-square test. If the p-value was ≤ 0.05, then there was a significant relationship between the independent and dependent variables, otherwise if the p-value was ≥ 0.05 then there was no meaningful relationship between the independent and dependent variables.

3 Result

Tabel 1. Frequency Distribution of nurse characteristics in Dr. Reksodiwiryo Hospital Padang (n = 132)

Characteristics	**f**	**Percentage (%)**
Age		
Late teens	16	12,1
Early adulthood	111	84,1
Late adulthood	5	3,8
Gender		
Female	98	74,2
Male	34	25,8
Education		
Vocational	81	61,4
Professional	51	38,6
Years of service		
< 10 years	129	97,7
> 10 years	3	2, 3

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Marital Status		
Not Married	56	42,4
Married	76	57,6

The results showed that nurses in Dr. Reksodiwiryo Hospital Padang in early adulthood (26-35 years) were 84.1%, female (74.2%), having vocational education (61.4%), having working period fewer than 10 years (97.7%), having the marital status of married (57.6%).

Table 2. Frequency Distribution of Nurses' Burnout in DR. Reksodiwiryo Hospital Padang (n=132)

Work Burnout	f	Percentage
Low	60	45,5
High	72	54,5

Based on table 2, it can be seen that more than half of respondents in Dr. Reksodiwiryo Hospital Padang have a high work burnout of 54.5%.

Table 3. Frequency Distribution of Nurses' Locus of Control in Dr. Reksodiwiryo Hospital Padang (n=132)

Locus of Control	f	Percentage
Internal	58	43,9
External	74	56,1

Based on table 3. it can be seen that more than half of respondents tend to have the external locus of control of 56.1%.

Table 4. Frequency Distribution of the Relationship Between the Locus of Control and Nurses' Burnout in Dr. Reksodiwiryo Hospital Padang (n = 132)

Locus of Control	Work Burnout				Total		p value
	Low		High				
	f	%	f	%	f	%	
Internal	37	63,8	21	36,2	58	100	0,000
External	23	31,1	51	68,9	74	100	

Based on table 4. it can be seen the analysis results of the relationship between the locus of control and nurses' burnout at Dr. Reksodiwiryo Hospital Padang. Nurses who have a locus of control tend to be external, with a high working burnout of 68.9% compared to nurses with the locus of control tend to be internal with a high

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

working burnout of 36.2%. The results of the statistical test obtained p-value = 0,000 (p <0.05). Then it can be concluded that there is a significant relationship between the locus of control with work burnout.

4 Discussion

The results showed that the nurses who had a locus of control tended to be external, with a high working burnout of 68.9% compared to nurses with the locus of control tended to be internal with a high working burnout of 36.2%. Further statistical test results obtained the value of p = 0,000 (p <0.05), which meant that there was a significant relationship between the locus of control variables and the burnout variables on nurses at Dr. Reksodiwiryo Hospital Padang.

Burnout was a condition where individuals experienced physical, mental, and emotional exhaustion due to stress that occurred in a long period accompanied by situations with high emotional involvement[1].
Locus of control could control stress that happened in individuals [6]. According to Rotter [7], locus of control as a personality type could be applied as one of the controllers in a person's life. Locus of control was individuals' way of having responsibility for events that happened both from inside and outside of their control. Asberg & Renk's research results [10] stated that someone with an external locus of control did negative problem-solving. Conversely, someone with an internal locus of control had healthier thinking and involved more in the surrounding environment. Each individual can have both types of locus of control, only the tendency of having one particular type.

The results also indicated nurses who had an external locus of control tended to have high burnout. It could be caused by the age factor of respondents (26-35 years) as much as 84.1%. Burnout was more often experienced by individuals at younger ages because they were not too ready for work, lack of adaptation, and discomfort in the work environment or had role obscurity [11]. According to Englar, the more mature one's age, the locus of control would develop into internal, and it would remain in late adulthood. This happened because the ability to judge something continued to increase so that individuals would adapt to logical reasoning models relating to the causal consequences that occurred between behaviors and motivations that stimulated behind them [8].

Based on respondents' tenure characteristics, the majority of nurses (66.7%) with more than 10 years of service tended to have the external locus of control. The work duration of an individual also influenced the development of the locus of control as it was impermanent and might change according to the accompanying conditions. The longer an individual worked, then the more the good and bad experiences that could affect an individual's locus of control.

Based on the characteristics of the respondents' marital status, most of the unmarried nurses (69.6%) tended to be the external locus of control. Marital status did not significantly affect the development of one's personality. It was influenced by the last experiences, stresses or pressures. Married people might develop a locus of control that tended to be internal because there were obligations, difficulties, needs, and also colleagues who could help and became a place to confide.

According to the concept of external personality by Rotter, an individuals' point of view that all events occurring in their lives were determined by external factors, namely the opportunity, luck, fate and the existence of power from other people. It meant that individuals who tended to have an external locus of control valued the world as something unpredictable.

Individuals with an internal locus of control were believed to be more success-oriented, friendly, competent, and independent than those with external personalities who were leery, dogmatic, and easy to shun. The internal locus of control would be possible to overcome negative experiences and work attitudes such as work stress, depression, anxiety, work burnout, high workload, role conflict, poor role transparency, and interpersonal conflict than the external [12].

The results of the questionnaire analysis, most respondents (56.8%) believed that the luck factor was the most needed to get the desired job. Meanwhile, when viewed from an internal personality, almost all

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

respondents (81.8%) seemed confident to do their job well if trying. The external locus of control believed that the success or achievements of a person were obtained from other people or the environment. Whereas the internal locus of control believed that success and achievements were obtained by personal endeavors. Thus the locus of control can affect the work burnout among nurses.

5 Conclusion

The results of the statistical test showed that there was a significant relationship between the locus of control with work burnout with p=0,000 (p<0,05) in Dr. Reksodiwiryo Hospital Padang. The hospital can provide encouragement and training in increasing emotional intelligence in the individual locus of control to increase nurses satisfaction at work.

References

[1] Tawale, E. N. (2011). Hubungan antara Motivasi Kerja Perawat dengan Kecenderungan mengalami Burnout pada Perawat di RSUD Serui – Papua. *Insan*, *13*(2), 74–84.

[2] Chou, L., Li, C., & Hu, S. C. (2014). Job stress and burnout in hospital employees : comparisons of different medical professions in a regional hospital in Taiwan. *Journal Online BMJ Open*, 1–8. https://doi.org/10.1136/bmjopen-2013-004185

[3] Labrague, L. J., Gloe, D. S., McEnroe-Petitte, D. M., Tsaras, K., & Colet, P. C. (2018). Factors influencing turnover intention among registered nurses in Samar Philippines. *Applied Nursing Research*, *39*(March 2017), 200–206. https://doi.org/10.1016/j.apnr.2017.11.027

[4] Nantsupawat, A., Nantsupawat, R., & Kunaviktikul, W. (2016). Nurse Burnout , Nurse-Reported Quality of Care , and Patient. *Journal of Nursing Scholarship*, 83–90. https://doi.org/10.1111/jnu.12187

[5] Srivastava, S. (2010). Job burnout and managerial effectiveness relationship : Moderating effects of locus of control and perceived Organisational support : An empirical. *Asian Journal of Management Research*, *2*(1), 329–347.

[6] Injeyan, M. C., Shuman, C., Shugar, A., Chitayat, D., Atenafu, E. G., & Kaiser, A. (2011). Personality Traits Associated with Genetic Counselor Compassion Fatigue : The Roles of Dispositional Optimism and Locus of Control. *National Society of Genetic Counselors*, 526–540. https://doi.org/10.1007/s10897-011-9379-4

[7] Rotter J. Generalized expectancies for internal versus external control of reinforcement. Psychol Monogr [Internet]. 1966;80(1):1,.

[8] Ghufron,. M.N. & Risnawita, R.S. (2010). Teori-Teori Psikologi. Jogjakarta: Ar. Ruzz Media

[9] Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Burnout. *Annual Reviews*, 397–422. https://doi.org/10.1146/annurev.psych.52.1.397

[10] Asberg & Renk's. (2012). Perceived Stress, External Locus of Control and Social Support as Predictors of Psychological Adjustment Among Female Inmates With or Without a History of Sexual Abuse. *International Journal of Offender Therapy and Comparative Criminology*.

[11] Triwijayanti, R. (2016). Hubungan Locus Of Control Dengan Burnout Perawat Di Ruang Rawat Inap Rumah Sakit Muhammadiyah Palembang. *Tesis*.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[12] Karabay, M. E., Akyüz, B., & Elçi, M. (2016). Effects of Family-Work Conflict, Locus of Control, Self Confidence and Extraversion Personality on Employee Work Stress. *Procedia - Social and Behavioral Sciences*, *235*(October), 269–280. https://doi.org/10.1016/j.sbspro.2016.11.030

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Therapeutic Group Therapy to Mother's Knowledge and Ability About Personality and Psychosocial Development of Preschool–Age Children

Shinta Dewi Kasih Bratha[1*], Meri Neherta[2], Dewi Eka Putri[3]
{shintadewikasihb@gmail.com[1], merineherta1963@gmail.com[2], dewi.adisyifazi@gmail.com[3]}

STIKes Tengku Maharatu, Riau. Indonesia[1]; Universitas Andalas, Padang. Indonesia[2,3]

Abstract. Mother is the first education for children to provide stimulation for preschool to prevent developmental disorder. Therapeutic group therapy is one of the alternatives that give knowledge to mothers in stimulating development, according to the age of the child. The study aimed to explain the influence of therapeutic group therapy on the knowledge and capability of mothers to stimulate the development of personality and psychosocial of preschool age. The design was "Quasi experiment pre-post test control group" with therapeutic Group therapy intervention for children of 3-4 years old. The results about the knowledge in the personality aspect acquired 0.760 which means there is no influence and the psychosocial aspect obtained 0.000 which means no influence. With the ability of the mother was acquired the personality aspects acquired 0.660 and psychosocial aspects of 0.568 which means there is no therapeutic influence of the group therapy on the ability of mothers in stimulating.

Keywords: therapeutic group therapy, knowledge, ability, simulation.

1 Introduction

Preschool age is a vulnerable period to the environment, it was short and can not be repeated which is a critical period that will have a big impact on the success of the child in the next growth process and its fulfillment depending on the adult [1]. Several aspects of child development that must be fulfilled in one of them is the development of personality and psychosocial.

The personality of preschool-age children should be considered. Because personality is a dynamic organization in the individual where the psychological system determines the character of behaviour and mind is adapted to the environment [2]. Child characters will be visible from the environment where the child is located. Meanwhile, psychosocial developments according to Erikson in preschool-age children are better known by the Initiative vs. guilt. Initiatives are used to possess and pursue various purposes and to suppress or delay a purpose. The goal to be inhibited will cause guilt or sinful feeling [3]. The psychosocial aspect affects the other aspects of the development in children. In other words, this aspect of development will affect child growth.

The development process of children who do not can affect the mental development of the child. Developmental disorders in children around the world are relatively high in the United States, ranging from 12-16%, Thailand 24%, Argentina 22% and Indonesia 13-18%. Developmental disorders are like delays in motor, cognitive, behavioral and language aspects.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The prevalence of child mental development disorders in Indonesia tends to increase in the last 6 years [4].

Unoptimal developments can lead to mental health problems. Some cases of psychiatric problems arise due to lack of concern as well as stimulation of parents given in children. It is evidenced that some such research in China is noted that 75% of perpetrators of violent acts of adulthood caused by a minor are not noticed by parents [5]. Meanwhile, teenagers in Australia have many criminal and free sex acts and become bullying actors in their schools. [6]. In the United States, children with mental health issues are reported as much as 13-20% during 1994-2011, and countries in Asia have 10-20% of children and adolescents experiencing mental health problems [7]. The high number of mental health disorders in preschool-age children can be overcome with efforts to improve growth stimulation and flowers in children [8]. In Indonesia, from 1000 children aged 4-15 years, 140 children are experiencing mental and emotional problems. It is a concern for mental health.

Early preventive efforts that can be done to prevent the number of mental health problems of children of preschool age is not increased by doing stimulation for growth and flowers in healthy children so that it can maintain the health status of the child [8]. A mother must be able to give the stimulus to her children and will be very influential given from the age of 24 – 48 months. According to Hurlock, at the age of 3 to 4 years there is physical maturity in the brain and the requirements system that can improve motor skills. If the maturity of this brain is accompanied by proper stimulation, it will result in optimal development in the child. Stimulation is supported by the mother's knowledge of children so stimulation can be given according to the developmental stage. According to Murphy (2017), the process of stimulation also can not be careless because only four kinds of stimulus that will be stored by the child who first recorded, the more believable, the more enjoyable and that lasts continuously.

Based on the results of the study of Feil (2017) in the United States, 75% of mothers have no knowledge of the development of children in accordance with their age. Based on data from the population Agency and the National Planning Family (2013), 90% of Indonesian mothers rarely provide continuous stimulation to their children. Mother is not able to provide stimulation according to seven development aspects of children. So that children's development is fully submitted to the school or other educational venues [10].

The government has been assisting parents in efforts to improve early childhood development through services such as Public Health Center that focuses more on the child's physical condition as well as early childhood education. Children who are in kindergarten will be given a stimulation by the teacher, but this is limited because the number of teachers with children who are not comparable. Must therefore be continued by the stimulation of the mother at home continuously [4]. Problems that are still found in mothers in providing developmental stimuli, include: mothers provide excessive stimulation only on the elements of cognitive development so it does not allow children to play outside the home [11].

Nurses play a role in helping mothers in providing knowledge to stimulate children so that their development is more optimal. Through mental health care services that must be available at the Public Health Center that will assist mothers in stimulating child development [12]. Nurses as part of healthcare profesionals need to take a community-based mental health care approach that is not only focused on mental disorders, but also to improve the quality of life of healthy people [8]. Mental health nursing services can be given in the form of interventions and therapies for individuals, families and groups. Various therapies that can be given by the nurse are family therapy, supportive and therapeutic group therapy. Therapeutic group Therapy is a promotive action to improve the development of the child to be optimal

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

thereby preventing mental health problems [13]. Therapeutic group therapy is a working groups that correspond to the development of certain age stage to increase the potency to achieve optimal growth and development according to the developmental stages as in the group of pregnant women, infants, Toddler, preschool, school, Adolescents, adults, and the elderly.

Therapeutic group therapy is very influential in mental development in every age. Therapeutic group therapy also affects the mental development such as the Maryatun (2014) in Banjarmasin and for preschool-age has also been done by Damayanti (2010) in Lampung that influences to the development of preschool age children.

Therapeutic group Therapy for preschool age children consists of five sessions, i.e study of preschoolers development and gross and motor stimulation, stimulation of cognitive and language development, stimulation of emotion and personality development, stimulation of moral, spiritual and psychosocial development, and evaluate child development. Therapeutic group therapy can educate and develop potential members and improve group quality in addressing problems both individually and in groups [12,14,15].

2 Method

Study Design

The design of the research was "Quasi experiment pre-post test control group" with therapeutic Group therapy intervention of preschool-age children. This research is conducted to see the difference of mother's knowledge in stimulating personality and psychosocial development for children aged 3 – 4 years before and after therapy in Padang Panjang. The instrument used in this study was taken from the Indonesian mental health module in 2016. The intervention group will be given therapy five times a meeting that will be assessed. The control group measured pre and post knowledge and ability.

Setting and Sample

Sampling in this study used random sampling by sampling clusters kindergarten by region in Padang Panjang and obtained 40 respondents for intervention groups and 40 respondents for control groups with inclusion criteria: (1) willing to be respondents, (2) have children aged 3-4 years old in Padang Panjang City, (3) willing to follow the therapy from the initial session to the end, (4) can read the writing.

Ethical Considerations

Before the collection of data, researchers participated in the ethics test at the Faculty of Medicine at Andalas University. Then the researcher asks for written approval from the participants, including explanations about the research and committed voluntary commitments from participants. Participants have the option to accept or refuse and all personal information is kept confidential. In addition, researchers also conduct expert tests before conducting research. Researchers obtain research permits and prepare enumerators (for data collection) that have been willing to assist in the activities of pre and post data collecting. After preparing the data collector, the researcher determined the research site of Padang Panjang Barat as the

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

control group and Padang Panjang Timur as the intervention group. Before being given therapy, the intervention and control groups were given a pre-test. Two days later therapy was given to the intervention group. One intervention group is composed of 5 respondents (mother and child). The intervention was conducted by 5 sessions in 3 meetings for 1 month.

3 Result

Below is mother's knowledge in the development of pre-school children before and after therapy in the intervention and control group.

Table 1. Mother's knowledge in the development of pre-school children before and after therapy in the intervention and control group

Group	Development	Pre/Post	N	Median	P Value
Intervention	Personality	Pre	40	4,00	0,020
		Post	40	5,00	
	Psychosocial	Pre	40	4,50	0,039
		Post	40	5,00	
Control	Personality	Pre	40	2,00	0,157
		Post	40	2,00	
	Psychosocial	Pre	40	2,00	0,083
		Post	40	2,00	

Table 1 describes the knowledge of mothers in stimulating the development of preschool-age children before and after therapeutic group therapy in the intervention and control group. Based on statistical test results obtained the value of the impact on the development of personality is 0.020 which means that there is the influence of therapeutic group therapy on the knowledge of mothers stimulates the development of personality in the intervention group. While the psychosocial development obtained a value of 0.039 which means there is the influence of therapeutic group therapy on the knowledge of mothers in stimulating psychosocial development in the intervention group.

Meanwhile, in the knowledge control group of mothers in stimulating the development of personality acquired value 0.157 which means there is influence before and after the administration of therapy. The knowledge of the mother in the psychosocial development obtained 0.083 which means there is no influence before and after the administration of therapy.

Table 2. Influence of Mother's Knowledge in Stimulated the development of pre-school child after therapy

Development	Group	N	Median	P Value
Personality	Intervention	40	5,00	0,760
	Control	40	2,00	
Psychosocial	Intervention	40	5,00	0,000
	Control	40	2,00	

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 2 illustrates the influence of therapeutic group therapy on the knowledge of mothers in stimulating the development of preschool-age children. Based on the table can be seen the personality development obtained the value of p value 0.760 which means there is no meaningful difference between the intervention and control group after intervention. Meanwhile, psychosocial development obtained p value 0.000 which means there is a meaningful difference between the intervention and control group after intervention.

Table 3. Mother's ability to stimulate the development of pre-school childhood before and after therapy in the intervention and control group

Group	Development	Pre/Post	N	Median	P Value
Intervention	Personality	Pre	40	18,50	0,059
		Post	40	19,00	
	Psychosocial	Pre	40	11,00	0,102
		Post	40	11,00	
Control	Personality	Pre	40	5,00	0,317
		Post	40	5,00	
	Psychosocial	Pre	40	21,00	0,157
		Post	40	21,00	

Table 3 describes the ability of mothers to stimulate the development of preschool-age children before and after therapeutic group therapy in intervention and control groups. Based on statistical test results obtained the value of the impact on the development of personality is 0.059 which means that there is no influence of therapeutic group therapy on the ability of mothers to stimulate the development of personality in the group Intervention. While the psychosocial development obtained a value of 0.102 which means there is no influence of therapeutic group therapy on the ability of mothers to stimulate psychosocial development in the intervention group.

Meanwhile, in the control group of mother's ability in stimulating personality development acquired value 0.317 which means there is no influence before and after the administration of therapy. Maternal ability in psychosocial development obtained 0.157 which means there is no influence before and after the administration of therapy.

Table 4. Influence of Mother's Ability to Stimulated the development of pre-school Child after therapy

Development	Group	N	Median	P Value
Personality	Intervention	40	19,00	0,660
	Control	40	5,00	
Psychosocial	Intervention	40	11,00	0,568
	Control	40	21,00	

Table 4 describes the influence of therapeutic group therapy on mother's ability to stimulate the development of preschool-age children. Based on the table can be seen the personality development obtained the value of P value 0.660 which means there is no meaningful difference between the intervention and control group after intervention. Meanwhile,

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

psychosocial development obtained p value 0.568 which means there is a meaningful difference between the intervention and control group after intervention.

4 Discussion

The effect of therapeutic group therapy on the knowledge of mothers in providing stimulation of children of pre-school age

After the therapeutic group therapy obtained the results of therapy does not affect on the knowledge of mothers in providing stimulation of the development of preschool-age. This happens because the respondent considers that the personality is already there and cannot be trained. It is also supported by the analysis of the questionnaire from the knowledge of mothers in stimulating the development of children's personality that needs to be improved, namely children learn to delay wishes, know and can be performed in public. These things are an overview of the child's personality.

Personality is a dynamic organization in the individual where the psychologic system determines the character of behaviour and mind in adapting to the environment [2]. Personality can be interpreted as the quality of individual behaviour that appears to make self-adjustment to the environment uniquely [4]. Personality is influenced by several factors such as physical, intelligence, family, peers and culture.

Therapeutic group therapy can increase the knowledge of mothers in psychosocial stimulation Preschool-age, because before the administration of therapy, respondents did not know about the psychosocial aspect. Even many questions that researchers get when administering therapy in the psychosocial aspect. Starting with the ability of the child to help quite a simple house, play with household appliances, and enjoy playing with friends with a playground like according to, sex visit the pillars, friends or close parents who accompany it, Create family albums, creative play with friends, play sales and shop in the store included in child stimulation to the aspect. This is what causes meaningful changes before and after the administration of therapy.

Through the provision of stimulus or stimulation can make participants the learning process [17]. When the stimulus is being given more, it will enrich a person in a matter. The therapeutic method given in this intervention is a very suitable stimulation in the learning process for adults [18]. One factor that causes the goal to not be achieved maximal is during the implementation of therapy, some mothers bring other age children in the activity. So attention is not very focused even though researchers have worked to the fullest extent possible focus for each individual. However, the character of the Indonesian people who have children more than one child in one family gives their own challenges for the study.

Crowded environmental factors can affect the outcome of therapy because it can interfere with the process of absorption of information [16]. The number of groups that are not ideal can interfere with the implementation of therapy from start to finish, because the concentration of respondents will be split [12]. Researchers recommend the implementation of this therapy, for those who have other toddlers can stay with family or neighbors so that the respondent can focus on running the therapy.

In the control group, there is no meaningful change. Mothers knowledge in the control group can actually high increase through the introduction of pre-test and post-test. Because the problem of pre-test and post-test is a judgment that must be achieved by the respondent. Reading about it can remind respondents what they should know about the developmental

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

aspects of preschool-age children. Because in adult learning, an individual will believe a new knowledge if they feel needed so that there will be a learning process formed by the individual itself .

Increased knowledge of mothers in the therapeutic group and did not demonstrate the importance of therapeutic group therapy in preschool-age children to improve child development according to their age. However, in the administration of this therapy should focus on each respondent to optimize the results of this research.

Based on the statistical test results there was a difference between intervention groups and control groups after treatment. It is also supported by the results of the evaluation of the workbooks that have been filled by the mother during therapeutic administration. At session 1, respondents were able to convey the progress achieved by the child and the problems faced. There was an increase from every week until the weeks of the group. Mothers are able to convey the traits and tasks of the development of healthy preschoolers, mothers are able to mention the developmental deviations of preschool-age children and explain how to stimulate the motor development that each week has increased.

In Session 2 can also be seen improvements based on the evaluation of the workbooks. Respondents were able to explain how to stimulate cognitive development and language. This also happens to increase every week. In session 3 mothers are also able to explain how to stimulate the development of children's emotions and personalities that increase each week. While session 4 can be seen from the evaluation of that have workbooks has an increase every week, the mother is able to explain how to stimulate moral, spiritual and psychosocial development in children. The evaluation of the workbooks is very important to see because the success assessment of therapeutic delivery can not only be accessed from statistical test results.

Effect of therapeutic Group Therapy (TKT) on mother's ability to provide stimulation of children in pre-school age

The Therapeutic Group Therapy on mothers ability to stimulate the development of preschool-age children is given that there is no influence on the personality and psychosocial development of preschool-age children. Improving the ability of mothers in providing therapy is the effort taken by the therapist so that the learning process where the respondent experienced the training process in several sessions. Some respondents who may have previously been able to in some aspects in stimulating stimulation are required to perform regularly and repeated for optimal child development. It is hoped that these therapies are expected to be familiar with the mother. As for mothers who never stimulate a child, they are expected to be able to do the exercise regularly.

The process of training that respondents conducted in this study is a refinement of the ability to continue certain activities and is a fundamental activity of learning, both exercise and habituation and will develop with Awareness of each individual [17]. Notoadmojo (2012) says that before a person adopts new behavior in him, the sequential process is (1) awareness, (2) interest, (3) evaluation, (4) trial, (5) adoption. According to the researchers, the difference in the ability before and after doing therapy to the mother in the intervention group because it has undergone the process.

With therapeutic group therapy, it can meet the need for developmental stimulation and skills on how to stimulate and influence mother's readiness to meet the needs of the development stage of preschool-age children. The mothers ability to provide stimulation of

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

this development needs to be trained continuously to get optimal results and become a good habit that will continue to be done [17].

Therapeutic group therapy is more emphasis on maternal ability to provide developmental stimulation in children. Groups of mothers are given knowledge and exercises structured according to the modules. Mother groups are given examples of developmental stimulation and are also required to commit to perform daily stimulation activities according to the stages that have been taught and fill the workbooks that have been shared. Increased maternal ability occurs in several aspects such as motor, language, cognitive, and personality. Although some other aspects do not occur a meaningful difference. But hopefully with the change in the ability of mothers in stimulating stimulation is expected to increase the child's self-esteem to motivate children to try various aspects of skills that they have not mastered before. According to Erikson, the success of children doing new skills will improve the development of child initiatives because the initiative attitude is an effort to make something real, so that in this age parents especially mothers can nurture children by encouraging children to realize his ideas [19].

5 Conclusion

The knowledge of mothers in the development of personality does not influence therapeutic group therapy while in psychosocial development there is an influence on children of preschool age. Therapeutic group therapy also does not affect on maternal ability in stimulating the personality and psychosocial development of preschool-age children. This can happen because the ability must be trained many times to get the desired results. With the administration of this therapy, it is expected to improve the development of preschool age especially in the development of personality and psychosocial. Advice for the next researcher, optimize the of therapeutic and conditioned participants in order to focus on the implementation of therapy. We recommend that participants only carry preschool-age children, in which the conducive environment makes participants focus in receiving therapy

References

[1] Shoshani A, Slone M, Prino LE. Positive Education for Young Children : Effects of a Positive Psychology Intervention for Preschool Children on Subjective Well Being and Learning Behaviors. 2017;8(October):1–11.

[2] Leaf PJ, Ph D, Olin S, Ph D, Sampson NA, Kessler RC, et al. NEW RESEARCH School Mental Health Resources and Adolescent Mental Health Service Use. 2013;52(5):501–10.

[3] Xing S, Gao X, Song X, Archer M, Zhao D, Zhang M. Chinese Preschool Children ' s Socioemotional Development : The Effects of Maternal and Paternal Psychological Control. 2017;8(October):1–9.

[4] Cameron XJL, Eagleson KL, Fox NA, Hensch TK, Levitt X. Social Origins of Developmental Risk for Mental and Physical Illness. 2017;37(45):10783–91.

[5] Balseviciene B, Sinkariova L, Andrusaityte S. Do Green Spaces Matter ? The Associations Between Parenting Stress , Child Mental Health Problems And Green Spaces. Procedia - Soc Behav Sci [Internet]. 2014;140:511–6. Available from: http://dx.doi.org/10.1016/j.sbspro.2014.04.462

[6] Mills R, Scott J, Alati R, Callaghan MO, Najman JM, Strathearn L. Child Abuse & Neglect Child maltreatment and adolescent mental health problems in a large birth cohort

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

&. Child Abuse Negl [Internet]. 2013;37(5):292–302. Available from: http://dx.doi.org/10.1016/j.chiabu.2012.11.008
[7] Nikolaev EL, Baranova EA, Petunova SA. Mental Health Problems in Young Children : the Role of Mothers ' Coping and Parenting Styles and Characteristics of Family Functioning. Procedia - Soc Behav Sci [Internet]. 2016;233(May):94–9. Available from: http://dx.doi.org/10.1016/j.sbspro.2016.10.152
[8] Years I. Promoting Early Childhood Mental Health. 2014;
[9] Kim MH, Shimomaeda L, Giuliano RJ, Skowron EA. Journal of Experimental Child Intergenerational associations in executive function between mothers and children in the context of risk. J Exp Child Psychol [Internet]. 2017;164:1–15. Available from: http://dx.doi.org/10.1016/j.jecp.2017.07.002
[10] Feil EG, Frey A, Walker HM, Small JW, Seeley JR, Golly A, et al. Preschool First Step to Success. 2017;36(3):151–70.
[11] Spielfogel JE, Leathers SJ, Christian E, Mcmeel LS. Children and Youth Services Review Parent management training , relationships with agency staff , and child mental health : Urban foster parents â€™ perspectives ☆. Child Youth Serv Rev [Internet]. 2011;33(11):2366–74. Available from: http://dx.doi.org/10.1016/j.childyouth.2011.08.008
[12] Damayanti R. Pengaruh Terapi Kelompok Terapeutik terhadap Kemampuan Ibu dalam Memberikan Stimulasi Perkembangan Inisiatif Anak Usia Prasekolah di Kelurahan Kedaung Bandar Lampung 2010. 2010;
[13] Nugter MA, Engelsbel F. Outcomes of FLEXIBLE Assertive Community Treatment (FACT) Implementation : A Prospective Real Life Study. 2015;
[14] Beiser M, Hou F, Hyman I, Tousignant M. Poverty , Family Process , and the Mental Health of Immigrant Children in Canada. 2002;92(2):220–7.
[15] Enns J, Holmqvist M, Wener P, Halas G, Schultz A, Goertzen L, et al. Mapping interventions that promote mental health in the General Population: A scoping review of reviews. Prev Med (Baltim) [Internet]. 2016; Available from: http://dx.doi.org/10.1016/j.ypmed.2016.02.022
[16] Gwinner K. Arts, therapy and health: Three stakeholder viewpoints related to young people's mental health and wellbeing in Australia. Arts Psychother [Internet]. 2016; Available from: http://dx.doi.org/10.1016/j.aip.2016.05.016
[17] Bhinnety M. Struktur dan Proses Memori. Soc Sci Med. 2012;16(2):74–88.
[18] Ur A, Govt R. Mothers' Knowledge about Child Development. 2016;(September).
[19] Press THEG. Handbook of Preschool Mental Health. 2017.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Risk Factors of Early Menarche Among Adolescent Girls

Azrimaidaliza[1], Fitri Nia[2], Fitrah Ilahi[3], Juliana P. Dwiyana[4], Rauza S. Rita[5]
{Azrimaidaliza@ph.unand.ac.id, fitrinia25@gmail.com , fitrahyaser@gmail.com , julianaputridwiyana@gmail.com , rauzasukmarita@med.unand.ac.id }

Nutrition Program Study, Faculty of Public Health, University of Andalas, Indonesia[1,2,3,4], Biochemist of Department, Faculty of Medicine, University of Andalas, Indonesia[5]

Abstract. Early menarche may have a contribution to the risk of degenerative diseases at older age. Fast food was associated with early menarche among girls. This study aimed to examine the risk factors of early menarche. The cross-sectional study was used and it was located in selected junior high school, Padang city. Data was collected by standardized questionnaires for fast food consumption, physical activity, nutritional status, pocket money, exposure to the opposite sex and mass media. A total of 159 female adolescents participated in this study and early menarche was 27%. The result showed that mother's age at menarche (p value=0.0001;OR=13.76), frequency of fast food (p value=0.001;OR=9.986), fat intake of fast food consumption (p value=0.013;OR=15.589), physical activity (p value=0.012;OR=4.303), nutritional status (p value=0.035;OR=3.47) and pocket money (p value=0.004;OR=7.416) were the risk factors of early menarche. By regression logistic analysis, the calorie intake was the protective factor and fat intake of fast food consumption was the dominant factor of early menarche. An adolescent should eat food in balance composition according to their needs and reduce fast food consumption to prevent the negative consequences of early menarche.

Keywords: adolescents, fast food consumption, nutritional status, menarche.

1 Introduction

The number of adolescent age increase all over the world. Adolescent age is the transition of childhood and young adults which marked with pubertal development and sexual maturation of organ reproductive [1]. Some changes happen especially among adolescent girl which is included the first experience to have the menarche. From the survey, there is a variation in the timing of menarche among girls [2]. Therefore, a previous study reported that early or delayed pubertal development could be associated with poor health status in the next adult life, such as the risk of degenerative disease [3]. Besides, girls who had age at menarche earlier might have the opportunity to close to sexual activity according to pregnant and become a mother at a young age.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

In the world, age at menarche happens at age 12 years with variation age 0.3 until 0.4 years (America, Brazil and Malaysia). A national survey in Indonesia showed that half of adolescent girls had menarche at 12 years with 0.96 years variation [4]. Menarche which happen before 12 years called early menarche and menarche which happen after 14 years called late menarche. Indonesia is the country with the position number 15 from 67 countries which have an increase of age at menarche 0.145 year per decade. According to Basic Health Survey of Indonesia year 2010, it was identified that 60.1% of adolescent girls had age at menarche, with 1.7% had age at menarche age 9 until 10 years, 20.3% 11 until 12 years and 38.1% 13 until 14 years [5].

Several studies showed the internal and external factors that have an association with early menarche. Internal factor, such as maternal menarche status (genetic) and external factor including life styles such as nutrient intake including fast food consumption, physical activity and nutritional status had related with the age at menarche among girls[6] Role of mass media and friends have also contribution on behavioural pattern in choosing food intake, like practical food including fast food intake which has characteristics are easy to get and ready to eat) [7].

2 Method

The cross-sectional design was used to conduct this study among adolescent girls in selected junior high schools in Padang city, it was MTsN 6 Model and SMPN 16 from February until June 2018. Population study was all female students at VII class of 318 girls with distribution each school was 163 from MTsN 6 Model and 155 from SMPN 16. A total of 159 samples based on Slovin sample size calculations were included in the study with the exclusion criteria was a girl whose the age at menarche lower than age 11 years (to minimize the recall bias) and incomplete questionnaires. Subjects of the study were recruited by systematic random sampling and taken proportionally according to the number of female students in each school with distribution samples were 82 female students from MTsN Model and 77 female students from SMPN 16 Padang.

Data were collected by interview through the standardized questionnaires that consists of age at menarche of girls and girl's mother, frequency of fast food, energy intake of fast food, carbohydrate intake of fast food, fat intake of fast food, protein intake of fast food, nutritional status, physical activity, pocket money, exposure of mass media and opposite to sex. Other data were also collected regarding the characteristics of girl's parents including education level and occupation. Age at menarche was determined from self-reported about the date of first menstruation by respondents. We divided age at menarche into two categories which early menarche category, if age at menarche of female students is lower than age 12 years and normal menarche, if age at menarche of female students is age 12 years until age 14 years.

Food intake of female students focus on fast food consumption was collected using Semi-Quantitative Food Frequency Questionnaires (SQFFQ). This questionnaire was consist of all food items which consumed by people in West Sumatera Province and not only get the quantitative data but also qualitative data regarding time of consumption per day, week, month and year. Respondents were asked what kind of fast food they were consumed at a certain time and how much they consumed in each meal. To help them to memorize, the data collectors used food book with the pictures and portion. Based on the recommendation in Indonesia, consuming of snack food, including fast food was better if school children consume less than

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

30% of Recommended Dietary Allowances or RDA from energy, carbohydrate, fat and protein intake. Female students ages 10 to 12 years should consume food in the proper number, were 2000 calories, 275 grams of carbohydrate intake, 67 grams of fat intake and 60 grams of protein intake per day. Meanwhile, for female students age 13 to 15 years should consume food containing 2125 calories, 292 grams of carbohydrate intake, 71 grams of fat intake and 69 grams of protein intake per day (RDA of Indonesia year 2014). After collecting the data of fast food intake, we divided the data into two categories, are high intake (> 30% RDA Indonesia) and enough intake (⩽ 30% RDA). For the frequency of fast food, we categorized based on the non-normality of the data into often (> median) and rare category (⩽ median). Physical activity of the female students was assessed by Physical Activity Questionnaire-Children (PAQ-C). This questionnaire was adopted from Kowalski KC year 2004, consist of some questions with the options about activities on sport in a week and how the students fill their leisure time outside school or at home. The respondents were asked to choose the option related to the fact of their activities every day. Then, physical activity factor is divided into the high category if the score more than 84 points (> 84 points) and low category if the score less than 84 points (⩽ 84 points). Beside of nutritional status of students (over and not over nutritional status) was examined through body mass index according to age.

The collector of data had a nutritional education background and experienced in research. Before data collection, the coaching of the enumerator was done to have the same perceptions about what is the purpose of the study and how the strategies in collecting data to increase the quality of data.

The data was presented by mean, standard deviation, frequency and percentage. The chi-square test was undertaken to examine the association between variables with p value lower than 0.05 as the indicator of the significant. Risk factors of early menarche including to identify the dominant factor of age at menarche was determined by logistics regression model. The significant risk factor was reported through Odds Ratio (OR) with 95% confident interval if the p value lower than 0.05.

The research feasibility was checked by the Academic Committee of Nutrition Study Program, Public Health Faculty, Andalas University, Padang, West Sumatera Province, Indonesia. Moreover the informed consent was signed by all respondents before collecting the data as the proved acceptance being the respondent.

3 Results

The result showed that the mean of mother's age at menarche was 12 years with 0.958 years variation (minimum age 11 years and maximum age 15 years) and the mean of age at menarche for adolescent girl was age 12 years with 0.7003 variations (minimum age 11 years and maximum age 14 years). Based on the result, we categorized age at menarche into early and normal menarche. The percentage of early menarche among female students (23.3%) was slightly higher than the percentage of early menarche among mothers (20.85%). Then we found that frequency of fast food, energy intake of fast food, protein intake of fast food, fat intake of fast food, carbohydrate intake of fast food, nutritional status, pocket money and exposure of mass media were higher percentage on the early puberty compared with normal puberty among adolescent girls. Others data we summarized in table 1 below:

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 1. Risk Factor of Age at Menarche among Adolescent Girls

Variables	Age at menarche				Total		P value*)	PR (95% CI)
	Early		Normal					
	f	%	f	%	f	%		
Mother's age at menarche								
Early	17	51.5	16	48.5	33	100.0	**<0.001**	5.631
Normal	20	15.9	106	84.1	126	100.0		(2.447 to 12.597)
Frequency of fast food								
Often	31	44.3	39	55.7	70	100.0	**<0.001**	10.996
Rarely	6	6.7	83	93.3	89	100.0		(4.238 to 28.528)
Energy intake of fast food								
High	17	32.1	36	67.9	53	100.0	0.097	2.031
Enough	20	18.9	86	81.1	106	100.0		(0.955 to 4.318)
Protein intake of fast food								
High	17	51.5	16	48.5	33	100.0	**<0.001**	5.631
Enough	20	15.9	106	84.1	126	100.0		(2.447 to 12.957)
Fat intake of fast food								
High	16	48.5	17	51.5	33	100.0	**<0.001**	4.706
Enough	21	16.7	105	83.3	126	100.0		(2.056 to 10.770)
Carbohydrate intake of fast food								
High	16	29.6	38	70.4	54	100.0	0.245	1.684
Enough	21	20.0	84	80.0	105	100.0		(0.792 to 3.583)
Physical activity								
High	20	32.8	41	67.2	61	100.0	**0.041**	2.324
Low	17	17.3	81	82.7	98	100.0		(1.100 to 4.909)
Nutritional status								
Over nutrition	13	37.1	22	62.9	35	100.0	**0.049**	2.462 (1.087 to 5.577)
Not over	24	19.4	100	80.6	124	100.0		
Pocket money								
High	33	29.5	79	70.5	112	100.0	**0.004**	4.491
Low	4	8.5	43	91.5	47	100.0		(1.492 to 13.519)
Exposure to the opposite sex								
No	28	21.9	100	78.1	128	100.0	0.542	0.684
Yes	9	29.0	22	71.0	31	100.0		0.283 to 1.653
Exposure of mass media								
No	10	30.3	23	69.7	33	100.0	0.399	1.594
Yes	27	21.4	99	78.6	126	100.0		0.678 to 3.751

From table 1, we can explained that age at menarche of mother's girl (p=<0.001), frequency of fast food (p=<0.001), protein intake of fast food (p=<0.001), fat intake of fast food (p=<0.001), physical activity (p=0.041), nutritional status (p=0.049) and pocket money (p=0.004) had associated with the age at menarche among junior high female students.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Moreover, analysis multivariate by regression logistics was done to examine the dominant factor associated with age at menarche among junior high female studentss. Regression logistics result was presented in table 2:

Table 2. Multivariate analysis of risk factors of early age at menarche

Variables	POR	95% CI	P value*)
First model			
Mother's age at menarche	12.284	3.259 to 46.303	0.001
Frequency of fast food	10.851	2.787 to 42.257	0.001
Energy intake of fast food	0.000	0.000 to 0.000	0.998
Protein intake of fast food	1.838E8	0.000 to 0.000	0.998
Fat intake of fast food	9.702	0.516 to 182.407	0.129
Carbohydrate intake of fast food	1.099	0.235 to 5.140	0.904
Physical activity	4.104	1.259 to 13.372	0.019
Nutritional status	3.016	0.915 to 9.936	0.070
Pocket money	7.305	1.829 to 29.168	7.305
Exposure to the opposite sex	0.721	0.174 to 2.987	0.652
Exposure of mass media	0.798	0.196 to 3.254	0.753
Last model			
Mother's age at menarche	13.276	3.707 to 47.542	0.001
Frequency of fast food	9.986	2.619 to 38.069	0.001
Energy intake of fast food	0.054	0.006 to 0.473	0.008
Fat intake of fast food	15.589	1.729 to 135.609	0.013
Physical activity	4.303	1.372 to 13.497	0.012
Nutritional status	3.427	1.087 to 10.800	0.035
Pocket money	7.416	1.875 to 29.339	0.004

The final result of multivariate model showed the age at menarche of girl's mother (p=0.001; OR=13.276; 95%CI=3.707 to 47.542), frequency of fast food (p=0.001; OR=9.986; 95%CI=2.619 to 38.069), fat intake of fast food (p=0.013; OR=15.589; 95%CI=1.729 to 135.609), physical activity (p=0.012; OR=4.303; 95%CI=1.372 to 13.497), nutritional status (p=0.035; OR=3.427, 95%CI=1.087 to 10.800) and pocket money (p=0.004; OR=7.416; 95%CI=1.875 to 29.339) are the determinant factors of early age at menarche among female students and the dominant factor is fat intake of fast food (p=0.013; OR=15.589; 95%CI=1.729 to 135.609). Female adolescents which fat intake of fast food on high category had an opportunity 15 times to be early puberty than female adolescents which fat intake of fast food in enough category. However, energy intake from fast food consumption is the protective factor of early age at menarche if the female students consume less fast food or fat intake of fast food as the source of energy on less category it might be had an opportunity for girls to get the normal menarche.

4 Discussion

Our finding in Padang city about the mean of age at menarche is in line with the Indonesian survey and previous studies (age 12 years). The result also found that there is a

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

variation of the maximum age the menarche between female students with her mother according to genetic. It means there is an increased maximum age at menarche for the late menarche of female students compared with her mother. Percentage of early menarche category among female students is a little higher (23.3%) compare with percentage of early menarche category among girl's mother (20.8%). It could be happened because of external factors, such as social media and adolescent's environment also take a part on adolescent behaviour and then timing of puberty. Several factors were supported the result, such as energy intake, carbohydrate intake, fat intake, protein intake of fast food, which were also higher percentage at the early age at menarche than normal age at menarche among girls.

From the multivariate analysis with all factors were analysis together in the regression logistic using determinant model, it was found that fat intake of fast food is the dominant factor of age at menarche among junior female students. As we know that fast food are consist of high in fat and energy, but low in nutrient. It means fast food typically contains high levels of energy from fat with little vitamins or minerals. According to the recommendation for snack food consumption in Indonesia, it is suggested to consume snack food, including fast food no more than 30% of the total energy intake of food for children. Fat intake has a correlation with the greater excess of body fat, then it is associated with the increasing nutritional status tend to overweight or obese. Female adolescents with excess fat intake and weight will affect the maturity of human sexuality and it makes menarche occur earlier. The data also supported with the frequency of fast food was one of the determinant factors which have higher contribution to early puberty among girls after fat intake of fast food and genetic. The result noted that almost half of students had the frequency of fast food on often category. It was also informed that more than 20% of female students consume fast food, such as fried chicken, fish fillet and hamburger more than 2 until 3 times a week. This condition could be lead to the overweight and obesity status among girls, next to the precocious puberty among girls might be happened if they consume that kind of fast food routinely every week[8].

If we discuss fast food, we also concerned about the animal protein including chicken or poultry and beef which served by the restaurants with the large size, then it might be related to the early menarche among girls. In the present study, protein intake of fast food did not significantly associate with the early menarche. It could be explained because the animal protein is usually prepared with too much unhealthy saturated fat through deep frying on fast food processing, such as fried chicken, fish and meat. However, fat intake of fast food was the dominant factor which has associated with early menarche among female adolescents in this study. From the previous studies, we got the information that increased consumption of animal protein (chicken and beef) triggered early development of pubertal signs among girls [9]. Other current findings indicated that a higher meat intake during the young age might be related to the early puberty because of a protein-mediated enhancement of growth factor expression [10]. Another study also found that children with the highest intakes of animal protein experienced it up to 7 months earlier for age at menarche [11]. Contrast evident with the consumption of non-animal products, like vegetable intake showed the fact that higher consuming vegetable food could be related to the delay menarche. According to the result, school girls should consume an adequate and balanced healthy diet, consume foods containing a good source of energy from carbohydrate and fat in a proper number and frequency regarding their needs.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

5 Conclusion

The Present study reported that age at menarche of junior female students in the selected junior high school tended to a normal age, average age 12 years, but it was still found more than 20% adolescent girls with early menarche category, slightly higher than percentage of early menarche among girl's mother. The important finding was fat intake of fast food was an important factor which has related to early menarche among junior high female students. It is a recommendation for girls to consume healthy food in balance consumption according to their needs, reduce consume unhealthy diet to get the normal nutritional status. Nutrition promotion from the health or nutrition worker should be held routinely at school to give information about balance nutrition at the young age so they will practice the healthy dietary habits in the daily life.

References

[1] A. Gaudineau, V. Ehlinger, C. Vayssiere, B. Jouret, C. Arnaud, and E. Godeau, "Factors associated with early menarche: Results from the French health behaviour in school-aged children (HBSC) study," *BMC Public Health*, 2010.

[2] E. P. K. Ameade and H. A. Garti, "Age at menarche and factors that influence it: A study among female university students in Tamale, Northern Ghana," *PLoS One*, 2016.

[3] R. Hariani, N. Vikie, Y. Dhevinia, and S. Bardosono, "Early-menarche as Determinant Factor for Metabolic-risks: An Epidemiology Perspectives among Adolescent Girls Age 13-15 years old in Jakarta-Indonesia," *World Nutr. J.*, vol. 1, no. 2, pp. 66–73, 2018.

[4] Indonesian Health Ministry, "Health Profile of Indonesia. 2016t." Indonesia Health Ministry, Jakarta, p. Vol 70, 2016.

[5] Kementerian Kesehatan Republik Indonesia, "Riset Kesehatan Dasar Badan Penelitian dan Pengembangan Kesehatan RI." Kementerian Kesehatan Republik Indonesia, Jakarta, 2010.

[6] Rummy Islami Zalni Heryudarini Harahap and S. Desfita, "Usia Menarche Berhubungan dengan Status Gizi, Konsumsi Makanan dan Aktivitas Fisik," *J. Kesehat. Reproduksi*, vol. 8, no. 2, pp. 153–161, 2017.

[7] S. Anita and Y. T. Simanjuntak, "The Correlation between Junk Food Consumption and Age of Menarche of Elementary School Student In Gedung Johor Medan," *Unnes J. Public Heal.*, vol. 7, no. 1, 2018.

[8] A. Soliman, V. De Sanctis, and R. Elalaily, "Nutrition and Pubertal Development," *Indian J Endocrinol Metab*, vol. 18, no. (Suppl 1), pp. S39–S47, 2014.

[9] A. E. Al Agha, "Correlation between Nutrition and Early Puberty in Girls Living in Jeddah, Saudi Arabia," *J. Womens Heal. Care*, vol. 4, no. 3, 2014.

[10] E. Villamor and E. C. Jansen, "Nutritional Determinants of the Timing of Puberty," *Annu. Rev. Public Health*, 2016.

[11] G. Cheng *et al.*, "Beyond overweight: Nutrition as an important lifestyle factor influencing timing of puberty," *Nutr. Rev.*, 2012.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Development of Health Education Model of Diarrhea Endemic in Celagen Village Kepulauan Pongok Subdistrict

Nurhayati[1*]
{Atybm27@gmail.com}

Nursing Study Program, Poltekkes Kemenkes Pangkalpinang

Abstract. Indonesia has many archipelagic regions that are limited by natural barriers, causes health services to be limited to the rapid spread of disease due to the limited scope of the island**.** This purpose to find a model of developing health education in endemic diarrheal diseases in Celagen Village, Kepulauan Pongok Sub District. The research method used was observation with a mix method approach. The sample in this study was all Celagen village. The results of the observation and analysis will be compiled into *a guidebook to Prevent Diarrhea*. Research results that the risk and health condition variables influence the formation of people's lifestyles that support the occurrence of disease, greatly supporting the behavior of preventing diarrhea. The variable lifestyle of the community and disease prevention behavior strongly supports the occurrence of diarrheal disease in Celagen Village, Kepulauan Pongok Subdistrict.

Keywords: diarrhea, endemic islands disease, health education.

1 Introduction

The socio-economic problems that happen in Indonesia–including in the Bangka Belitung Islands–caused everyone has to improve their work routines to fulfill their daily needs. So, in the meantime, people also tend to change their lifestyles. Changes in people's lifestyles touch on not only the aspect of consumption but also the activities of daily life behavior that have triggered new diseases that arise in the community, one of them is endemic diseases [1].

The 2030 Sustainable Development Goals (SDGs) agenda in the health sector has set goals to ensure a healthy life and promote prosperity for all people of all ages. This goal causes health efforts made by all professions involved to find techniques in improving health services and make the latest technological discoveries under the development of science.

Indonesia, which has many archipelagic regions that are limited by natural barriers, causes health services to be limited to the rapid spread of disease due to the limited scope of the island. Therefore, a critical health effort is an effort to detect early endemic diseases in the archipelago, given the island's territory is limited by a dense natural landscape, so that the disease that arises will be able to expand quickly because of the close boundaries [1].

Kepulauan Pongok Subdistrict is 92,1253 km^2 remote area which dominated by a lowland. This district consists of two villages with 12 hamlets. The largest village is Pongok

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Village with an area of 96.1% of the total area of the Kepulauan Pongok District, followed by Celagen Village with an area of 3.8%.

Diarrhea ranks fourth of the nine most diseases suffered by people in the Kepulauan Pongok District [7], which is consistent with the results of the initial interview with 48 residents in Celagen Village and 15 residents in Pongok Village. There were some cases of pulmonary TB, respiratory infections, followed by symptoms of coughing and mild diarrhea to acute diarrhea. Community understanding of the symptoms of the disease is an obstacle in seeking health services. Most of the interviews showed that people tend to see themselves in a state of illness when the illness they suffer is chronic, protracted over a long period and spreads to those around them.

The presence of the diarrheal disease is supported by the geographical conditions of the islands, limited natural resources, limited social and economic aspects of society, weather/climate conditions, and population density, causing sanitation and personal hygiene aspects to be suboptimal. Generally, people assume that diarrhea is a common bodily symptom that occurs due to the wrong diet, not a severe disease and can have fatal consequences.

Observations on the lifestyle of the people of the Kepulauan Pongok Subdistrict show that although it is a fish-producing area, people tend only to eat twice a day with an incomplete menu. Consumption of fruit is rare, and generally, the fruit consumed is only bananas. However, consumption of alcoholic beverages and coffee is very high, because it is part of community activities.

Ninety percent of Celagen villagers work as farmers with an average income of two to three million rupiahs per month. If the time is the peak of the fishing season, they can get an average income of up to four to five million rupiahs. Meanwhile, villagers in Pongok have more diverse jobs with the majority of fishers.

Environmental barriers play an important role in shaping the lifestyle and development of endemic diseases in the islands; hence, the community needs a health education model that helps to make early prevention of endemic diarrheal diseases. Therefore, related to the vision of the Poltekkes of Pangkalpinang to emphasize the importance of revitalizing health programs in the archipelago, it is considered essential to provide health education for diarrheal endemic diseases in the Kepulauan Pongok District, early detection that is beneficial to the community in carrying out efforts to maintain health in the future.

2 Method

Study Design

The research method is observation by conducting a deepening of the causal relationship of the determinant factors that exist in Celagen Village, Pongok Island Subdistrict against endemic diseases. Recommendations from the results of observations and analysis of mix methods (qualitative and quantitative) will be compiled into *a guidebook to Prevent Diarrhea*. The study model using the expected multiple regression modeling is as follows (Figure 1):

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

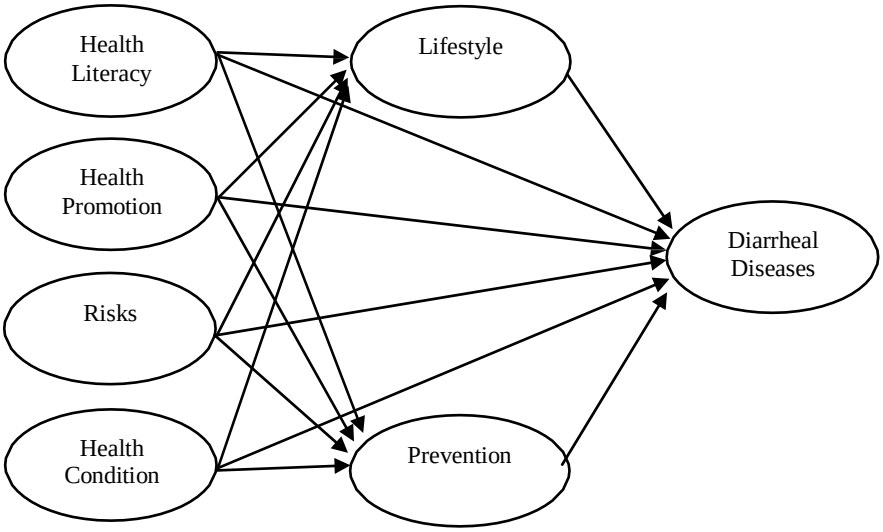

Fig 1. Multiple regression model scheme for diarrheal diseases

Sample/participant/technic sampling

The population in this study were all communities in Celagen village, Kepulauan Pongok District, which amounted to 1,311 people. Furthermore, Celagen village divided into four clusters marked by zones A, B, C and D, with a purposive permutation of families with large numbers of inhabitants (equal or more than 5 people) and small occupants (1-4 people), so the sample taken is a family in each zone with a total of 35 families.

Ethical Consideration

Ethical consideration of the research is the implementation of research involving the community as a respondent so that it is important not to involve community self-evaluation in the active role of the community in research, even though all the people in their daily lives will be observed so that it will be reluctant to give bad answers to the questionnaire.

2.4.Data Collection and Analyzed

Data analysis uses a mixed-method between quantitative methods through the Phase I acceptance test using multiple regression analysis, while the Phase II acceptance test will use a qualitative method through interviews. Changes to the subsequent analysis will follow the data structure generated in the study to produce implementation recommendations.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

3 Result

Diarrhea Endemic Problem in Celagen Village, Pongok Island District

The condition of endemic diseases in Celgaen Village, Pongok Island District was assessed using determinant factor parameters with the following conditions (Table 1).

Table 1. Diarrhea Endemic Problems in Celagen Village Kepulauan Pongok Subdistrict

Variable	Percentage	Category
Diarrheal diseases (Z)	48,6	Not good
Lifestyle (Y1)	55,8	Not good
Prevention (Y2)	72,8	Good
Literacy (X1)	42,2	Not good
Health Promotion (X2)	43,9	Not good
Risk (X3)	46,1	Not good
Health Condition (X4)	70,0	Good

Table 1 explains that the condition of diarrheal disease that occurred in Celagen Village, Kepulauan Pongok Subdistrict is in a bad category, wherein it is known that the samples studied generally experienced diarrhea.

Tabel 2. Health Literacy Related to Endemic Diarrhea Experienced by Respondents in Celagen Village Kepulauan Pongok Subdistrict

Variable	%	Criteria
Know the characteristics of diarrhea	77,1	Ever
Know the causes of diarrhea	85,7	Ever
Know the prevention of diarrhea	82,9	Ever
Access information about diarrhea from books	51,4	Never
Access information about diarrhea from the radio	85,7	Never
Access information about diarrhea from television	57,1	Never
Access information about diarrhea from the internet	82,9	Never
Access information about diarrhea from health workers	65,7	Ever
Make efforts to treat diarrhea	94,3	Ever
Carry out diarrhea prevention efforts	65,7	Ever

Table 2 provides an overview of respondents who generally never access information about diarrhea from books, radio, television, and the internet and occasionally get information about diarrhea from visiting health workers.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 3. Health Promotion Related to Endemic Diarrhea Experienced by Respondents In Celagen Village Kepulauan Pongok Subdistrict

Variable	%	Criteria
Buy herbal medicine to prevent diarrhea	60,0	Ever
Buy chemical/generic medicine to treat diarrhea	60,0	Ever
Buy medicine as inventory	68,6	Ever
Visiting health services	88,6	Ever
Improve health facilities	77,1	Ever
Have health insurance	60,0	Ever
Attend health improvement training	57,1	Ever
Attend a meeting for health improvement	77,1	Ever
Visited by health workers	85,7	Ever
Get health funding assistance from the government	77,1	Never

Based on data experienced by respondents related to health promotion (Table 3), respondents generally have received health promotion related to diarrhea and have purchased diarrhea medication on their own without supervision and prescription from a doctor even though they have never received assistance from the government for health funds to support the home health of the respondent.

Table 4. Lifestyle Related to Endemic Diarrhea Experienced by Respondents in Celagen Village Kepulauan Pongok Subdistrict

Variable	%	Criteria
Regular diet	57,1	Often
Type of food: good	54,3	Never
Food processing	48,6	Never
Food Storage	40,0	Ever
Break/ rest	51,4	Very often
Sports	31,4	Ever
Domestic physical activities	37,1	Ever
Staying up late	51,4	Ever
Drink alcohol	65,7	Never
Smoking	100,0	Very often

Based on the data experienced by respondents on lifestyle aspects related to endemic diarrhea (Table 4), the types of food and food processing have not been suitable, and cigarette consumption detected from the respondents.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 5. Risk Continuation Related to Endemic Diarrhea Experienced by Respondents in Celagen Village, Kepulauan Pongok District

Variable	%	Criteria
Dense house occupants	71,4	Inadequate
Number of rooms	85,7	Enough
Bathroom	91,4	Enough
Bedroom	88,6	Enough
Kitchen	91,4	Enough
Terrace	80,0	Enough
Laundry room	77,1	Enough
Clean water	82,9	Enough
Window / ventilation	85,7	Enough
Lighting	85,7	Enough

Based on data experienced by respondents on the risk continuum associated with endemic diarrhea (Table 5) in general are in the moderate category even though the density of the number of occupants is still fairly dense.

Table 6. Prevention Related to Endemic Diarrhea Experienced by Respondents in Celagen Village Kepulauan Pongok Subdistrict

Variable	%	Criteria
Washing hands	54,3	Ever
Washing food ingredients	45,7	Often
Washing tableware	48,6	Often
Washing cooking utensils	45,7	Often
Good food processing	40,0	Eve
Cook drinking water	60,0	Often
Source of drinking water	51,4	Nothing
Drinking water storage	48,6	Nothing
How to eat	57,1	Not good
Share food	57,1	Not good

Based on data experienced by respondents on prevention aspects related to endemic diarrhea (Table 6), in general the prevention aspect is in a bad category, because although respondents often wash food ingredients, eating utensils, cooking utensils and food processing, healthy drinking water sources and there is no adequate water storage due to geographical conditions.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 7. Health conditions related to endemic diarrhea experienced by respondents in Celagen Village, Kepulauan Pongok District

Variable	%	Criteria
Cleanliness of the yard	42,9	Very good
Cleanliness of bedroom	45,7	Very good
Cleanliness of the bathroom	42,9	Very good
Cleanliness of kitchen	51,4	Very good
Cleanliness of working	42,9	Very good
Cleanliness of tableware	45,7	Very good
Healthy behavior of residents of the house	48,6	Enough
Healthy behavior of the neighbor	45,7	Enough
Healthy behavior of co-workers	45,7	Enough
Healthy behavior of other colleagues	48,6	Enough

Based on data experienced by respondents on aspects of health conditions related to endemic diarrhea (Table 7) generally are in the very good category on the cleanliness criteria of the yard, room, bathroom, kitchen and work equipment but the healthy behavior of people in the home, neighbors and coworkers from respondents is not right yet.

The Influence of Determinant Factors that Influence Endemic Diarrhea in Celagen Village, Kepulauan Pongok District.

To measure the workings of the determinant factors, then based on the analysis it is known that the determinant factors that provide access to diarrheal diseases both directly and indirectly in various theories indicate the existence of variables; (1) lifestyle, (2) prevention, (3) health literacy, (4) health promotion, (5) risk, and (6) health condition.

Information about the influence of determinant factors (in the form of the influence of lifestyle variables, prevention, health literacy, health promotion, risk, and health conditions for diarrheal diseases) is obtained through a regression test.

Based on the proposed model, the following stages of proposed testing are as follows:

1. Effects of health literacy, health promotion, risks and health conditions on lifestyle;
2. Effects of health literacy, health promotion, risk, health conditions through lifestyle to diarrheal diseases.
3. Effects of health literacy, health promotion, risks and health conditions on disease prevention;
4. Effects of health literacy, health promotion, risk, health conditions through disease prevention against diarrheal diseases.

Based on data analysis shows that in model I to determine the effect of health literacy variables, health promotion, risk and health conditions on lifestyle, it is known that there is no direct effect of health literacy variables (X1), health promotion (X2) and health risks (X3) on lifestyle (Y1), and there is an influence of health conditions (X4) on lifestyle (Y1).

Analysis in model II to determine the effect of health literacy, health promotion, risk and health conditions on disease prevention, it is known that there is no direct effect of the health risk variable (X3) on disease prevention (Y2) and there is a direct influence on the health literacy variable (X1), health promotion (X2) and state of health (X4) towards disease prevention (Y2).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Analysis in model III shows that based on the significance value, the variables of health risk, lifestyle, and disease prevention have a direct influence on the presence of diarrheal disease. Based on the description above, the model diagram can be arranged as follows (Figure 2).

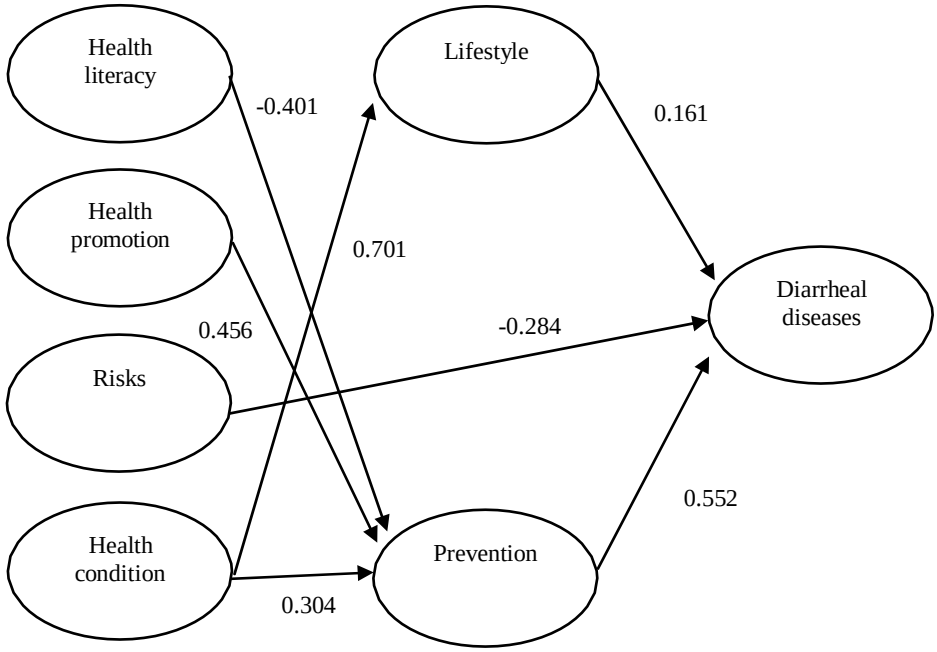

Figure 2. Result of the diagram model for diarrheal diseases

4 Discussion

When interviewing residents (respondent 1) on average have a considerable family density, it was found that in general, respondents do not have enough understanding about the risk of diarrheal. Respondents explain that they generally recognize the symptoms of recurrent diarrhea in 1-3 days is a symptom of wrong eating or colds caused by staying up late or nighttime activities.

They generally realize that it is essential to maintain the cleanliness of the food to eat including the hygiene of processing it, but the biggest problem is the limitations of freshwater, and clean water sources that expect supplies from outside the island and of course cost much money. Therefore the availability of clean water and freshwater will be optimized for daily drinking water consumption and is not a priority to use clean water to wash eating utensils and food processing.

Celagen villagers realize the importance of maintaining health through the cleanliness of the environment around the house and protecting their children from diseases including defecation and diarrhea by continually washing their hands, despite the constraints due to dry living conditions with very limited freshwater so that the behavior of hand washing and other cleanliness becomes challenging to control.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The keywords in the interview are because of the limitations of the sources of freshwater and clean water become obstacles even though their lifestyles are aware of the importance of health and personal hygiene and the environment already exists. When interviewing other respondents (respondent 2), they stated that diarrhea is highly related to their lifestyle and the food they consume daily. Consumption of healthy foods complete with fish/eggs/ meat, vegetables, rice, and water can not be routine because the price of vegetables is high and must be purchased from outside the island, and the presence of fresh fish depending on weather conditions on the island becomes a constraint to good food consumption.

The interview concluded that although the residents were very aware of the importance of healthy food to prevent their families from diarrhea, the limited supply of healthy food on the island was an obstacle for them.

Respondent 3 states that the presence of health workers visiting the island is very limited because it is only four times a month so that under certain conditions, respondents want to provide information about the dangers of certain diseases (diarrhea) and how to prevent them that are easy and inexpensive.

Although in certain conditions respondents have traditional knowledge that is known from mouth-to-mouth information such as the use of oil and guava leaves, sometimes the healing process of diarrhea with traditional medicine cannot be fully guaranteed and fully recovered, so that it often recurs. The keyword in the interview is the limited information regarding the prevention and control of diarrheal diseases for families obtained from health workers as a whole.

Based on the regression model obtained in the data analysis, it is known that the aspects of health conditions and prevention efforts undertaken by respondents both with relatively large and small numbers of family members have been optimal, where there have been seen traditional efforts to prevent the occurrence and spread of diarrheal diseases. Likewise, in the aspect of lifestyle, it is known that respondents already have a lifestyle that is not good but does not have a high risk of the occurrence of diarrheal disease. The condition of diarrheal disease which is still more common in respondents is more on two aspects, namely the environmental risk where the availability of clean water sources and freshwater sources that are relatively difficult to reach causes lifestyle behaviors that prevent diarrheal disease is still limited.

According to respondent two, that diarrhea is generally not worrying if it lasts for 1-3 days because it has been considered typical in the respondent's family environment. Generally, respondents are still wrong to suspect that the cause of diarrhea is mainly in infants. In some cases, respondents (1) stated that diarrhea in infants is common because the baby is learning to walk or because he is teething, this causes the prevention of diarrhea to switch to only reducing fever, which is another symptom of diarrhea and not stopping diarrhea itself

The case above is related to the theory of health promotion according to Leavel and Clark (WHO, 2012), that the prevention of disease in five stages, often called the Five-Level of Prevention, consists of; (1) Health Promotion, (2) Specific Protection, (3) Early Diagnosis and Prompt Treatment (Early Diagnosis and Prompt Treatment), (4) Disability Limitation and (5) Rehabilitation, the aspects of health promotion and health literacy have worked so as to cause diarrheal disease prevention behavior has been going well, but the limited source of information about diarrheal diseases has caused an optimal prevention method so that there are still cases of diarrheal disease in respondents.

For this reason, in several discussions with respondents (3) it was deemed necessary to provide health literacy capabilities that encouraged respondents to have a belief in medical

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

treatment, and in the end would encourage respondents to find and use medical personnel to diagnose their illnesses or obtain reliable information about the prevention and management of endemic diarrheal diseases for the respondent's family.

One theory of health behavior is the health trust model developed in 1950 by social psychologists Irwin M. Rosenstock, Godfrey M. Hochbaum, S. Stephen Kegeles, and Howard Leventhal understanding the widespread failure of health programs requires a health trust model that is applied to predict various behaviors related to health, such as; early detection of disease, acceptance of treatment interventions, understanding patient responses to disease symptoms, adherence to medical treatment, healthy lifestyle behaviors

This theory emphasizes that in intervening health models in one case of disease at the beginning of the intervention must use a model that can be applied from reliable books or literature. Based on this study, the development of the Diarrhea Endemic Disease Handbook in the Islands was carried out.

5 Conclusion

1. Risk variables and health conditions affect the formation of community lifestyles that support the occurrence of diarrheal disease in Celagen Village Kepulauan Pongok Subdistrict.
2. Risk variables and health conditions are very supportive of disease prevention behavior undertaken by the community related to endemic diarrheal diseases in Celagen Village Kepulauan Pongok Subdistrict.
3. Community lifestyle variables and disease prevention behavior strongly support the occurrence of diarrheal disease in Celagen Village Kepulauan Pongok Subdistrict.

Acknowledgment

We would like to acknowledgment to all the participants who participated in this research.
Funding: Risbinakes Poltekkes Kemenkes Pangkalpinang
Conflict of Interest: Provincial Health Office of Kepulauan Bangka Belitung, South Bangka Regency Health Office, Pongok Health Center, Celagen Village Government, and Celagen Village Health Care.
Ethical Clearance: Ethical clearance received from KEPK Poltekkes Kemenkes Tanjung Karang.

References

[1]Achmadi, Umar Fahmi. 2007. *Lingkungan dan Kesehatan.* Jakarta. Lembaga Penelitian Universitas Indonesia.
[2]----------. 2010. *Manajemen penyakit Berbasis Wilayah.* Jakarta. Penerbit Universitas Indonesia.
[3] Ajzen I. 2005. *Attitudes, personality, and behavior*, 2nd ed. Milton Keynes, UK, Open University Press/McGraw-Hill.
[4] Becker M, ed. 1974. *The health belief model and personal health behavior*. Thorofare, New Jersey, Charles B. Slack.
[5] Bandura A, Walters R. 1963. *Social learning and personality development*. New York, Holt, Rinehart & Winston.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[6] Bandura A, ed.1995. *Self-efficacy in changing societies*. New York, Cambridge University Press, .
[7] BPS Bangka Selatan. 2017. *Kecamatan kepulauan Pongok Dalam Angka 2016.* Bangka Belitung. Badan Pusat Statistik Bangka Selatan.
[8] Budiman. 2011. *Penelitian Kesehatan.* Bandung. Refika Aditama.
Burke, Peter. 2013. *Sejarah dan Teori Sosial. Penerjemah:Mestika Zed dan Zulfami edisi 2*. Jakarta: Yayasan Obor Indonesia.
[9] Carpenter, Christopher J. (2010). HYPERLINK "https://dx.doi.org/10.1080/10410236.2010.521906" *"A meta-analysis of the effectiveness of health belief model variables in predicting behavior"* . *Health Communication.* ***25*** *(8): 661–669.* HYPERLINK "https://en.wikipedia.org/wiki/Digital_object_identifier" \o "Digital object identifier" *doi*: HYPERLINK "https://doi.org/10.1080%2F10410236.2010.521906" *10.1080/10410236.2010.521906* .
[10] Dennison D, Golaszewski T. 2002. The activated health education model: refinement and implications for school health education. *Journal of school health*, 2002, 72(1):23–6.
[11]Deddy Mulyana dan Jalaluddin Rakhmat. *Komunikasi Antarbudaya:Panduan Berkomunikasi dengan Orang-Orang Berbeda Budaya*. 2006. Bandung:Remaja Rosdakarya.
[12] Equar, Awala,, Shawel Dawit dan Hagos Seifu. 2007. *Investigation and Management of Epidemic Prone Diseases.* Ehiopia. Mekelle University.
[13] Green L et al. 1980. *Health education planning: a diagnostic approach*. Palo Alto, California, Mayfield Publishing, 1980
[14] Hochbaum G. 1971. Behaviour modification. *School health review*, 1971, 2(3): 5–11.
[15]Infodatin. (2015). *Situasi dan Analisis Keluarga Berencana.* Jakarta: Kementerian Kesehatan Republik Indonesia.
[16] Kaplan R, Sallis J, Patterson T. 1993. *Health and human behavior*. New York, McGraw-Hill, 1993:60–70.
[17] McKenzie, JF. Pinger, RR dan Kotecki. 2010. *Kesehatan Masyarakat Suatu Pengantar.* Jakarta. Penerbit Buku Kedokteran EGC.
[18] Mollison, Denis dan Kuulasma Kari. 1985. Spatial Epidemis Models: Theory and Simulations. *Scotland. Department of Actuarial Mathematics and Statistics Heriot Watt University.*
[19] Notoatmodjo, Prof. Dr. Soekidjo. 2010. *Ilmu Kesehatan Masyarakat.* Jakarta. PT Rineka Cipta.
Omran, Abdel R. 2001. *The Epidemiologic Transition: A Theory of Epidomiology of Population Change. Bulletin of the World Health Organization.*
[20] Pajares F. *Overview of social cognitive theory and of self-efficacy*. 2002. http://www.emory.edu/EDUCATION/ mfp/eff.html. Accessed 5 April 2011.
[21] Paulus Wirutomo. 2012. *Sistem Sosial Indonesia*.Jakarta. Universitas Indonesia.
[22]Primadi, O. (2015). Situasi Penyakit Kanker di Indonesia. *Buletin Jendela Data dan Informasi Kesehatan*, 1-18.
[23] Rasjidi, I. (2009). Epidemiologi Kanker Serviks. *Indonesian Journal of Cancer Vol. III No. 30* , 103 - 108.
[24] Skinner BF. *Beyond freedom and dignity*. New York, Knopf, 1971.
[25] Sugiyono, 2008. Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung : Penerbit Alfabeta
[26] WHO. 2012. *Health Education: Theoretical concepts, effective strategies and core competencies.* World Health Organization. Regional Office for the Eastern Mediterranean.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The Related Factors to Hypertension among Young Adults in Pakis Village, Jember East Java

Kholid Rosyidi MN[1] , Bagus Arditya Husadha[2]
e-mail: ***kholidrosyidi@yahoo.com***

[1,2]Faculty of Nursing University of Jember
Jl. Kalimantan No. Kampus Tegal Boto Jember 37 Telp./Fax. (0331) 323450

ABSTRAC. This study aims to determine the associated factors with the incidence of hypertension among young adults in Pakis village. This study used an observational analytic design by using a cross-sectional approach. The total sample of 368 respondents was taken by purposive sampling technique from young adult groups in Pakis village, Panti sub-district. The research used questionnaires and direct observation as the instruments. The data were analyzed by the chi-square test. Based on the results of the study it could be seen that factors that associated with the prevalence of hypertension among young adults were age, family history with hypertension, nutritional status, and physical activity. However, there was no relationship between gender, smoking habits and the incidence of hypertension among young adults in village orphanage. It is expected to the community of Pakis Village, Panti sub-district, to check their health regularly. Health centers should provide health education consistently, and periodic supervision should be applied to the patient with high blood pressure so that they could maintain their health.

Keywords: hypertension, young adults, hypertension risk factors

1. Introduction

Hypertension is an asymptomatic disorder accompanied by an increase of systolic and diastolic blood pressure, and people often called it "the silent killer" [1] [2]. Based on data from the World Health Organization (WHO) [3], the number of uncontrolled hypertensive clients increase from 600 million in 1980 to 1 billion in 2008 [3] (WHO, 2013). The 2013 Basic Health Research (Riskesdas) data, the prevalence of hypertension in the elderly occupies the first position from a list of degenerative diseases that often occur in the elderly. The prevalence of hypertension in Indonesia obtained based on measurements is at the age of ≥18 years. East Java is one of the provinces with a high prevalence of hypertension at 26.2% [4].

A critical risk factor for hypertension among young adults is lifestyle such as smoking, lack of exercise, consuming less nutritious foods, and stress [5]. Lacking socioeconomic statuses is the primary factor that influences the high incidence of hypertension in Pakis village. The data is supported by population in Pakis village with middle to lower socioeconomic status, where the majority of the population are farmers and entrepreneurs.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Based on the description above, non-communicable diseases (NCDs) still become a problem in developing countries. In Indonesia, hypertension is still quite high and becomes a dilemma. So the researchers are interested in researching the related factors to hypertension among young adult in the Pakis Village.

2. Method

The research method used an observational analytic research design with a Cross-Sectional approach. This research was conducted in November - December 2018 in the Pakis village, Panti District. The population in this study were all residents of Pakis village with the development stage of young adult families during the 2018 period totaling 4554 people. The sample size based on the Yamane Taro calculation was 368 respondents. The sampling technique in this research used purposive sampling.

Primary data were obtained using a questionnaire. These data included characteristics of young adults such as age, sex, nutritional status, physical activity, smoking habits, blood pressure measurement, and body weight. Univariate data were analyzed descriptively while bivariate data used chi-square test with a 95% ($p<0.05$) confidence level. If $p<0.05$ then there was a significant relationship between the dependent and independent variables.

3. Results

Characteristic of Respondent

Table 1. Characteristics of young adult respondents in Pakis village, Panti Sub-district (n = 368)

No	Characteristics	f	%
1.	**Age**		
	20 - 32	259	70,38
	33-44	109	29,62
2.	**Gender**		
	Male	153	41,6
	Female	215	58,4
3.	**Education**		
	Not School	46	12,5
	Not Graduated from elementary school	121	32,9
	Elementary	77	20,9
	Middle School	94	25,5
	High School	30	8,2
4.	**Employment**		
	Unemployed	51	13,9
	Entrepreneur	110	29,9
	Farmers	86	23,4
	Labor	100	27,2
	Others	21	5,7
5.	**Family History**		

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

	Yes	262	71,2
	No	106	28,8
6.	**Nutritional status**		
	Obese	263	71,5
	Not obese	105	28,5
7.	**Physical activity**		
	Mild	298	81,0
	Moderate	50	13,6
	Heavy	20	5,4
8.	Smoking Habit		
	Do not smoke	240	65,2
	Ever smoked	128	34,8

Based on table 1, the age distribution of respondents in this research is mostly 26-30 years old, with 129 people (35.1 %), while the smallest proportion is at the age of 41-44 years with a total of 21 people (5.7%). More than half are women, with 215 respondents (58.4%). The proportion of the most significant respondents based on recent education is not graduating from elementary school as many as 121 (32.9%). 110 respondents (29.9%) are entrepreneurs as the majority followed by labor with 100 respondents (27.2%) in second position. Out of 368 respondents in the Pakis village, 262 (71.2%) people have a family history of hypertension, and 263 obese (71.5%). It can be seen that 298 respondents (81.0%) do mild physical activity, and 240 people (65.2%) do not smoke.

Analysis of the related factors to hypertension among young adults in Pakis

Tabel 2. Analysis of the related factors to hypertension among young adults in Pakis

No	Related factors	**Hypertension**				**Total**		***p***	***OR*(95%CI)***
		Yes		**No**					
		f	**%**	**f**	**%**	**f**	**%**		
1.	**Age**							0.000	2,832 (1,609-4,987)
	20-32	93	64,1	166	35,9	259	100		
	33-44	91	83,5	18	32,9	109	100		
2.	**Gender**								
	Male	111	72,5	42	27,5	153	100	0,339	0,801(0,507-1,263)
	Female	146	67,9	69	32,1	215	100		

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

3.	**Family history**								
	No	65	61,3	41	38,7	106	100	0,024	1,730(1,499-2,788)
	Yes	192	73,3	70	26,7	262	100		
4.	**Nutritional status**								
	Not Obese	63	60	42	40	105	100	0,009	1,874 (1,163-3,021)
	obese	194	73,8	69	26,2	263	100		
5.	**Physical activity**								
	Inadequate	216	72,5	82	27,5	298	100	0,022	0,537 (0,313-0,920)
	Adequate	41	58,6	29	41,4	70	100		
6.	**Smoking Habits**								
	No Smoking	166	69,2	74	30,8	240	100	0,701	1,096(0,685-1,755)
	Ever smoked	91	71,1	37	28,9	128	100		

Based on table 2 above, it can be seen that 83.5% hypertension occour in respondent age 33-44 and 64.1% found in the age 20-32 year group. The statistical analysis shows that there is a significant relationship between age and the occurrence of hypertension (OR= 4,987, CI 95%= 1,609-4,987, p value= 0,000).

The proportion of hypertension in the male is 72.5%, while in the female group is 67.9%. The results of statistical analysis obtained that there is no significant relationship between gender with the occurrence of hypertension(OR= 0.39, CI 95%=0.57-1.263, p value= 0.339).

The proportion of hypertension higher in the respondent with family history being 73.3% than without family history is 61.3%. Statistical test shows that there is a significant relationship between family history and the occurrence of hypertension (OR= 1,730, CI 95%=1,499-2,788, p-value = 0.024).

It can be seen that the proportion of hypertension is higher in obese with 73.8% than not obese adults for 60%. There is a significant relationship between nutritional status and the incidence of hypertension (OR=1.874, CI 95%=1,163-3,021, p value= 0.0009).

The proportion hypertension in insufficient physical activity was 72.5% and in sufficient physical activity was 58.6%. Statistical test shows there is a significant relationship between physical activity and the incidence of hypertension (OR=0.537, CI 95%=0.313-0.920, p value= 0.022).

The prevalence of hypertension in the respondent with smoking habit higher than not smoked with 71.1% and 69.2% respectively. The results of statistical analysis using the chi-square test, represent that there is no significant relationship between smoking habits and the occurrence of hypertension (OR=1.096, CI 95%=0.685 - 1.755, p value=0.701).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

4. Discussion

Based on the results of statistical analysis, it was concluded that there was a relationship between age and incidence of hypertension in adult in the Pakis village with a value of p = 0,000 <0.05.

This was supported by a theory that said that as we get older, the prevalence of hypertension was increasing [7]. This situation is caused by changes in blood vessel structure and function that occurred due to an aging process, where blood vessels lost their elasticity and reduced the blood vessel strain [8]. Decreased strain strength of the arteries and aorta caused a decrease in the ability to accommodate the volume of blood pumped by the heart. Thus, it resulted in a reduction in cardiac output and an increase in peripheral resistance [9].

he results of this study indicated that there was no relationship between gender and the incidence of hypertension. This also showed that both men and women had relatively the same risks.

Results of a research conducted by Wahyuningsih and Astuti in Kabregan Hamlet, Yogyakarta, showed that there was no significant relationship between sexes and hypertension (p = 0.979) [10].

Basically, the prevalence of primary hypertension that occurred between males and females was the same. However, before experiencing menopause, women tended to be protected from cardiovascular disease because of the activity of the hormone estrogen, which played a role in increasing levels of High-density Lipoprotein. High HDL cholesterol levels were one of the protective factors in the prevention of arteriosclerosis. In premenopausal, women began to lose estrogen hormone little by little. This process proceeded according to age [11].

The result of this study shows that family history with hypertension is correlated with hypertension among young adults. The adult who has family history was at risk of hypertension 1.730 times than those who have not family history.

This result was in line with the theory revealed by Dalimartha [12], in 2008 who said that if a history of hypertension was obtained in both parents of essences hypertension in mono-zygotic twins and one of them suffered hypertension, the person was most likely to suffer from hypertension.

The presence of genetic factors in certain families would cause the family to have the risk of suffering from hypertension. This was related to an increase in intracellular sodium levels and a low ratio between potassium and sodium [13]. Sodium reabsorption in the renal tubules will increase in the participants of primary hypertension. It caused by the stimulation of several transporters of sodium located in the basolateral membrane and providing energy for transport. In patients with primary hypertension, digitalis levels, such as factors that caused sodium retention, were found by increasing sodium pump activity in the kidneys. [14].

The results of this study were also supported by the theory expressed by Lany Gunawan in 2001, who said that statistical data proved that someone would have a higher probability of around 70-80% to suffer hypertensive health problems if their parents were hypertensive victims [15].

Based on the results, there was a significant relationship between nutritional status and the incidence of hypertension. Young adults with obese have a risk for hypertension 1.8 times than non-obese. It meant that obesity was a risk factor for hypertension.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Obesity was an imbalance between the consumption of calories with energy needs stored in the form of fat in the subcutaneous tissue of the intestine, heart, lungs and liver so that it caused an increase in active fat tissue and an increase in fetal work.

The results of this research also supported by the results of a study conducted by Smith in 1992, which found that a 15% increase in body weight could raise systolic blood pressure by 18% compared to someone with a healthy weight category. A person with an overweight of 20% had an eight times greater risk of developing hypertension.

Based on the WHO expert commission report in 2011, Obesity was associated with the risk of getting hypertension by 2-6 times than the healthy person. The increase in the occurrence of hypertension caused by obesity could be affected by several reasons, such as the more massive body mass, the more blood was needed to meet the needs of oxygen and food to the body's tissues. The volume of blood circulating through the blood vessels increased, giving higher pressure to the arterial wall. If the weight increased above ideal body weight, the risk of hypertension also increased [16].

Based on the results of statistical analysis, it can be seen that there is a significant relationship between physical activity and the incidence of hypertension. Young adults with inadequate physical activity have at risk for hypertension than those who have adequate physical activity.

Regular physical activity helps the heart in increasing pumped blood to all bodies [17]. The functioning of muscles and joints better in individuals who have adequate physical activity. Through regular physical activity, peripheral resistance can reduce, and it could prevent the occurrence of hypertension [18].

This study revealed that there is no significant relationship between smoking habits and hypertension. It can be seen that smoking habits in young adults were not risked factors the incidence of hypertension.

Chemical substances contained in cigarettes such as nicotine and carbon monoxide can damage arteries and can cause blockages of blood vessels, which is known as atherosclerosis. Due to the blockage, the heart cannot pump blood optimally, increased blood pressure, and caused hypertension.. In an autopsy study, it was proven that the close association between smoking habits and the presence of arteriosclerosis in all blood vessels. Smoking also increases the heart rate and the need for oxygen to be supplied to the heart muscles. Smoking also enhances the heart rate and oxygen supply to the heart muscles. Smoking in people with high blood pressure increases the risk of damage to arterial blood vessels. Smoking a single day will raise the systolic pressure by 10-25 mmHg and increase the heart rate from 5-20 times per minute, and over time it will cause hypertension [19].

5. Conclussion

There was significance relationship between age, family history of hypertension, nutritional status, physical activity and hypertension among young adults in Pakis village. But there was no correlation between gender and smoking habit to hypertension.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

It was expected to public health services provided health education about hypertension in a community setting through posters, leaflets, and booklets. Health workers are expected to provide promotive and preventive efforts continuously related to the importance of controlling hypertension by giving information about proper diet to patients or the public in general. Besides that, health workers need to motivate the patients to keep on doing a proper diet to prevent an increase in blood pressure or complications. For the community, it is essential to control hypertension in order to motivate hypertensive patients in the surrounding environment through dietary arrangements by reducing consumption of salty foods, preserved foods, snack consumption, reducing the use of cooking ingredients, improving the consumption of vegetables and fruits, especially bananas. Further research was needed to explore other factors that affect blood pressure, such as the consumption of fatty foods, alcohol, and caffeine.

Acknowledgements

Thanks to Faculty of Nursing University of Jember especially community health nursing departement that give support in the study.

References

[1] Potter PA, Perry AG. (2005). Buku ajar fundamental keperawatan. Jakarta: EGC.

[2] Vitahealth. (2006). Hipertensi: Informasi lengkap untuk penderita dan keluarganya [Internet]. Retrieved November 27, 2018, from https://books.google.co.id/books

[3] World Health Organization. (2013). A global brief on hypertension: silent killer, global public health crisis [Internet]. Retrieved November 27, 2018, from http://ishworld.com/downloads/pdf/global_brief_hypertension.pdf

[4] Riset kesehatan dasar (RISKESDAS). (2013). Badan penelitian dan pengembangan kesehatan kementerian RI [Internet]. Retrieved November 27, 2018, from http://www.depkes.go.id/resources/download/general/Hasil%20Riskesdas%202013.pdf

[5] Nisa I. (2012). *Ajaibnya Terapi Hipertensi Tumpas Penyakit Hipertensi*. Jakarta: Dunia Sehat.

[6] Syamsunie Carsel. H. (2018). Metodologi Penelitian Kesehatan dan Pendidikan. [Internet]. Retrieved November 27, 2018, from https://books.google.co.id/books

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[7] Davey P. (2005). At A Glance Medicine. [Internet]. Retrieved November 5, 2018, from https://books.google.co.id/books

[8] Smeltzer, S. C., Bare, B. G., (2001), "Buku Ajar Keperawatan Medikal-Bedah Brunner &Suddarth. Vol. 2. E/8", EGC, Jakarta.

[9] Stanley, M. & Beare, P.G. 2007. Buku Ajar Keperawatan Gerontik. Edisi 2. Jakarta: EGC.

[10] Wahyuningsih, W., & Astuti, E. (2013). Faktor Yang Mempengaruhi Hipertensi pada Usia Lanjut. Jurnal Ners dan Kebidanan Indonesia, 1(3), 71-75.

[11] Kumar, 2005. Kumar V, Abbas AK, Fausto N. Hypertensive Vascular Disease. In: Robn and Cotran Pathologic Basis of Disease 7th edition. Philadelpia : [Internet]. Retrieved November 27, 2018, from : Elsevier https:// id.wikipedia.org/wiki

[12] Dalimartha, S., Purnama, B. T., SpGK, M. S., Nora Sutarina, S., Mahendra, B., Akp, I., & Darmawan, R. (2008). Care yourself, Hipertensi. Penebar PLUS+

[13] Rohaendi, H. (2008). Pengaruh Pemberian Teh Rosella Terhadap Tekanan Darah Pasien Hipertensi Primer di Panti Jompo Welas Asih Kota Tasikmalaya. Fakultas Ilmu Keperawatan, Universitas Indonesia, 66-84.

[14] Adrogue,H.J., Madias, N.E., 2007. Mechanisms of Disease Sodium and Potassium in the Pathogenesis of Hypertension. [Internet]. Retrieved November 27, 2018, from The New England Journal of Medicine. 356:19.

[15] Lany Gunawan. 2001.Hipertensi, Tekanan Darah Tinggi. Yogyakarta: Penerbit Kanisius

[16] Hull, A, 1993. *Penyakit Jantung, Hipertensi dan Nutrisi.* Penerjemah Wendra Ali. Jakarta: Bumi Aksara

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[17] CK Giam. (2000). *Ilmu Kedokteran Olahraga*. Jakarta: Binarupa Aksara

[18] Nur, K. R. M. (2018). Illness perception and cardiovascular health behaviour among persons with ischemic heart disease in Indonesia. International journal of nursing sciences, 5(2), 174-180.

[19] Depkes RI.,, 2006. *Pedoman Teknis Penemuan Dan Tatalaksana Penyakit Hipertensi.* Jakarta: Direktorat Pengendalian Penyakit Tidak Menular, Direktorat Jenderal PP & PL

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Implementation of Family Nursing Care Based on Nurses' Characteristic and Work Environment in Health Center of Jambi City

Sovia[1*], Yellyanda[2]

{Email: soviadamhur@gmail.com; yellyanda21@gmail.com}

[1]Community Health Nursing Department, Jambi Health Polytechnic of Health Ministry

[2]Nursing Management Department, Jambi Health Polytechnic of Health Ministry

Abstract. The implementation of family nursing care is beyond expectations. It is because some nurses have not provided direct services to the community, feel compelled to make a home visit, and have not documented the activities well. A cross-sectional study using a questionnaire with public health nurses as participants. The survey included questions about the characteristics of nurses, work environment, and the implementation of family nursing care. One hundred fourteen nurses participated in this study taken with purposive sampling. The chi-square test and logistic regression used as the data analysis. No relation of sex, age, working period, education, and honorarium to the implementation of family care. However, there was the relationship between training, leadership, working facilities and the implementation of family nursing. There were several efforts to improve the ability and motivation of nurses in the implementation of family nursing care, such as increasing the frequency and quality of family nursing care training, improving leadership supervision, maintaining and improving work facilities.

Keywords: *implementation, family nursing care, public health center*

1. Introduction

Public health nursing is a professional nursing service in the form of a combination of public health and nursing concepts that aimed at the whole community with an emphasis on high-risk groups. Health promotion and prevention are the priorities of public health nursing activities without neglecting curative and rehabilitative services [1].

Public health nursing include all nursing services organized by a community or an agency to assist in carrying out any or all phases of the public health programs. Nurses can provide

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

services to individual, family, or community basis in houses, schools, clinics, companies, or offices of the agency [2].

The purpose of public health nursing is to increase the independence of society in addressing its health problems. The main focus of public health nursing activities is to improve the knowledge and skills of the community in implementing healthy living behaviors in order to enhance and maintain their health.

All functional nurses in public health centers implement public health nursing inside and outside the building. Activities in the building include nursing care for outpatients or hospitalization, the discovery of outpatients' new cases, health education, regularity monitoring of medication, case referral, nursing counseling, assignment of authority delegation, creating therapeutic environments, and doing nursing documentation. The outdoor activities include the individual nursing care in the family context, family nursing care, nursing care for groups, and community nursing care in the target area [1].

The evaluation of nurses' role and function in public health centers shows that nurses tend to provide nursing care inside the building, and they are curative. Meanwhile, services outside the building that relates to family nursing has not been done optimally. This inefficient is due to the lack of ability of nurses caused by limited nursing care training acquired and excessive tasks charged to nurses [3].

The study of Tafwidhah, Nurachmah, and Hariyati (2012) shows that there is a relationship among community health nurses' competence with the implementation level of Public Health Nursing (PHN) in Pontianak ($P=0.000$; $\alpha=0.05$) [4]. Research of Amperaningsih and Agustanti (2013) entitled "The Performance of Nurses in The Implementation of PHN" showed that the implementation of activities of PHN did not go well (80%) [5].

The results of an early survey of three PHN coordinators at the Public Health Center of Jambi City obtained data that all three have carried out PHN service activities, especially the family nursing care. However, the implementation is not as expected because some nurses object and compel to make a home visit and do not do the documentation thoroughly. The three PHN coordinators say that each functional nurse should perform nursing care in the vulnerable/low-income families each month, and leaders allow the nurse to go to communities. The PHN coordinator also say that no one have researched family nursing activities in the public health center.

2. Method

This study was a descriptive-analytic study with a cross-sectional design. The independent variables are nurses' characteristics (age, sex, work period, education, and training) and work environment (leadership, honorarium, work facilities), and the dependent variable is the implementation of family nursing care. The study was conducted from April to October 2016 in 18 public health centers throughout Jambi City. Samples were 114 nurses taken by total sampling. Data explorers were carried out with questionnaires about the characteristics of nurses and the work environment. Data analysis used a chi-square test..

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

3. Results

This study found that most nurses in the public health center in Jambi City did family nursing care adequately. More details can be seen in the following table:

Table 1. Implementation of Family Nursing Care in Jambi City (n=114)

Implementation	f	%
Good	60	52.6
Not good	54	47.4
Total	114	100.0

The table below shows that most of the nurses in the public health center of Jambi City have female gender (97.4%), with an age range of 36-55 years/middle adult (83.3%), the employment period more than 5 years (89.5), highly educated (71.9%), and never attended family nursing training (62.3%).

Table 2. Nurses' Characteristics in Public Health Center of Jambi City (n=114)

Variable	f	%
Sex		
a. Female	111	97.4
b. Male	3	2.6
Age		
a. Young Adult	19	16.7
b. Middle Adult	95	83.3
Length of working		
a. ≤ 5 tahun	12	10.5
b. > 5 tahun	102	89.5

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Education		
a. High	82	71.9
b. Low	32	28.1
Training		
a. Ever	43	37.7
b. Never	71	62.3

Table 3. Nurses' Working Environment in Public Health Center of Jambi City (n=114)

Variable	f	%
Leadership		
a. Effective	40	35.1
b. Ineffective	74	64.9
Honorarium		
a. Enough	31	27.2

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

b. Not enough	83	72.8
Work facilities		
a. Available	47	41.2
b. Not available	67	58.8

Table 3 shows that at public health centers, there is ineffective leadership (64.9%), insufficient honor (72.8%), and inadequate work facilities (58.8%) to support the family nursing care.

Table 4. Relationship of Nurses' Characteristics With Implementation Family Nursing Care (n = 114)

Nurse"s Characteristics	Implementation				Total		OR (95% CI)	p-value
	Not Good		Good					
	f	%	F	%	f	%		
Sex								
a. Female	52	46.8	59	53.2	111	100	2.269	0.460
b. Male	2	66.7	1	33.3	3	100	(0.2-25.8)	
Age								
a. Young Adult	6	31.6	13	68.4	19	100	0.452	0.131
b. Middle Adult	48	50.5	47	49.5	95	100	(0.16-1.3)	
Length of working								
a. ≤ 5 tahun	5	41.7	7	58.3	12	100	0.773	0.910
b. > 5 tahun	49	48.0	53	52.0	102	100	(0.23-2.6)	
Education								
a. High	38	46.3	44	53.7	82	100	1.158	0.886
b. Low	16	50	16	50	32	100	(0.51-2.6)	

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Training								
a. Ever	18	41.9	25	58.1	43	100	2.812	0.018
b. Never	42	59.2	29	40.8	71	100	(1.4-5.54)	

* meaningful at $\alpha = 0.05$

According to table 4, we can know that the inferior implementation of family nursing care more found in the male nurses (66,7%), the middle adult-age nurses (50.5%), have a working period of more than 5 years (48%), low-education nurses (50%), and nurses who have never got training (59.2%). While the excellent implementation of family nursing care performed by women nurses (53,2%), with young adult age (68,4%), have worked for less than five years (58,3%), higher education (53,7%) and have participated in family nursing care training (58.1%).

Further analysis shows that there is no relationship between the gender (p=0.460), age (p=0.131), length of work (p=0.910), education level (p=0.886), and the implementation of family nursing care. However, there is a relationship between training and the implementation of family nursing care by nurses in the public health center of Jambi City (p=0.018, α=0.05).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 5. Relationship of Nurses' Working Environment With Implementation of Family Nursing Care (n = 114)

Nurses' Working Environment	Implementation				Total		OR (95% CI)	p-value
	Not Good		Good					
	f	%	f	%	f	%		
Leadership								
a. Effective	11	27.5	29	72.5	40	100	3.657	0.003*
b. Not effective	43	58.1	31	41.9	74	100	(1.59-8.4)	
Honorarium								
a. Enough	10	32.3	21	67.7	31	100	2.369	0.078
b. Not enough	44	53.0	39	47.0	83	100	(0.99-5.6)	
Work facilities								
a. Available	15	31.9	32	68.1	47	100	2.971	0.010*
b. Not available	39	58.2	28	41.8	67	100	(1.36-6.5)	

* meaningful at $\alpha = 0.05$

Table 5 shows that nurses who have not a proper implementation of family nursing care found in less capable leadership (58.1%), less honor (53%), and less available working facilities (58.2%) while nurses who demonstrate the excellent implementation of family nursing care due to competent leadership (72.5%), enough honorarium (67,7%), and available work facilities (68.1%).

Further analysis shows that there is no relationship between honorarium with the implementation of family nursing care (P=0.078). However, there is a relationship between leadership (P=0.003) and work facilities (P=0.010, α=0.05) and the implementation of family nursing care by nurses in the public health center of Jambi City.

4. Discussion

Nurses in the public health center had a responsibility to conduct family nursing care in communities that need the assistance of health-care services or nursing home services. The family nursing service was available for vulnerable families who had health problems. The service carried out in the family home, with the following activities: identifying health

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

problems, conducting early housemate cases, health education on families, do a home visit according to the plan, make direct or indirect essential nursing services, provide health services as planned, giving nursing counseling at home, and documentation of nursing [1]

Based on performance theory, three main factors affected the implementation of family nursing, among others: nurse characteristics, personal factors, and work environment. The first factor was the characteristics of nurses, consisting of age, sex, the experience of work, culture, knowledge, and education or training. The second, personal factor, included skills, abilities, self-confidence, motivation, and commitment. Lastly, the working environment factors included job design, organizational structure, policies and regulations, leadership style, reward/honor, and resources or facilities[6][7][8]. Of these three main factors, the focus of this study was the characteristics of nurses and the working environment. The results showed that three factors were affecting the implementation of family nursing care, particularly: training, leadership style, and work facilities. This study was in line with some previous studies.

First, the research of Abdelkader and Othman, entitled Factors Affecting Implementation of Nursing Process: Nurses' Perspective in 2016 with a descriptive design, indicated that lack of educating, training, and motivating factors affected the application of the nursing process [9]. Their study showed that training was one factor that affected nursing care. Training was a process of teaching specific knowledge, expertise, and attitudes to make employees had more skills and able to perform their responsibilities better. Usually, training referred to the development of working skills that can be used immediately[10]. Marquis & Hurson explained that the knowledge gained in training would improve affective, motor and cognitive skills so that it would be able to achieve increased productivity or good results[11].

According to the head of primary health services of the health district of Jambi city, family nursing care training had been often done in public health nursing training. This practice was always carried out annually by the provincial health district or the city health district, but this training usually was only for PHN coordinators of a person in each public health center. Meanwhile, the PHN coordinator was less capable of conveying the training results to other nurses.

Second, Rokstad, Vatne, Engedal, and Selbaek, in their research, found that leadership influenced the implementation of person-centered care in nursing homes[12]. Leadership was the ability and readiness. A person had to be able to influence, encourage, solicit, lead, move others to do something to achieve the goal of an organization [13]. Leader roles are: to guide, lead, motivate, establish excellent communication, organize, supervise, and carry the organization on a predetermined purpose. Head of the public health center as a leader and manager should realize that his leadership style played a massive role in providing support and shaping the positive commitments of health workers, especially nurses to perform their responsibilities and professionals[14].

A leader, in this case, the head of a public health center, should be able to make individuals ready to perform their duties. With the leadership ability as a director and manager, the head of public health centers could implement management techniques and ways that could help achieve efficient and effective family nursing care following the interests of the organization. Based on researchers' observation, the head of public health care had performed their role by guiding, directing, and motivating nurses to conduct family care by giving time and opportunity to nurses to visit the family house according to the existing schedule. However, the role of supervisors and monitors was less well carried out, so the nurses had no control in doing family nursing care. This situation caused some nurses did not do family nursing care in actual standards.

Third, the study of Baraki, Girmay, Kidanu, Gerensea, Gezehgne, and Teklay showed that the shortage of material supply to use in the nursing process had a statistically significant association with the implementation of the nursing process.[15] Work facilities were the means provided by the company to smooth the work activities with various forms, for example, workplace conditions, the technology used, and other supporting means.[16] It was necessary to complete work facilities in the Public health Center to implement family nursing care. The necessary facilities can be a family nursing format ranging from the assessment to the evaluation, stationery, vehicles to visit the patient's home/ family. Nurses of public health

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

care said the work facility was good enough, but the writing format of the family nursing care was too small, so it was slightly tricky to complete the documentation.

Based on the discussion above, we need to improve or develop the implementation of family nursing care, among others: conducting periodic training or workshops on the care of the nursing family for all nurses. Provincial health services could implement this training in collaboration with nursing education institutions that had a community nursing specialist. Furthermore, it was necessary to improve the supervision role of the head of the public health center so that nurses got better control in the implementation of family nursing care for the community. The family nursing form should be written in a bigger font for more comfortable reading by nurses. Lastly, it was expected to increase the quantity and quality of vehicles to visit the family because not all nurses had private vehicles.

5. Conclusions

Most nurses did well in implementing family nursing care in the Public Health Center of Jambi City. In this study, training, leadership, and work facilities had an association with the implementation of family nursing care. Based on the results of this study, several efforts needed to be done to improve family nursing care, among others: increase the training of family nursing care, improve supervision on nurses, and increase work facilities.

Acknowledgments

The author would like to thank the Nursing Department of Health Polytechnic Jambi; Health Office of Jambi City; and all nurses at the Public Health Center in Jambi City.

References

[1] Depkes RI. Pedoman Penyelenggaraan Upaya Perawatan Kesehatan Masyarakat di Puskesmas. Jakarta: Depkes RI. pp. 8-11, 20-23 (2006).

[2] Maurer and Smith. Community/ Public Health Nursing: Health for Families and Populations. St. Louis: Elsevier Saunders. p. 44 (2013)

[3] Depkes RI. Pedoman Penerapan Model Pelayanan Keperawatan Keluarga di Rumah. Jakarta: Depkes RI. (2007).

[4] Tafwidhah, Nurachmah, and Hariyati. Kompetensi Perawat Puskesmas dan Tingkat Keterlaksanaan Kegiatan Perkesmas di Pontianak. Jurnal Keperawatan Indonesia 2012 Volume 15(1); 21-28. http://dx.doi.org/10.7454/jki.v15i1.43 (2012)

[5] Amperaningsih and Agustanti. Kinerja Perawat Dalam Pelaksanaan Perkesmas. JK 2013; IV(1): 204-213. http://dx.doi.org/10.26630/jk.v4i1.1 (2013)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[6] Gibson, Ivancevich, Donnelly, and Konopaske. Organizations: Behavior, Structure, dan Processes. 4th Edition. New York: McGraw-Hill. (2012)

[7] Mahmudi, Mahmudi. *Manajemen Kinerja Sektor Publik*. Cetakan Kedua. Yogyakarta: Unit Penerbit dan Percetakan Sekolah Tinggi Ilmu Manajemen YKPN. (2013)

[8] Mangkunegara, A. A. A. P. Evaluasi Kinerja SDM. Cetakan Ketujuh. Bandung: PT. Refika Aditama. (2014).

[9] Abdelkader and Othman. Factors Affecting Implementation of Nursing Process: Nurses' Perspective. IOSR Journal of Nursing and Health Science. e-ISSN: 2320–1959. p-ISSN: 2320–1940. Volume 6, Issue 3 Ver. I (May-June. 2017), pp. 76-82. DOI: 10.9790/1959-0603017682. www.iosrjournals.org (2017).

[10] Mangkuprawira, S. Manajemen Sumber Daya Manusia Strategik. Bogor: Ghalia Indonesia. (2011).

[11] Marquis, B.L. & Hurson, C.J. Leadership Roles and Management Functions in Nursing: Theory and Application. 6th Edition. Philadelphia: Lippincott Williams & Wilkins. (2006)

[12] Rokstad, Vatne, Engedal, and Selbaek. The Role of Leadership in The Implementation of Person-Centred Care Using Dementia Care Mapping: A Study in Three Nursing Homes. Journal of Nursing Management, 2015, 23, 15–26. DOI: 10.1111/jonm.12072. John Wiley & Sons Ltd 15. (2015)

[13] Suyanto. Mengenal kepemimpinan dan manajemen keperawatan di rumah sakit. Yogjakarta: Mitra Cendikia. (2009)

[14] Huber. Leadership and nursing care management. Third Edition. Philadelphia: W.B.Saunders Company. (2006).

[15] Baraki, Girmay, Kidanu, Gerensea, Gezehgne, and Teklay. A Cross Sectional Study on Nursing Process Implementation and Associated Factors Among Nurses Working in Selected Hospitals Of Central And Northwest Zones, Tigray Region, Ethiopia. BMC Nursing, 16:54. DOI 10.1186/s12912-017-0248-9. (2017)

[16] Ismainar. Manajemen Unit Kerja. Edisi 1. Cetakan 1. Yogyakarta: Deepublish. https://www.google.books.com (2018)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Reminiscence - A Counseling Therapeutic Approach Among Hospitalized Elderly

[1]Nur Afi Darti, [2]Roxsana Devi Tumanggor, [3]Anna Kasfi

[1]afi_darti71@yahoo.com, [2]roxsana.tumanggor@usu.ac.id, [3]annakasfee@gmail.com

[1, 2] Faculty of Nursing, University of North Sumatera, Medan
[3]University of North Sumatera Hospital, Medan

Abstract. This research aimed to explore reminiscence among hospitalized elderly at the University of North Sumatera Hospital, Medan. This study was a qualitative descriptive with ten hospitalized elderly as the research participants. Participants were chosen by using the purposive sampling technique. The criteria of participants were the elderly above 60 years old, cooperative, and no dyspnea. The data collection was done with an interview for 30 – 60 minutes in one session before counseling. The thematic analysis was applied to determine the theme and sub-theme of reminiscence. The research revealed that there were six main sub-themes related to reminiscence, such as social connections, experiencing significant others' death, work, married, hospitalization experience, and life obstacles. Reminiscence was found as an essential reminder that could ease the elderly during hospitalization. We could conclude that the integration of reminiscence was crucial for the elderly to express their feelings and reduce stress as the trigger in psychological problems.

Keywords: Reminiscence, Hospitalized elderly, Qualitative research

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

1. Introduction

Counseling is a practice of health care with a communication approach focusing on individual needs, problems, or feelings in order to apply constructive coping, self-awareness, self-evaluation, and sufficient interpersonal relationship (1). These skills are considered significant in handling life events with various challenges. Researches nowadays revealed that counseling is an effective nursing intervention to improve psychological wellness and contribute to alleviate anxiety and depression symptoms (2). As one of the non-pharmacological therapy, counseling has shown the development of physical and mental health of elderly on its application, such as increases the elderly compliance for prescribed health treatment (3), and improves the elderly quality of life (4).

However, there are some obstacles to counsel the elderly. In many cases, the factors of cognitive impairment, along with the vision and hearing loss, show blocking in the process of counseling. Some researches state that the aging process, as a result of physiological and psychological, is contributed to the instability of the human body (5)(6). Therefore, some techniques are needed to cross the barriers that occur during the counseling process.

Research finds that reminiscence is one of the practical approach strategies for the elderly in the counseling session (4). It described as the using of previous experience to facilitate the sense of comfort, quality of life, or adaptation to the current situation. The activities to facilitate reminiscence include activities to reinforce memory capacities such as open discussion, storytelling, and many others (8). In order to make it more effective, some techniques are sufficient to reduce the disruption during the counseling process. The techniques are; giving information with short and clear language, adjusting the light and room temperature supporting the conditions of the elderly illness, and allowing the elderly to express their feelings (7). This type of communication approach is considered as a mental and recreational therapy (9), which has a unique impact as a natural healing therapy (10). It gives older people self-esteem improvement and self-control in making a decision based on past experiences. People who get this therapy find it is beneficial in decreasing depressive symptoms and improving self-transcendence (11).

A research concludes that there are three main steps to deliver reminiscence therapy in reducing the psychological impact, such as memory recall for positive aspects in the past, the elderly life transition, and identification of the elderly feelings and awareness (12). These techniques are found to bridging the gap in the counseling process (13), since the structured interview in the reminiscence process proves that it suites during the counseling in terms of reducing stress and adapting with a life transition, including hospitalization (11). Therefore, it is needed to conduct the reminiscence therapy prior counseling process for the elderly in order to get the practical way for the counseling approach.

2. Method

The purpose of the study was to identify the strategic steps for the counseling process approach among hospitalized elderly. It was needed to form the question on how to approach the hospitalized elderly before conducting the counseling.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

This research design was qualitative descriptive to explore the therapeutic approach among hospitalized elderly during counseling. The population for this study was all hospitalized elderly at the University of North Sumatera Hospital in 2016. The sample selection was conducted through a purposive sampling technique with specified criteria, such as considered to be able to provide information, able to recount the experience, willing to be interviewed voluntarily and not under pressure. The total of participants was ten elderly above 60 years old. Each participant was assigned counseling as part of the research work in 2-3 counseling sessions. However, before conducted the research, the researcher performed therapeutic approach strategies to develop a therapeutic relationship in order to do a counseling session between the researcher as the counselor and participants as the counselee.

The instrument for this research was adapted from the counseling activities as the nursing intervention (14). Before conducted the counseling, the first step was to build a therapeutic relationship to get more familiar with the elderly lived experience and started the counseling session. We identified some themes during the initial phase of communication. One of the themes was reminiscence.

To collect the data, we do the interview process in Bahasa Indonesia. Counseling for a particular group of age needed consideration of special techniques before interacting with the elderly, such as how to communicate, physical conditions, and caregivers involved in patient's care. Besides, it was necessary to consider the particular elderly condition that could exacerbate the disease when conducted the counseling, such as shortness of breath, fatigue, and indigestion problems. Initial contracts related to the objectives and benefits of the research should also be decided early before the counseling. Before taking the step in counseling, the counselor should obtain the elderly trust. Building trust was the first step in counseling. The counselor took steps such as being an active listener at the beginning of the meeting and reflecting more on the elderly. Review the ability or real strength of the elderly in the past in terms of life skills and problem-solving to assist the elderly in identifying social support and spiritual support. During the counseling process, the family accompanied the elderly.

The researchers conducted the counseling with every elderly with duration 30 - 60 minutes in 2-3 sessions to collect the data. However, sometimes, the schedule of counseling meetings was canceled because of the elderly physical condition that suddenly decreased, or because the elderly had been allowed to go home. Data saturation occurred when themes and categories in the data became repetitive and redundant as no new information can be retrieved through further data collection.

Qualitative data analysis was conducted with the theme and sub-theme analysis. It was done immediately after the completion of each interview process simultaneously with the arranging of transcript data. Analysis began when the first data were collected. Audio-tapes and investigator notes were transcribed verbatim after each session, and theme analysis was used to identify the participant’s verbal or behavioral reaction and their emotional responses.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Written permission to conduct the research was received from the Research Ethics Board Committee of Faculty of Nursing of North Sumatera University, with the Reference Number. 1244/VII/SP/2017. All participants/caregivers were provided informed consent to sign.

3. Result

The research result revealed two significant points, which were the participants' demographic characteristic and the counseling approach strategy for the hospitalized elderly.

Participants' Demographic

According to the participants' demographic characteristics, the researchers interviewed 10 participants. Nine participants were hospitalized in internal unit and one participant was interviewed in hemodialysis unit. The participants' data as follow.

Table 1. Participants' Demographic Characteristics

No	Age	Sex	Level of Education	Occupation
1	60	Male	Junior Degree	Entrepreneur
2	65	Male	Senior Degree	Handyman
3	69	Male	Bachelor Degree	Retired Contractor
5	62	Male	Diploma Degree	Retired Civil Servant
6	79	Male	Junior Degree	Retired Civil Servant
7	65	Male	Junior High	Retired Civil Servant
8	62	Female	Elementary Degree	Housewives
9	73	Female	Elementary Degree	Housewives
10	63	Female	Junior Degree	Housewives

Reminiscence

Research data related to elderly counseling was obtained through the interview, field note, and observation. Then, the data were analyzed with a thematic analysis. The results of the data

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

analysis concluded that the strategies for the counseling approach were included in reminiscence. Reminiscence was one of the nursing interventions by using the reminder of past events, feelings, and thoughts to facilitate the comfort, quality of life, and the adaptation of the current situation. According to the data analysis, the category of reminiscence revealed sub-themes such as social connection, experiencing significant other deaths, life obstacles, work, married, and hospitalization experience. The sub-themes gave the elderly encouragement, refreshed their mind, and reformed the ability of the past in dealing with the current situation. Also, the recall memory assisted the elderly to focus more on the conversation topic.

The activity for reminiscence was identified based on the theory of the therapy in nursing intervention classifications (14). The reminiscence therapy activities were as follows; (1) spending time with the patient, (2) identifying the theme for each session. (3) encouraging the patient to express verbally to positive and negative feelings about past events, (5) observing body language, facial expressions, and sound pressure to identify the most important memories that had been collected by the patient. (7) providing support, empowerment, and empathy to the patient, (8) setting the length of the session according to the patient attention, (9) providing positive feedback for patients with cognitive impairment, and (10) recognizing previous coping skills.

All six themes always showed a fulfilling life and experience among the elderly. Even the experiences were considered negative, but the elders showed that it was part of life events. It was because of a process of transcendence in the aging process (15). At the end of their lives, the elders improved the deity interest compared to the materialistic issue.

Social Connections

According to the research result, some participants discussed their social skills in the community and among friends, which they described as a good relationship with society and higher being. Some elderly stated the comments as follow

> *"Praise to Allah for HIS blessing I was known as a good person everywhere I go. I always build good relationship until now with neighbors. What I always told to do well and help neighbors every time they need help" (P2)*

> *"I treated all people as my friends. That's actually friend. I love seeing friend in coffee shop. And, I like it rather than stay at home" (P7)*

These two statements showed the elderly experience during their life in maintaining a good interpersonal relationship with others. This relationship was also influenced by the close

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

relationship with God, which according to the elderly was a higher being that made the elderly known as good people in the community.

Experiencing the Death of Closest Person

Throughout their lives, the elderly often related to the death of their beloved ones, such as family members, spouses, or colleagues. Telling about this experience induced the elderly emotional experiences and responded to it by showing sadness such as crying.

> *"Three months after my son's death, I felt very upset. My grandson was taken by his mother and lived separate with me. So, I felt so empty" (P8)*

> *My friend died in Arab. Buried but no tombstone (crying). Visiting his grave was not allowed. The police might arrest. He's my friend" (crying)* (P1)

Crying was the emotional experience showed by the elderly during the interview, especially when they described the death of their dearest ones. This response was normal when people react to an emotional experience. All participants in this research had experienced the death of their closest so that it became a usual experience in their lives events.

Life Obstacles

Based on the data analysis, participants talked about life difficulties as one of the initial conversations during hospitalization. The life obstacles were participants' real-life events that they solved with the needed solutions in order to adapt to daily life activities. One participant stated that we should avoid life obstacles with being a kind-hearted person.

> *"It has always been a habit. Do not invite or we call the burden to be our burden. This means that in life it should not always looking for enemy" (P4, line 365)*

This statement was supported by other participants.

> ".. .*So, if there is a problem; try not to make the problem bigger If people are not good to us, we repay them with kindness. Don't be paranoid to others, and it makes my heart calm"* (P2, line 248)

> *"What I learned from life, that GOD has everything. Therefore, we need to make GOD guidance to become our life's purposes. Don't* take others rights, *just take what it is yours"* (P6, line 379)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The statements showed that participants put all the problems in their lives in a proper way based on their experience. The participants were used to treat problems as a matter that need to be relied on God, tried to do good things and always repaying kindness to everyone.

Work Experience

Most participants were retired employees. However, the social activities in the community and the family remain stable. All the participants talked about their work experiences enthusiastically. The participants felt that they had already done something meaningful in their past life.

> *I was a civil servant for more than 32 years in Agriculture Office. So, when I worked there, I had promotion every 4 years and annual salary increased in every 2 years. At that time, my colleagues always told me that I was an exemplary employee" (P6, line 103)*

> *"It's because my job which required me to move every one to two hours. However, it's my responsibility. So, I always feel motivated even my job made me tired"* (P4, line 98)

The statements above showed that occupation was something that the elderly were proud of throughout their lives. They did the job with their responsibilities so that the elderly were always felt motivated during their work experience.

Married Experience

All participants were married, even though some of them had no more spouses since they were left dead. The married experiences were about communication in maintaining their marriage for years. The experiences were shown through respect to each other, tolerance, and open discussion. The participants' statements were as follow.

> *"I have been married for 43 years. All praise to Allah, we are not very common to fight each other. If I did wrong, then my husband will speak to me and vice versa. It is OK if my husband jokes too much. But still, he has to respect me as his wife…". (P10, line 406)*

> *"I make a routine gathering among my family. Each week, I called them to come to my house to give them some spiritual advises. After evening praying, I give them religious advice so that the family is strong together and to ask them to obey God's commands and avoiding the prohibitions" (P6, line 330)*

> *"We always do direct communication if something we don't like from each of us. We tried to open ourselves and not hide anything" (P3, line 223)*

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Based on the statement about their experiences during the marriage, it could be seen that the married life of the elderly was about communication and respect for many years. God and spiritual teaching was considered as part of their efforts to maintain the married life.

Hospitalization Experience

All participants came from two dominant religions in Indonesia, Islam and Christian. Some of them recalled the experience of hospitalization as part of life events, and in some cases it related to the spiritual journey.

> "*Last week I was brought to emergency unit for loss of consciousness. I heard people talk around me, but I couldn't reply them. It's hard for me to open my eyes. The doctors and nurses yelled me to open my eyes, but I couldn't. In my sight, I see my late husband and my late son. I feel them close to me. I say hi, but they ignore me. I miss them so much" (P8).*

> *"I was sick since 2001 and diagnosed with kidney infection. My body was swollen; I could not walk. I was hospitalized in the hospital since August 200" (P3).*

Based on participants' statements, they were diagnosed with a variety of medical diagnoses in which affected the elderly's consciousness and the physical balance before hospitalization. The experience of losing consciousness while being treated gave a spiritual experience to the elderly.

4. Discussion

The aging process is the leading cause of physiological and psychological instability of the human body (6). Therefore, the elderly are prone to suffer from chronic disease (16), cognition impairment, hearing, and vision loss (5), as well as suffer from mental health issues (17–19). Psychologically, the elderly often suffer from depression as the most psychological disorders (20). It is associated with chronic diseases, loneliness, and decline in bodily functions experienced by the elderly (21).

Researches showed that 1-3% of the elderly population suffered from depression (22), 65% experienced loneliness (21), and around 5% of older adults had anxiety as psychological

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

pressure (19). Therefore, it was needed a therapeutic approach in order to minimize the psychological impact of the aging process. Some research showed that counseling in the elderly had a significant impact on psychological health, especially in alleviating mental health symptoms (12). However, the inhibiting factors remained as a burden for counseling provision.

Some techniques were effective in linking the barriers that occurred during the counseling process. Interventions with the aging process approach were considered suitable to minimize the obstacles, as well as to allow the elderly to express their feelings (7). Furthermore, reminiscence was one of the interventions to support the elderly (12). Reminiscence was proved to be a therapeutic method for the elderly in improving cognitive function, self-esteem, communication skills, and alleviate depression symptoms (23). According to research, the result showed that reminiscence was considered as the therapeutic approach in counseling for the elderly. There were six main points found as the reminiscence contents in building the therapeutic relationship before counseling, which were social connections, experiencing significant others' death, life obstacles, work, married, and hospitalization experience. It also showed that reminiscence was more effective when it combined with another intervention, such as story-telling (24). A story regarding social connections was the primary theme found as the leading theme during reminiscence therapy (13).

Research explained that some points in reminiscence were similar to the research result (8). It stated that the story regarding family, work, and life achievement had stimulated the elderly in the therapeutic session during the care. Even if some of the experiences were considered an unfavorable occasion, still it had a positive outcome based on the research result. This conclusion showed a positive attitude in adapting to an everyday situation. Also, (25) it concluded that the application of nursing interventions among the elderly should prepare a narrative approach to improve the mental health status. It was quite similar to the concept of reminiscence. Furthermore, as one of the independent nursing interventions, reminiscence should be conducted in a strategic way (14). It was needed to build strategic ways of developing affinity among the elderly with a discussion regarding life, work, and married experience (26). Talking about these three topics were considered positive in the interpersonal relationship with the elderly. (23) concluded that the integration of reminiscence into a story telling is part of the therapeutic implication for delivering the services. Thus, the elders experience regarding the family, the story of serious illness, the significant others' death, are important to recall the memory in the past. Therefore, the integration of this therapy should have the impact in the elderly capability in problem solving, enhancing self-awareness and minimize the mental illness symptoms.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

As a conclusion, the integration of reminiscence into storytelling was part of the therapeutic implication during the services. Hence, the elderly's experience about the family, the story of serious illness, and the significance of others' death were important to recall the memory. Therefore, the integration of this therapy should have an impact on the elderly capability in problem-solving, enhancing self-awareness and minimize the mental illness symptoms.

5. Conclusion

According to the research result, we could conclude that there was a strategic step to approach the elderly before counseling. Reminiscence was considered a life review that proved as one of the psychotherapy in conducting counseling among the elderly. It showed a significant result in counseling, as the elderly felt comfortable while the counseling session. Also, the reminiscence session was effective in reducing the mental health issues most of the elderly in their later life. Therefore, the need for more therapeutic approach was necessary to conduct.

Acknowledgments

University of North Sumatera/USU funds this research. Researchers coordinated with nurses and the management staff of USU Hospital to collect the data. Researchers acknowledge all supports provided by USU and the hospital for providing fund and data collection approval.

References

1. Kourkouta L, Papathanasiou I. Communication in Nursing Practice. Mater Socio Medica [Internet]. 2014;26(1):65. Available from: http://www.scopemed.org/fulltextpdf.php?mno=153817

2. Dewey A. The role of psychological treatments for depression and anxiety in dementia. Int J Older People Nurs [Internet]. 2016;11(2):160–2. Available from: http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc13&NEWS=N&AN=2016-24445-010

3. Hill A, Brettle A. The effectiveness of counselling with older people: Results of a systematic review. Couns Psychother Res [Internet]. 2005;5(4):265–72. Available from: http://doi.wiley.com/10.1080/14733140500510374

4. Myers J, Harper M. Evidence-Based Effective Practices with Older Adults. 2008;82:207–18.

5. Saxon S, Etten M, Perkins E. Physical Change. Interact Archit. 2010;23–51.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

6. Sturnieks D., George SR, Lord RS. Balance disorders in the elderly. Neurophysiol Clin. 2008;38(6):467–78.

7. Rantucci M, Phm MS, Ph D. C E C O M P L I A N C E C E N T R E N AT I O N A L C O N T I N U I N G E D U CAT I O N P RO G R A M • O C TO B E R 2 0 0 4 > Statement After reading this lesson you will be COUNSELLING GERIATRIC PATIENTS.

8. Chao SY, Chen CR, Liu HY, Clark MJ. Meet the real elders: Reminiscence links past and present. J Clin Nurs. 2008;17(19):2647–53.

9. Thorgrimsdottir SH, Bjornsdottir K. Reminiscence work with older people: The development of a historical reminiscence tool. Int J Older People Nurs. 2016;11(1):70–9.

10. Garrett M, Herring R. Honoring the power of relation: Conseling native adults. J Humanist Couns Educ Dev. 2001;40:139–60.

11. CK S. Structured reminiscence: an intervention to decrease depression in older women. Struct Reminisc An Interv to Decrease Depress Older Women [Internet]. 2006;82 p-82 p. Available from: http://search.ebscohost.com/login.aspx?direct=true&db=cin20&AN=109848850&site=ehost-live

12. Chiang KJ, Chu H, Chang HJ, Chung MH, Chen CH, Chiou HY, et al. The effects of reminiscence therapy on psychological well-being, depression, and loneliness among the institutionalized aged. Int J Geriatr Psychiatry. 2010;25(4):380–8.

13. Kovach CR. Content analysis of reminiscences. Res Nurs Health. 1991;14(4):287–95.

14. Nursing Interventions Classification (NIC) - E-Book - Howard K.

15. Tornstam L. Maturing into gerotranscendence. J Transpers Psychol. 2011;43(2):166–80.

16. Gregg EW, Beckles GL, Williamson DF, Leveille SG, Langlois JA, Engelgau MM, et al. Diabetes and physical disability among older U.S. adults. Diabetes Care [Internet]. 2000;23(9):1272–7. Available from: http://care.diabetesjournals.org/cgi/doi/10.2337/diacare.23.9.1272

17. Mckay R, Casey J, Prof A/, Stevenson J, Mcgowan H. Psychiatry services for older people: a report on current issues and evidence. 2015;(January). Available from: https://www.ranzcp.org/Files/Resources/College_Statements/Position_Statements/RPT-FPOA-Psychiatry-services-for-older-people-revi.aspx

18. Dunn SL. Hopelessness as a Response to Physical Illness. 2005;

19. Wolitzky-Taylor KB, Castriotta N, Lenze EJ, Stanley MA, Craske MG. Anxiety disorders in older adults: A comprehensive review. Depress Anxiety. 2010;27(2):190–211.

20. Fiske A, Loebach Wetherall J, Gatz M. Depression in Older Adults. Vol. 5, Annual Review of Clinical Psychology. 2009.

21. Dykstra PA, Van Tilburg TG, Gierveld JDJ. Changes in older adult loneliness: Results from a seven-year longitudinal study. Res Aging. 2005;27(6):725–47.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

22. Cole MG, Dendukuri N. Risk factors for depression among elderly community subjects: a systematic review and meta-analysis. Am J Psychiatry. 2003;160(6):1147–56.

23. Chen T, Li H, Li J. The effects of reminiscence therapy on depressive symptoms of Chinese elderly : study protocol of a randomized controlled trial. 2012;

24. McKee KJ, Wilson F, Chung MC, Hinchliff S, Goudie F, Elford H, et al. Reminiscence, regrets and activity in older people in residential care: Associations with psychological health. Br J Clin Psychol. 2005;44(4):543–61.

25. Banham JA, Schweitzer RD. Comparative exploration of narrative processes for better and poorer outcomes for depression. Couns Psychother Res. 2015;15(3):228–38.

26. James KL, Bhar SS. Brief reminiscence intervention improves affect and pessimism in non-clinical individuals: A pilot study. Clin Psychol. 2016;20(3):119–24.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Understanding of Person-Centered Care Concept: Medical-Surgical Nurses Perspective

Wan Nishfa Dewi[1], Safri[2]

Email: wan.dewi@lecturer.unri.ac.id; wan_dewi@yahoo.com; ners.safri.bunda@yahoo.co.id

[1,2,] Faculty of Nursing, Riau University

Abstract. Person-centered care is an approach to care that is underpinned by mutual respect and the development of a therapeutic relationship between patient and nurse. This approach had been widely used in giving care to many health-care organizations in developed countries. This study aimed to assess the understanding of person-centered care within medical-surgical nurses. This study was conducted in medical-surgical wards in Public Hospital. The samples were 100 nurses, which taken from six medical-surgical wards using total sampling. A cross-sectional survey using the person-centered assessment tool was used to measure the current understanding of person-centered. The findings of this research indicated that the majority of nurses gained a moderate level of understanding of the person-centered care concept for 63%, some gained a high level of understanding (36%), and one nurse (1%) had low understanding. The findings indicated that the majority of nurses in medical-surgical wards presently had a moderate understanding of person-centered care. A better understanding of person-centered care was necessary in terms of proficiency in person-centered practice.

Keywords: person-centred care, understanding, medical-surgical nurses, Indonesia.

1. Introduction

There has been increasing recognition and consistent discussion in the international literature of the need to promote person-centered care in health services to ensure a positive care experience for patients and staff [1],[2]. Person-centered care focuses on health-care that involves patients by giving them more considerable influence in decision-making and choice, and which is sensitive to the patients' unique physical, psycho-social, cultural, and emotional needs [3]. This type of care requires health care staff to use person-centredness as a focus for developing relationships and plans of care. A person-centered approach to health care can improve the quality of patient care and increase satisfaction and adherence to care programs. Person-centered care is now considered by many to be an essential dimension of quality in health care. Achieving quality outcomes and satisfaction with health and system performance requires a person-centered approach that builds true partnerships between the person and health-care providers. Implementation of person-centered for health-care providers, such as nurses, means selecting and delivering interventions or treatments that are respectful of and responsive to the characteristics, needs, preferences, and values of the person or individual

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[1],[4],[5]. This approach changes the person from having a passive role in health care, to be involved actively in decisions about his or her care. It moves away from an emphasis on disease to a model that integrates the biological, psychological and social dimensions of illness [6],[7].

Currently, many health care services and organizations are seeking to improve health system performance through the implementation of person-centered care model [8]. However, to apply a new approach in daily practice need a comprehensive understanding. Therefore it becomes necessary for every health care system and organization to specific their dedicated staff to recognize and familiar with person-centered care. Terminology of person-centered care is used frequently in many health-care literature. However, its use and definition varies in different policy, guidance, and research and everyday practice [9],[10]. How the concept is translated into everyday nursing care continues to present a challenge [4],[10],[11],[12],[13],[14]. It might be that the philosophy that underpins person-centered care in different countries and institutions has diverse understandings of what person-centered care means and has different ways of translating it into care performance [2]. In large literature, person-centered care has previously been explored, particularly regarding the care of older people, people with dementia, challenges implementing person-centered care and enablers and barriers. While much of the previous research focuses on the care of older people, people with dementia and care home environments, only limited research that focuses on the staff perspective and understanding of person-centered care.

Research on nurses' understanding of person-centered care in hospital settings are demanding to find [4],[15]. Further research is recommended to help a clearer understanding of the meaning and application of person-centered care in daily practice [11],[14]. No study has previously assessed nurses' understanding of person-centered care in Indonesia. However, studies of nurses' understanding of person-centered care mostly discussed in many developed countries. These studies suggest that nurses perceive person-centered care as accompanying responsibilities to satisfy patients' needs and understand patients as an individual human being. Therefore, this research aims to explore the understanding of person-centered care from the perspectives of nurses in developing country context. This research focuses on nurses that work in the medical-surgical ward in public hospitals in Indonesia.

2. Method

This study aimed to assess the understanding of person-centered care from the perspectives of medical-surgical nurses. This study used a descriptive research design using the person-centered assessment tool (PCAT) to measure the level of understanding of person-centered care within medical-surgical nurses [16]. The instrument used to measure person-centered care was PCAT, which had been translated from its original language, English, into Indonesian. To construct the validity and reliability of the instrument, researchers conducted psychometric evaluations of internal consistency to obtain a particular use of the Indonesian version of PCAT. This tool had been adapted and added to some studies in both developed and developing countries. The questionnaire consisted of 13 statements about the care on the five-point scoring scale, ranging from 1(completely disagree) to 5 (completely agree). 100 nursing staff participated as samples recruited from six medical-surgical wards in one public hospital in Riau Province. Full ethical clearance was approved by the relevant organization and ethical

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

committee in line with governance requirements. Informed consent, confidentiality, and anonymity for all respondents are the main ethical issues in this study. The data were analyzed using SPSS statistics version 20.0. Frequency scores and descriptive statistics were generated for all demographic details.

3. Result

Demographic details

There were differences of respondents base on the demographics. The demographics of respondents consist of six items, including gender, age, education, employee status, working experiences, and position in practice. Table 1 shows that the majority of the sample are women with 86 nurses (86 %). Other demographic details show that nurses' age, mostly at early adult with 59 nurses (59 %). The majority of the nurses have working experience for more than six years (69 %), and most of the nurses are primary nurses (84 %).

Table 1. Participants' characteristics details

Characteristics	Frequency		Total	
	n	%	N	%
Gender				
• Men	14	14	100	100
• Women	86	86		
Age				
• Early adult	59	59	100	100
• Adult	37	37		
• Early elderly	4	4		
Education				
• Nursing Diploma	69	69	100	100
• Bachelor + Ners	31	31		
Employee status				
• Permanent	45	45	100	100

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

• Contract	55	55		
Working experience				
• <5 years	31	31	100	100
• 6-10 years	35	35		
• More than 10 years	34	34		
Position in practice				
• Primary Nurse	84	84	100	100
• Team Leader	16	16		

Understanding of person-centred care

Nurses involved in this study demonstrated a better understanding of person-centered care. Table 2 shows that questions involved in a person-centered care assessment tool provide evidence on how nurses answer items in various forms. The majority of nurses fill "agree to completely agree" for most of the questions. From this result, it represents that nurses understand how to provide person-centered care in their daily practice.

Table 2. Person-Centred Care assessment items

	Completely Disagree		Disagree		Neither agree or disagree		Agree		Completely Agree	
	n	%	n	%	n	%	n	%	n	%
We often discuss how to give person-centred care	4	4	9	9	2	2	70	70	15	15
We have formal team meetings to										

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

discuss patients' care	1	1	2	2	3	3	67	67	27	27
The life story of the patients is formally used in the care plans we use	1	1	2	2	0	0	75	75	22	22
The quality of the interaction between staff and patients is more important than getting the task done	2	2	18	18	12	12	58	58	10	10
We are free to alter work routines based on patients' preferences	9	9	44	44	10	10	32	32	5	5
Patients are offered the opportunity to be involved in individualized everyday activities	5	5	14	14	12	12	55	55	14	14
I simply do not have the time to provide person-centred care	3	3	8	8	3	3	59	59	27	27
The environment feels chaotic	3	3	17	17	8	8	52	52	20	20
We have to get the work done before we can worry about a homelike environment	2	2	18	18	16	16	57	57	7	7
This organization prevents me from providing person-centred care	6	6	11	11	5	5	52	52	26	26
Assessment of patients' needs is undertaken on a daily basis	2	2	31	31	5	5	54	54	8	8
It is hard for patients in this facility to find their way around	6	6	16	16	14	14	62	62	2	2
Patients are able to access outside space as they wish	24	24	59	59	1	1	12	12	4	4

Table 3 describes that the majority of respondents currently have a moderate level of understanding of person-centered care (63 %). The result shows that only 1% of nurses have a

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

low level of understanding of person-centered care, while some nurses understand at a high level of person-centered care (36%).

Table 3. Respondents' understanding of Person-Centred Care

Level of understanding	Frequency		Total	
	n	%	N	%
• Low	1	1	100	100
• Moderate	63	63		
• High	36	36		

4. Discussion

This study assessed the level of understanding of medical-surgical nurses in Indonesia about person-centered care. Based on the PCAT score, the majority of nurses had a moderate to a high level of understanding. The findings of this study showed that nurses who worked in medical-surgical wards recognized the meaning of person-centered care in their daily practice. It could be seen that nurses responded to the questions reflected in their current understanding of person-centered care. McCormack and McCance [4] and McCormack, Dewing, Breslin, et al. [17] suggested that, in many care settings, nurses experienced person-centered care outcomes rather than delivered person-centered care consistently. These issues were evident in this study. The nurses showed their implications in everyday interactions in medical-surgical ward settings, even though nurses might not be aware of the care they provided is person-centered.

Person-centered care was a new approach in the nursing practice of health care settings in general and particularly in public hospitals in Indonesia. It influenced nurses to comprehend the essence of person-centered care in daily practices. However, from the finding of this study, it was evident that the majority of nurses had a moderate level of understanding. The experiences of nurses in this study illustrated their understanding and then practiced this approach in their daily activities. The insight presented by nurses suggested that they had an understanding of the distinctions of care that promoted person-centredness, although many works of literature suggested that practiced the learning was needed toward a new approach [18].

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The finding of this study interestingly suggested that the nurses mostly have a positive response to the person-center care, which indicated that the nursing labor force of Indonesia knew the manners considered practicing person-centered care. Nurses in medical-surgical wards were capable of providing person-centered care practices in their daily services to patients. Ensuring nurses to maintain their perspectives of person-centered care required a standard practice from the institution. Moreover, the environment in the wards became essential for the possibility of applying person-centered care in health care services. It led to an increase in the adequate capacity of the nurses' practice, which reflected from the high quality of nursing care provided to patients. Some works of literature argued that a person-centered care approach to health care could improve the quality of patient care and increased adherence to care programs [8]. It was a challenging situation in health care settings. Nevertheless, health care professionals needed to convinced that they could identify and sustain the characteristics of care that demonstrated a person-centered, holistic, and collaborative approach to care. Therefore, the vital role of the organization was to consider the necessity to strive for high-quality of person-centered care by developing an organizational culture where nurses were encouraged and enabled to see individual needs as a person in their care [19].

5. Conclusion

In summary, the findings of this study indicated that the majority of nurses in medical-surgical wards had a moderate level of understanding of person-centered care. How nurses comprehended person-centered care would influence their practice in their daily activities. Therefore, health organizations needed to initiate the application of person-centered care earlier in the wards. The findings of this study would enlighten and strengthen work structures that explored the understanding and application of person-centered care, particularly in medical-surgical ward settings..

Acknowledgments

The authors would like to acknowledge the Research and Community Services Unit of Riau University for providing a research grant for this study. This grant made the authors able to finish this study and made contributions to nursing literature.

References

[1] World Health Organisation. : Person-centred Healthcare: A Policy Framework, Geneva: WHO (2007)

[2] Dewi, W.N., Evans, D., Bradley, H. and Ullrich, S.: Person-centred care in the Indonesian

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

healthcare system. International Journal of Nursing Practice. Vol. 20. No. 6. pp. 616-622 (2014)

[3] Kitson, A., Marshall, A., Basset, K. and Zieth, K.: What are the core elements of patient-centred care? A narrative review and synthesis of the literature from health policy, medicine and nursing. Journal of Advance Nursing. Vol. 69. No. 1. pp. 4-15 (2012)

[4] McCormack, B. and McCance, T.: Person-Centred Nursing Theory and Practice. Oxford, Wiley Blackwell (2010)

[5] Pelzang, R.: Time to learn: understanding patient-centred care. British Journal of Nursing. Vol. 19. No. 14. pp. 912–917 (2010)

[6] Wolf, D., Lehman, L., Quinlin, R. *et al.*: Can nurses impact patient outcomes using a patient centred care model? The Journal of Nursing Administration. Vol. 38. No.12. pp. 532–540 (2008)

[7] Wolf D, Lehman L, Quinlin R, Zullo T, Hofman L.: Effect of patient-centered care on patient satisfaction and quality of care. Journal of Nursing Care Quality. Vol. 23. No. 4. pp. 316– 321 (2008)

[8] Santana, M. J., Manalili, K., jolly, R., J., et al.: How to practice person-centred care: A conceptual framework. Health Expectations. Vol. 21. Pp. 429-440 (2018)

[9] Goodrich, J. and Cornwell, J.: Seeing the person in the patient: The Point of Care review paper. London: King's Fund (2008)

[10] Goodrich, J.: Exploring the wide range of terminology used to describe care that is patient- centred. Nursing Times. Vol. 105. No. 20. pp. 14-17 (2009)

[11] McCormack, B.: Person-centredness in gerontological nursing: an overview of the literature. International Journal of Older People Nursing. Vol. 13. pp. 31-38 (2004)

[12] Price, B.: Exploring person-centred care. Nursing Standard. Vol. 20. No. 50. pp. 49-56 (2006)

[13] Edvardsson, D., Sandman, P., and Rasmussen, B.: Swedish Language Person-centred Climate Questionnaire – Patient Version: Construction and Psychometric Evaluation. Journal of Advanced Nursing. Vol. 63. No. 3. pp. 302-309 (2008)

[14] Nilsson, A., Rasmussen, B., and Edvardsson, D.: Falling Behind: a substantive theory of care for older people with cognitive impairment in acute settings. Journal of Clinical Nursing. Vol. 22. No. 11-12. pp. 1682-1691 (2013)

[15] Peek, C., Higgins, I., Hawke, M. S., McMillan, M., and Harper, D.: Towards innovation: The development of a person-centred model of care for older people in acute care.: Contemporary Nurse. Vol. 26. No.2. pp. 164-176 (2007)

[16] Edvardsson, D., Fetherstonhaugh, D., Nay, R., and Gibson, S.: Development and initial of

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

the person-centred care assessment tool (P-CAT). International Psychogeriatrics. Vol. 22. No. 1. pp. 101-108 (2010)

[17] McCormack, B., Dewing, J., Breslin, L. *et al.*: Developing person-centred practice: nursing outcomes arising from changes to the care environment in residential settings for older people. International Journal of Older People Nursing. Vol. 5. pp. 93–107 (2010)

[18] Ross, H., Tod, A., M., Clarke, A.: Understanding and achieving person-centred care: the nurse perspective. Journal of Clinical Nursing. Vol. 24. No. 9-10. pp. 1223-1233 (2014)

[19] Hemingway, A.: What is nursing care and who owns it?. Nursing Times. Vol. 109. No. 6. pp. 16-17 (2013)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

First Time Experiencing Episiotomy: Views and Perceptions of Saudi Women.

Ibtesam Jahlan1, Kay McCauley2, Joy Lyneham3

{ibtesam.o.j@gmail.com1, kaymcce@outlook.com2 , Joy.Lyneham@newcastle.edu.au3}

Assistant professor, King Saud University1, Associate Professor, RMIT University2, Associate Professor, University of Newcastle3,

Abstract. The study investigated personal experience and perceptions of episiotomy among Saudi primiparous women from the phenomenological perspective. It used a qualitative research design for randomly collecting data from five primiparous married women from one public hospital in Riyadh, Saudi Arabia. The data was collected through interviews using a semi-structured questionnaire, which was examined using a thematic analysis. The findings reveal that post episiotomy pain was the most prominent feature of 'bad experience' among the participants. It showed that perineal trauma reduced mobility and daily activities, including dyspareunia. Surprisingly, results also highlighted that participants were willing to undergo the procedure again to improve the poorly sutured perineum to enhance their self-esteem. It concludes that a restrictive episiotomy should be embraced in the obstetrics to enhance maternal experience and satisfaction. The use of evidence-based guidelines on obstetrics circumstances proves instrumental as it necessitates episiotomy procedure.

Keywords: Episiotomy, Episiotomy Experience, Perineal Trauma, Restrictive Episiotomy.

1. Introduction

Episiotomy refers to the surgical intervention where the end part of the birth canal size is increased to facilitate the expulsion of the fatal head and to prevent overstretching of the perineum region [1]. Mainly, the procedure is conventionally concluded by repairing the perineal incision through suturing [2]. Despite the frequent normal vaginal deliveries, the episiotomy rates are still higher in some regions ranging between 60 to 80 percent [3]. Most studies confirm that a significant number of women undergo episiotomy procedure in obstetrics care worldwide [3, 4].

Episiotomy was first introduced in 1742 as an attempt to reduce the fetal distress. However, this goal has expanded towards the reduction of perineal damage, traumas, and to speed up childbirth process [5]. Despite its frequent use, the procedure fails to achieve its intended objectives, which leads to adverse consequences, i.e., increasing the risk of postpartum bleeding and perineal wound infections [6]. Primarily, it accounts for a high degree of lacerations, accompanied by an unbearable pain that interferes with the normal labor process. Therefore, episiotomy procedure renders agonizing childbirth experience among women, which contributes to the women's dissatisfaction concerning vaginal delivery [7].

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Accordingly, episiotomy is considered a controversial procedure among obstetricians [1], particularly for is its array of impact in the primiparity women population, such as shoulder dystocia, fetal weighting (>4 kg), complicated perineal tear, increase in the 2nd stage of labor, fetal distress, and use of episiotomy without a justified reason [1]. Various researches have indicated that the frequent use of episiotomy should be reduced and should be adopted in selective cases given its contribution to the infection rate, perineal pain, loss of blood, dyspareunia and most importantly the 3rd degree and 4th-degree perineal tears [8,9], promoting the restrictive use of episiotomy.

The risk of traumatic posterior perineal damage and the need for suturing perineal trauma reduces due to the restrictive use of episiotomy [10]. In 2013, the American College of Obstetricians and Gynecologists also recommended the restrictive use of episiotomy due to an increased rate of injury [11]. The same guidelines were issued by the World Health Organization (WHO) [1]; however, the episiotomy rates persist in being high [1]. This necessitates the studies that comprehensively enlighten the detrimental effect of episiotomy, revealing new insights, and providing evidence on the use of episiotomy in obstetrics practice. Some studies suggest the adoption of continual quality improvement programs in obstetrics reduces unnecessary episiotomies [1]. Also, most of the researches in this research area has been concentrated on women in general and not on their first episiotomy experience, particularly in Saudi Arabia [1, 2]. Therefore, this study intends to assess the real experience of Saudi women concerning their view, perception, and attitude towards their first-time experience of episiotomy. The study assumes that its findings would provide useful recommendations on episiotomy use in obstetrics practice in Saudi Arabia.

2. Rationale of the Study

Over the years, various medical technological advancements have been introduced to improve women's birthing experiences in obstetrics. Most frequently used devices include continuous cardiotocography (CTG) monitoring, enemas, and episiotomies [1-6]. Although pre-labor enemas are mainly used to induce labor and enhance the room in the birth canal, it is widely used for reducing the risk of fecal contamination of episiotomy incisions [1, 3-6, 12]. Although pre-labor enemas are not an evidence-based obstetrics practice, it is considered beneficial in reducing afterbirth bowel movement, neonatal infections, and episiotomy dehiscence [13]. However, despite the intended obstetrics benefits of enemas and episiotomies, the routine use of these procedures has significantly interfered with the nature of labor cycles and overall vaginal delivery experience among women [6-8,11-13].

The frequent use of episiotomy is also promoted due to its effectiveness against vaginal tears involving perineal skin, muscles, and anal sphincter, which are difficult to be repaired by suturing [2]. Therefore, the episiotomy procedure is observed to prevent perineal damage due to overstretching of the perineum region [14]. Importantly, given that episiotomy incisions are straight as opposed to the irregular natural perineal lacerations, it can easily be repaired and health better as compared to natural perineal lacerations [13,14]. However, several clinical studies conducted in obstetrics settings indicate that spontaneous perineal tears heal better and faster than

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

sutured episiotomies. For instance, a recent review of Jiang et al. [15] showed that episiotomy incisions did not improve the perineal healing and are not justified for perineal/vaginal trauma. Their study findings are consistent with other similar studies conducted in a similar obstetrics setting [16, 17].

Primary, episiotomies are of two types, namely, midline and mediolateral episiotomies [18]. Midline episiotomy involves surgical incision of the median raphe of perineal region straight from the center of fourchette towards the anus along the midline. On the contrary, mediolateral episiotomy involves surgical incision downwards from the midpoint of the fourchette towards the right or the left. The mediolateral incision is usually 6 cm at an angle ranging between 40oC to 60oC degrees from the perineal line to the anus [19]. There is no evidence on whether the choice of episiotomy procedures impact its outcome during surgical vaginal delivery. Therefore, the preferential episiotomy technique is not clearly delineated [20]. However, midline episiotomies often result in deeper perineal tears as compared to the mediolateral episiotomy. This implies that the mediolateral episiotomy technique reduces the risk of third-degree perineal tears [19, 20]. In Bodner [21] study, mediolateral episiotomy was observed to reduce the perineal tears along with vaginal and labial trauma during operative vaginal delivery. However, in a nationwide survey by Macleod and Murphy [22] conducted on registered and practicing obstetricians in Ireland and the United Kingdom (UK), the respondents had a differing opinion over the benefits of episiotomy in view of preventing anal sphincter tears during operative vaginal delivery.

Some of the potential adverse effects of routine episiotomy procedures include accidental incision of the anal sphincter or rectum, unsatisfactory anatomical misalignment or narrowing of the introitus and vaginal prolapse that may result in sexual dysfunction [23]. In addition, the involved pain in the sutured perineum and susceptibility of the perineal region to infections and dehiscence are serious concerns surrounding the routine use of episiotomy [20]. Anal sphincter injuries during episiotomy procedures often cause anal incontinence after perineal repairs. This occurs in about 30-50% of women undergoing episiotomy in obstetrics. In this regard, midline episiotomy is highly controversial in obstetrics since it is strongly associated with an increased risk of anal sphincter injuries [19].

A review for understanding the evidence-based practice of episiotomy in obstetrics was conducted, which recommended full adoption of the restrictive approach to episiotomy in obstetrics practice. Despite it, its prevalence remains high such as 66 percent in Oman [24], 56.3 percent in Turkey [25], and 36.4 percent in Saudi Arabia [26], which are higher than the WHO recommended rates, i.e., 10 percent [27]. Accordingly, the research concerning the women's understanding and their decision towards the birth procedure were evaluated, which showed that about 34 percent of patients were unconsulted concerning episiotomy in Queensland [28], while women in Canada were also unaware of the episiotomy's outcome [29]. Also, most researches conducted on the experience of the primiparous mothers are restricted to Western societies [27, 30] However, there remains a gap concerning the Saudi primiparous women perception and view towards episiotomies, which is bridge by the present study.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

3. Episiotomy Practice; Routine or Restrictive?

Following the potential immediate and lifelong adverse effects of routine episiotomy, most studies have intensely debated on the suitability of routine and restrictive practice of episiotomy in obstetrics. In a systematic review, Cleary-Goldman and Robinsons [31] examined the practice of episiotomy from the 18th century to the year 2003. Their analysis concludes that the restrictive use of episiotomies enhances obstetrics outcomes concerning perineal incision healing, patient satisfaction, and reduced obstetrics care costs. These conclusions are consistent with a recent systematic review of Jiang et al. [15] that there is no justification that the use of episiotomy reduce perineal tear.

Few clinical studies have evaluated the real experiences of women on procedural and post episiotomy pain, including postpartum discomforts induced by the sutured perineal incisions. In a survey study conducted by Priddis et al. [32] on the women, real experience on post episiotomy pain concluded that post episiotomy pain was unbearable and accounted for their negative attitudes towards episiotomy procedure. Similarly, in a cohort study in the UK, Andrews et al. [33] assessed the tolerability of post episiotomy pain in a three months postpartum period using visual and verbal pain scales. Their study concludes that post episiotomy pains are intolerable and persist longer than postpartum pain caused by spontaneous perineal tears. The sutured perineal wounds usually cause difficulties in sitting, passing urine, walking, socializing, including adyspareunia during the better part of the postpartum period. However, no significant differences were observed regarding postpartum dyspareunia between the two groups. These findings are consistent with other similar studies [23, 34]. Furthermore, post episiotomy pain is observed to interfere with the normal bonding of mothers with their newborns during the early postpartum period [35]. Duarte et al. [36] concur with Bazi et al. [37] that episiotomy compromises the performance of pelvic floor muscle, which sequentially compromises the normal functioning of the urethra and anal sphincter muscles, therefore, increasing the risk of prolonged incontinence. These studies strongly suggest that practicing routine episiotomy in obstetrics is risky. The main justification of routine application of episiotomy among most obstetricians is to prevent the occurrence of third- and fourth-degree perineal tears, which are difficult to repair. On the contrary, Moini et al. [38] concur with Carroli and Mignini [39] that episiotomy procedures may result in third- to fourth-degree perineal incisions, which may have poor healing despite suturing.

Considering the risks associated with the routine application episiotomy in obstetrics, the World Health Organization's [40] recommends restrictive and personalization of episiotomy application. This recommendation has greatly reduced the rates of episiotomy application in obstetrics practice from 80 % to about 18-25% in Western countries. From the reviewed obstetrics records in one of the largest hospitals in the US, the rates of episiotomy reduced from 60.9 % in the year 1979 to 24.5 % by the year 2004 [1,41]. Similarly, in Victoria (Australia) obstetrics records from the year 2005 to 2006 confirms that the application rates of episiotomy have reduced significantly to about10-18 % of all the normal vaginal deliveries in both public and private hospitals [42].

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

However, the rates of application of episiotomy in obstetrics are still exorbitant in Qatar despite the WHO recommendation that episiotomy application rates should not exceed 10% of all vaginal deliveries. The rate of application of episiotomy in Qatar is as high as 66% [24], 56.3 percent in Turkey [25], and 41% in Jordan [4]. In their pursuit to initiate restrictive episiotomy, Fermandes, Benjamin, and Edwards [43] introduced evidence-based episiotomy guidelines in obstetrics setting in one of the hospitals in Dubai known to practice routine episiotomy. These guidelines reduced the rates of episiotomy from 64 % in the year 2006 to less than 20 % in the year 2008 without increasing incidences of third- and fourth-degree perineal tears. From the reviewed literature, it is evident that the routine application of episiotomy in obstetrics increases the risk of immediate and life-long adverse effects on the perineum. Therefore, the procedure should be personalized to ensure restrictive application to improve obstetrics care.

4. Women's views and perceptions towards episiotomy

Quantitative evidence from the literature has primarily focused on the potential adverse effect that can result from the routine episiotomy in obstetrics care of primiparous mothers [44, 45]. Only a few qualitative studies have assessed the psychosocial aspects of episiotomy [27, 32, 46]. To overcome the distress and the adverse impact resulting from an episiotomy, that is important to bridge the gap and facilitate proper maternal care of primiparous mothers. For instance, Coates et al. [46] study on Chinese primiparous mothers and Priddis et al. [32] on Australian primiparous mothers showed that episiotomy causes distress among mothers and impacts their psychological wellbeing post-pregnancy. The findings of these studies are instrumental and serve as a turning point for deriving holistic findings concerning the psychosocial effects of episiotomy on childbirth experience.

Anecdotal studies illustrate that lifelong post episiotomy perineal trauma negatively affects the mothers' psychosocial state, mother-child bonding, and sexual life of women who have undergone unnecessary episiotomy in obstetrics [47, 48]. In a mixed-methods survey of primiparous mothers, Henriksen et al. [49] highlight that mothers frequently complained of an unjustified need for episiotomy procedure. Nevertheless, the subjects also complained about inadequate preparation for the episiotomy procedure.

Even though routine episiotomy is being replaced with restrictive episiotomy practice, some women still believe that episiotomy is important for their safety and the safety of their newborns during normal vaginal delivery [15]. Therefore, to operationalize evidence-based episiotomy application in obstetrics practice in such scenarios requires women education on the safety, benefits, and potential adverse effects of episiotomy. Importantly, the involved obstetricians need rigorous training on the personalization of episiotomy applications basing on the evidence-based practice of episiotomy [50].

From the little available evidence, it is apparent that most women have negative attitudes towards episiotomy procedure due to postpartum pain discomforts associated with sutured perineal incisions. However, the available studies have evaluated the psychosocial effect of episiotomy

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

only among women from western countries. Therefore, similar studies are required in the Middle East, particularly in the Kingdom of Saudi Arabia.

5. Methodology

Since the study aims to evaluate the personal experience of Saudi primiparous women who have undergone episiotomy, the appropriate methodological approach to this study is phenomenology. Phenomenology is the study of human phenomena that can be neither quantified nor controlled [51]. In this regard, the phenomenon is something that is "shown, or revealed, or manifested inexperience." Clear understanding and development of deep insight into the human phenomenon require an inquiry into personal experience. However, although phenomenological inquiry focuses on personal experiences, qualitative studies that apply methodological phenomenology should not aim at studying individuals but rather the collective experience [51].

Given that patients' experience is the most important aspect of improving nursing care, the phenomenological approach is widely used as a qualitative framework for qualitative studies in the field of nursing and midwifery [52]. Importantly, asking how a patient feels about a medical procedure and being empathetic is the underlying principle of better nursing and midwifery care. This is important for continual improvement of most nursing procedures for improving patient experience and overall satisfaction. Therefore, the phenomenological approach to nursing and midwifery is important in evaluating and reviewing the prevailing nursing practice to conform to patients' expectations. This can be achieved through reviewing of healthcare policies and procedural guidelines to enhance evidence-based nursing practice in obstetric care [52]. Previous researches have adopted a similar approach for experiencing the experience of the women [27, 53] and were able to draw holistic findings.

Therefore, this study will adopt the six methodological themes as proposed by a contemporary hermeneutic phenomenologist [Van Manen]. The procedural array of activities for conducting the phenomenological inquiry is as outlined below.

1. Turn to an interesting phenomenon (looking to the nature of the lived experience).
2. Investigate the lived experience as we live it, not as we conceptualize it (existential investigation).
3. Identify and reflect on the essential emergent themes that characterize the phenomenon (phenomenological reflection).
4. Describe the phenomenon through the art of writing and rewriting [54].
5. Maintain a strong and oriented relationship to the phenomenon.
6. Balance the research context by considering the parts and the whole.

However, the last two phenomenological items were developed later by van Manen [54].

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Sample Population

Eligible participants were identified through abstraction of antenatal medical records in one public hospital in Riyadh. The participants were recruited based on the determined inclusion and exclusion criteria, as depicted in Table (1). However, the eligible participants were initially contacted by a single nurse to verify their respective antenatal medical records.

Table 1. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Primiparous women	No primiparous women
Vaginal delivery with episiotomy	Did not had a vaginal delivery with episiotomy
Had delivery in previous two or three months	Did not have delivery in the previous two or three months
Married Women	Unmarried Women
Age between 20 to 40 years.	Age other than 20 to 40 years.

Ethical Consideration

A study intent statement was read to seek participants willing to participate in this phenomenological study. Similarly, written copies of the study intent statement were sent to their respective home addresses. Similar copies were resent to them after several days to confirm their willingness to participate were five women signed the consent to participate. The consenting participants were asked to provide their pseudonyms to enhance the confidentiality of their participation. They were contacted to arrange for interview sessions. This study was approved by the Monash University Human Research Ethics Committee (MUHREC).

Data collection

The data was collected using a separate semi-structured interview. These were conducted at participants preferred private venues to enhance confidentiality and co-operation, which were mostly their respective homes or their families'. All interview sessions were conducted in the Arabic language guided by a semi-structured questionnaire with open-ended and non-judgmental inquiry items relevant to their personal experience of episiotomy. This allowed participants to seek clarifications on inquiry items they deemed unclear. Importantly, all interview sessions were recorded using a digital voice recorder for further evaluation. All the recorded interviews (in Arabic) were translated to English in verbatim, and the validity of the translations was verified by

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

another Saudi female translator holding a Master's degree from Monash University. The time duration for the interview ranged between 40 minutes to 60 minutes. In addition, unspoken parts of the respondents, such as laughing, smiling, and the silence was noted. The collected data were analyzed and kept in the university premises to conform to the MUHREC regulations on participants' confidentiality.

6. Data Analysis

The study used thematic analysis to examine the identified themes in the interview responses. Thematic analysis was selected as it coincides with the polythematic nature and highlights the common themes underlying the study, as supported by Braun and Clarke [55] and Rubin and Rubin [56]. The interview responses were transcribed, coded, and assigned to their relevant themes. Such as similar descriptions of episiotomy experience in the collected data were coded, refined, and classified accordingly.

7. Results

Three main themes concerning episiotomy experience among the participants emerged from thematic analysis. Such as, it was evident that episiotomy experience was unattractive among the respondents. This was frequently attributed to procedural episiotomy traumas, perineal discomforts, and prolonged perineum healing. One participant was discontented with the procedure since she only noticed the sutured perineal incisions, while only one respondent felt that the procedure was necessary to enhance her vaginal delivery. However, she admitted that the procedure was painful and was, therefore, dissatisfied with the appearance of sutured perineum. All participants concurred that the procedure impaired their normal `daily life` (daily activities). The procedure resulted in discomfort in walking, sitting, lifting, passing urine, and sex due to painful, tightly sutured perineum. Given the post episiotomy trauma, all participants are of the same view regarding interfered bonding with their newborns. The pain made it difficult to timely respond to the emotional needs of their newborns, including breast-feeding. Some were forced to live such critical tasks to the available members of their extended families; therefore, affecting mother-to-child bonding during the painful healing process of their sutured perineum. In addition, the participants were very concerned about the healing process of their sutured perineum. Some participants revealed that they had received very little follow-up attention from their obstetrics care. They also admitted that they lacked reliable resources of information on how to take care of their perineal wounds. Due to insufficient follow-ups, most participants were unable to establish whether the sutured perineum had fully healed or not.

Secondly, most participants admitted that they expected such procedure before being admitted to the obstetrics during their labor. They were hinted about what to expect mainly from social sources such as female friends and relatives within their communities. However, some participants asked health professionals about the episiotomy procedure since social opinions were contradicting. Nevertheless, they received contradicting subjective opinions from all the sources, whether social or professional.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Despite the painful testimony about episiotomy, it was interesting to note that the participants were glad to have had an episiotomy suggesting that they were willing to have the procedure in the future. They justified that a second episiotomy will be an ideal opportunity to improve the appearance of the poorly sutured perineum and enhance self-esteem. They believe that the procedure is likely to tighten their perineum and the vaginal fourchette for better sexual pleasure. Importantly, they believed that it would reduce the duration of painful labor and any other potential complications during their second vaginal deliveries.

8. Discussion

From the study results, it is evident that episiotomy is painful with unbearable discomforts during the better part of the early postpartum period. Given that most of the participants believed that their perineum was poorly sutured, they believe that a second episiotomy will be an ideal opportunity to improve the suturing. From the results, it is also apparent that Saudi women share such women-sensitive birthing experience among themselves in women's social groups. The most outstanding physical effects of episiotomy include compromised body movement such as sitting, walking, passing urine, and doing daily chores due to unbearable perineal trauma. These revelations are consistent with results from other randomized controlled trials conducted by [53].

Dyspareunia is an important facet of post episiotomy pain. Poorly sutured premium with delayed healing may affect women's sexuality up to the second year of the postpartum period [57]. Prolonged dyspareunia can potentially compromise the sexual relationship among the spouses [20, 33). Women with intact perineum are less likely to experience prolonged or severe dyspareunia as compared to those with perineal trauma induced by obstetric instrumentation [58]. Most studies reveal that the rate of resumption of sexuality is about 40% six weeks postpartum period among women who did not undergo episiotomy. This implies that women with perineal wounds may take longer to resume their sexuality comfortably. However, there is no evidence on the effect of episiotomy on sexual arousal, lubrication, and general satisfaction [59]. However, Ejegård, Ryding, and Sjogren [60] argue that episiotomy can cause virginal dryness for up to 18 months.

Various studies endorse the findings of the study depicting poor healing after episiotomy [3-8]. For instance, accidental anal sphincter tears, poor post episiotomy follow-up, and inadequate wound care can lead to prolonged and poor healing of perineal wounds. This can lead to urinary and anal incontinence that may persist in several years of post-episiotomy [61]. Lack of adequate information about perineal wound care is evidenced since most participants reported using unspecified skin creams not otherwise recommended by their obstetricians. Although there are various topically applied local anesthetics for managing perineal pain, none of such products was recommended to any participants in this study [62].

To reduce and ease perineal trauma and swelling, the local application of ice cubes is traditionally used [63]. Cold induction as a pain management strategy is observed to be effective in not only easing perineal trauma but also reducing the associated perineal swelling, therefore, enhancing healing [64]. Combined pain management therapies such as local and systemic

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

analgesic agents can be effective in relieving perineal trauma if well administered. Paracetamol, codeine, dextropoxephene, and dipyrone are commonly used systemic analgesic agents for post-episiotomy pain management [65]. In a randomized double-blinded placebo-controlled trial, Delaram, Dadkhah, and Jafarzadeh [66] showed that diclofenac rectal suppositories are effective in managing post episiotomy trauma. Infrared therapy is less frequently used in western countries for perineal wound care and pain management due to unproven safety and efficacy [67]. Given that, not all women prefer episiotomy, it is important to embrace education during antenatal clinic visits. This is likely to empower Saudi women on the benefits and potential adverse effects of episiotomy to make them have informed choices at the time of vaginal delivery.

Research Challenges and Limitations

The limitation of the study includes its recruitment of only primiparous subjects, who underwent episiotomy procedure. An episiotomy is a routine procedure for all Saudi women having their first babies through normal vaginal delivery. Therefore, the characteristics of the sample study population are not representative. The translation of the recorded semi-structured interviews was challenging since finding a non-Saudi female translator in Australia where the analysis was carried out was complicated, along with the inclusion of a small sample size. However, this study did not aim for the generalizability of the derived findings.

Recommendations and practical implications

From this study, it is apparent that episiotomy has multiple potential adverse effects that may prolong during the postpartum period. Therefore, it is important to shift from routine to personalized (restrictive) episiotomy in obstetrics practice. However, this can only be possible if the Saudi Ministry of Health develops strict guidelines for obstetrics circumstances that require an episiotomy. The development of such guidelines should be based on the most recent evidence-based obstetrics practice for episiotomy application. Similarly, the health ministry should introduce a midwifery model of maternal care in Saudi Arabia, to enhance close monitoring of pregnant women throughout their gestation period, including the postpartum period. This will enhance the proper monitoring of perineal healing in case episiotomy was deemed necessary. At the organization level, the management should embrace practically the practice of episiotomy through evidence-based practice training sessions. This will enhance the personalized and safe application of episiotomy. Importantly, all expectant mothers should be educated and empowered on recent developments of episiotomy practice. They should be educated about the short-term and long-term benefits and adverse effects of the procedure. This should also include evidence-based perineal wound care should they undergo an episiotomy in the future.

9. Conclusion

Episiotomy in obstetrics practice remains a controversial procedure in evidenced-based medicine and nursing practice. Health professionals have varying personal opinions regarding the supposed benefits and potential adverse effects of episiotomy. Although the main reason for

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

practicing episiotomy is to enhance vaginal delivery in cases of fetal distress, the procedure is not necessary for all women undergoing vaginal delivery. The main adverse effects of the procedure include prolonged perineal trauma, poor perineal healing, and impaired genital are that may limit daily activities and the resumption of postpartum sexuality. This study revealed that prolonged perineal trauma is the most outstanding adverse effect of episiotomy. Despite this, most participants who thought that their perinea were poorly sutured were likely to accept the second episiotomy procedure. They believed that the second episiotomy would be an ideal opportunity to correct the poorly sutured perineum to enhance self-esteem. Based on the findings and supporting evidence, it is justified to adopt the restrictive application of episiotomy in obstetrics practice to avoid the involved adverse effects and enhance patient satisfaction.

References

1. Zaidan, A. Hindi, M. Bishara, A. Alolayan, S. and Abduljabbar, H.: The Awareness Regarding the Episiotomy Procedure Among Women in Saudi Arabia. Materia Socio-Medica, Vol. 30, pp. 193 (2018)

2. Kellie, F. J.: Suturing versus alternative closure techniques for repair of episiotomy or second-degree perineal tears. The Cochrane database of systematic reviews. Vol. 8, (2017).

3. Nassar, A. H. Visser, G. H. Ayres-de-Campos, D. Rane, A. Gupta, S.: FIGO Safe Motherhood and Newborn Health Committee, ... and Lloyd, I.: FIGO Statement: Restrictive use rather than routine use of episiotomy. International Journal of Gynecology and Obstetrics. Vol. 146, pp. 17-19. (2019)

4. Khresheh, R. and Barclay, L.: Knowledge, attitude and experience of episiotomy practice among obstetricians and midwives in Jordan. Women and Birth. (2019)

5. Aasheim, V. Nilsen, A. B. V. Reinar, L. M. and Lukasse, M.: Perineal techniques during the second stage of labour for reducing perineal trauma. Cochrane Database of Systematic Reviews. Vol. 6, (2017)

6. Vakili, F. Mirmohammadaliei, M. Montazeri, A. Farokhi, M. and Minaee, M. B.: Impact of hypericum perforatum ointment on perineal pain intensity following episiotomy: a randomized placebo-controlled trial. Journal of caring sciences. Vol. 7, pp. 205 (2018)

7. Diorgu, F. C. and Steen, M. P.: Nigerian Mothers' Perceived Disrespectful Care during Labour and Birth Arising from Lack of Choices for Birthing Position and Episiotomy. J Gynec Obstet. Vol. 1, pp. 015 (2017)

8. Corrêa Junior, M. D. and Passini Júnior.: Selective episiotomy: indications, techinique, and association with severe perineal lacerations. Revista Brasileira de Ginecologia e Obstetrícia. Vol. 38, pp. 301-307 (2016)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

9. Gün, İ. Doğan, B. and Özdamar, Ö.: Long-and short-term complications of episiotomy. Turkish journal of obstetrics and gynecology. Vol. 13, pp. 144. (2016)

10. Aasheim, V. Nilsen, A. B. V. Reinar, L. M. and Lukasse, M.: Perineal techniques during the second stage of labour for reducing perineal trauma. Cochrane Database of Systematic Reviews. Vol. 6, (2017)

11. Lappen, J. R. and Gossett, D. R.: Changes in episiotomy practice: evidence-based medicine in action. Expert Review of Obstetrics and Gynecology. Vol. 5, pp. 301-309 (2010)

12. Prosen, M. (2015).: The social construction of medicalization of pregnancy and childbirth.

13. Amorim, M. M. Coutinho, I. C. Melo, I. and Katz, L.: Selective episiotomy vs. implementation of a non-episiotomy protocol: a randomized clinical trial. Reproductive health. Vol. 14, pp. 5 (2017)

14. Irfah Ismail, K. McDonnell, B. and O'Coigligh, S.: Delivery through perineal body and severed external anal sphincter with an intact vaginal orifice during a precipitous labor: a case report. (2015)

15. Jiang, H. Qian, X. Carroli, G. and Garner, P.: Selective versus routine use of episiotomy for vaginal birth. Cochrane Database of Systematic Reviews. Vol. 2, (2017)

16. Goh, R. Goh, D. and Ellepola, H.: Perineal tears-A review. Australian journal of general practice. Vol. 47, pp. 35 (2018)

17. Macleod, M. Goyder, K. Howarth, L. Bahl, R. Strachan, B. and Murphy, D. J.: Morbidity experienced by women before and after operative vaginal delivery: prospective cohort study nested within a two-centre randomised controlled trial of restrictive versus routine use of episiotomy. BJOG: An International Journal of Obstetrics and Gynaecology. Vol. 120, pp. 1020-1027. (2013)

18. Berkowitz, L. R. Foust-Wright, C. E. Lickwood, C. and Eckler, K.: Approach to episiotomy. UpToDate. Last updated: Sep, Vol. 26. (2016)

19. Stedenfeldt, M. Pirhonen, J. Blix, E. Wilsgaard, T. Vonen, B. and Øian, P.: Episiotomy characteristics and risks for obstetric anal sphincter injuries: a case-control study. BJOG. Vol. 119, pp. 724–730 (2012). DOI: 10.1111/j.1471-0528.2012.03293.x.

20. Carroli, G. and Belizan, J.: Episiotomy for vaginal birth. Cochrane Database of Systematic Reviews. Vol. 3, (1999) Doi:10.1002/14651858.CD000081.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

21. Bodner-Adler, B. Kimberger, O. Käfer, A. Husslein, P. and Bodner, K.: Management of the perineum during delivery with the Kiwi omnicup: effects of mediolateral episiotomy on anal sphincter tears in nulliparous women. Gynecologic and obstetric investigation. Vol. 83(2), pp. 171-178 (2018)

22. Macleod, M. and Murphy, D. J.: Operative vaginal delivery and the use of episiotomy--a survey of practice in the United Kingdom and Ireland. Eur J Obstet Gynecol Reprod Biol. Vol. 136, pp. 178-183 (2008) Retrieved from: http://www.ncbi.nlm.nih.gov/pubmed/17459568.

23. Chang, S. R. Chen, K. H. Lin, H. H. Chao, Y. M. Y. and Lai, Y. H.: Comparison of the effects of episiotomy and no episiotomy on pain, urinary incontinence, and sexual function 3 months postpartum: a prospective follow-up study. International journal of nursing studies. Vol. 48, pp. 409-418 (2011)

24. Al-Ghammari, K. Al-Riyami, Z. Al-Moqbali, M. Al-Marjabi, F. Al-Mahrouqi, B. Al-Khatri, A. and Al-Khasawneh, E. M.: Predictors of routine episiotomy in primigravida women in Oman. Applied Nursing Research. Vol. 29, pp. 131-135 (2016)

25. Karaçam, Z. Ekmen, H. Çalişır, H. and Şeker, S.: Prevalence of episiotomy in primiparas, related conditions, and effects of episiotomy on suture materials used, perineal pain, wound healing 3 weeks postpartum, in Turkey: A prospective follow-up study. Iranian journal of nursing and midwifery research. Vol. 18, pp. 237 (2013)

26. Oraif, A.: Routine Episiotomy Practice at a Tertiary Care Center in Saudi Arabia. Open Journal of Obstetrics and Gynecology. Vol. 6, pp. 794 (2016)

27. Far A. F, Esmaeily M, Hormozi A. K, Bajestani H. S.: Maternal lived experience of primiparous mothers (from childbirth to oneyear-old): a phenomenological study. Journal of Kermanshah University of Medical Science. pp. 115-120 (2017)

28. Thompson, R. and Miller, Y. D.: Birth control: to what extent do women report being informed and involved in decisions about pregnancy and birth procedures?. BMC pregnancy and childbirth. Vol. 14, pp. 62 (2014)

29. Klein, M. C. Kaczorowski, J. Hearps, S. J. Tomkinson, J. Baradaran, N. Hall, W. A. and Brasset-Latulippe, A.: Birth technology and maternal roles in birth: knowledge and attitudes of Canadian women approaching childbirth for the first time. Journal of Obstetrics and Gynaecology Canada. Vol. 33, pp. 598-608. (2011)

30. Darvill, R. Skirton, H. and Farrand, P.: Psychological factors that impact on women's experiences of first-time motherhood: a qualitative study of the transition. Midwifery. Vol. 26, pp. 357-366 (2010)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

31. Cleary-Goldman, J. and Robinson, J. N.: The role of episiotomy in current obstetric practice. Semininars in Perinatology. Vol. 27, pp. 3-12 (2003) Retrieved from: http://www.ncbi.nlm.nih.gov/pubmed/12641298.

32. Priddis, H., Schmied, V., and Dahlen, H.: Women's experiences following severe perineal trauma: a qualitative study. BMC women's health. Vol. 14, pp. 32 (2014)

33. Andrews, V. Thakar, R. Sultan, A. H. and Jones, P. W.: Evaluation of postpartum perineal pain and dyspareunia - A prospective study. European Journal of Obstetrics and Gynecology and Reproductive Biology. Vol. 137, pp. 152-156 (2008) Retrieved from: http://www.ncbi.nlm.nih.gov/pubmed/17681663

34. Beleza, A. C. S. Ferreira, C. H. J. Driusso, P. dos Santos, C. B. and Nakano, A. M. S.: Effect of cryotherapy on relief of perineal pain after vaginal childbirth with episiotomy: a randomized and controlled clinical trial. Physiotherapy. Vol. 103, pp. 453-458 (2017)

35. Song, M. Ishii, H. Toda, M. Tomimatsu, T. Katsuyama, H. Nakai, Y. and Shimoya, K.: Maternal depression and mother-to-infant bonding: The association of delivery mode, general health and stress markers. Open Journal of Obstetrics and Gynecology. Vol. 7, pp. 155 (2017)

36. Duarte, T. B. Bonacin, M. A. Brito, L. G., Frawley, H. Dwyer, P. L. Thomas, E. and Ferreira, C. H.: Does pelvic floor muscle maximum voluntary contraction improve after vaginal pelvic organ prolapse surgery? A prospective study. Neurourology and urodynamics. Vol. 37, pp. 1744-1750 (2018)

37. Bazi, T. Takahashi, S. Ismail, S., Bø, K. Ruiz-Zapata, A. M. Duckett, J. and Kammerer-Doak, D.: Prevention of pelvic floor disorders: international urogynecological association research and development committee opinion. International urogynecology journal. Vol. 27, pp. 1785-1795 (2016)

38. Moini, A. Yari, R.E.A. and Eslami, B.: Episiotomy and third-and fourth-degree perineal tears in primiparous Iranian women. International Journal of gynecology and Obstetrics. Vol. 104, pp. 241-242 (2009). Retrieved from: www.ncbi.nlm.nih.gov/pubmed/19159878

39. Carroli, G. and Mignini. L.: Episiotomy for vaginal birth. Cochrane Database of Systematic Reviews. Vol. 1, (2009)

40. World Health Organization.: Care in normal birth: A practical guide. Geneva: World Health Organization. (1996)

41. Frankman, E. Wang, L. Bunker, C. and Lowder, J.: Episiotomy in the United States: has anything changed? American Journal of Obstetrics and Gynecology. Vol. 200, pp. 573.e1-573.e7 (2009) Retrieved from: www.ncbi.nlm.nih.gov/pubmed/19243733

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

42. Davey, M. Taylor, O. Oats, J. and Riley, M.: Births in Victoria 2005 and 2006, Victorian Perinatal Data Collection Unit, Statewide Quality Branch, Department of Human Services: Melbourne. (2008)

43. Fermandes, S. Benjamin, E. and Edwards, G. : Using evidence to reduce the rate of episiotomy in a Dubai Hospital. Evidence Based Midwifery. Vol. 7, pp. 60-63 (2009)

44. Aktaş, S. and Aydın, R.: The analysis of negative birth experiences of mothers: a qualitative study. Journal of reproductive and infant psychology. Vol. 37, pp. 176-192 (2019)

45. Meaney, S. Lutomski, J. E. O'Connor, L. O'Donoghue, K. and Greene, R. A.: Women's experience of maternal morbidity: a qualitative analysis. BMC pregnancy and childbirth. Vol. 16, pp. 184 (2016)

46. Coates, R. Ayers, S. and de Visser, R.: Women's experiences of postnatal distress: a qualitative study. BMC pregnancy and childbirth. Vol. 14, pp. 359 (2014)

47. Stankovic, B.: Women's experiences of childbirth in Serbian public healthcare institutions: a qualitative study. International journal of behavioral medicine. Vol. 24, pp. 803-814 (2017)

48. Borruto, F. and Comparetto, C.: Episiotomy: A Too Often Unnecessary and Harmful Practice. MOJ Womens Health. Vol. 2, pp. 00020 (2016)

49. Henriksen, L. Grimsrud, E. Schei, B. Lukasse, M. and Bidens Study Group.: Factors related to a negative birth experience–a mixed methods study. Midwifery. Vol. 51, pp. 33-39 (2017)

50. Oluwasola, T. A. and Bello, F. A.: Knowledge and Perception of Pregnant Women to Episiotomy in Ibadan. Journal of Basic and Clinical Reproductive Sciences. Vol. 6, (2017)

51. O`Leary, Z.: The essential guide to doing research. London: Sage. (2004)

52. Whitehead, D. and Annells, M.: Sampling data and data collection in qualitative research. In D.W.Z. Schneider, D. Elliott, G. Lobiondo-Wood, and J. Haber (Eds.) Nursing and midwifery research: Methods and appraisal for evidence-based practice (pp. 123-133). Sydney: Mosby. (2007)

53. Mukamurigo, J. Dencker, A. Ntaganira, J. and Berg, M.: The meaning of a poor childbirth experience–A qualitative phenomenological study with women in Rwanda. PloS one. Vol. 12, pp. e0189371 (2017)

54. Van Manen, M.: "Doing" Phenomenological research and writing: An introduction. Ontario, Canada: The University of Alberta. (1984)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

55. Braun, V. and Clarke, V.: Using thematic analysis in Psychology. Qualitative Research in Psychology. Vol. 3, 77-101 (2006). Retrieved from: www.mendeley.com/research/using-thematic-analysis-psychology/

56. Rubin, H. J., and Rubin, I. S. (2005). Qualitative interviewing: The art of hearing data. California: Sage.

57. Speksnijder, L. Oom, D. M. Van Bavel, J. Steegers, E. A., and Steensma, A. B.: Association of levator injury and urogynecological complaints in women after their first vaginal birth with and without mediolateral episiotomy. American journal of obstetrics and gynecology. Vol. 220, pp. 93-e1 (2019)

58. No, G. T. G.: The management of third-and fourth-degree perineal tears. (2015)

59. Galiano, J.: Influence of the episiotomy versus the perineal laceration on the normalization of the sexual relations in the postpartum (Spanish). Nure Investigacion, Vol. 43, (2009)

60. Ejegård, H. Ryding, E. L. and Sjogren, B.: Sexuality after delivery with episiotomy: a long-term follow-up. Gynecol Obstet Invest. Vol. 66, pp. 1-7 (2008) Retrieved from: http://www.ncbi.nlm.nih.gov/pubmed/18204265.

61. Wesnes, S. L. Hannestad, Y. and Rortveit, G.: Delivery parameters, neonatal parameters and incidence of urinary incontinence six months postpartum: a cohort study. Acta obstetricia et gynecologica Scandinavica, Vol. 96, pp. 1214-1222 (2017)

62. Abbas, A. M. Mohamed, A. A. Mattar, O. M. El Shamy, T., James, C. Namous, L. O. and Samy, A.: Lidocaine-prilocaine cream versus local infiltration anesthesia in pain relief during repair of perineal trauma after vaginal delivery: a systematic review and meta-analysis. The Journal of Maternal-Fetal and Neonatal Medicine, pp. 1-8 (2018)

63. Golda, M. Revathi, D. Subhashini, N. Mathew, J. and Indira, A.: Assess the effectiveness of cold application on pre procedure (AV fistula puncture) pain among hemodialysis patients in tertiary care hospital, Nellore. International Journal of Applied Research. Vol. 2, pp. 660-64 (2016)

64. Ahmad-Shirvani, M. and Ganji, J. Comparison of separate and intermittent heat and cold therapy in labour pain management. Nursing Practice Today. Vol. 3, 179-186 (2016)

65. Shepherd, E., Grivell, R. M., and Molakatalla, S..: Aspirin (single dose) for perineal pain in the early postpartum period. The Cochrane Database of Systematic Reviews, Vol. 2, (2017)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

66. Delaram, M. Dadkhah, N. K. and Jafarzadeh, L.: Comparison of indomethacin suppository and lidocaine cream on post-episiotomy pain: A randomized trial. Iranian journal of nursing and midwifery research. Vol. 20, pp. 450 (2015)

67. Harilakshmi, K. K. Pawar, M. S. Shinde, N. Kapadia, S. Naik, M. Gaikwad, P. and Khunte, C.: Assess the Effectiveness of Infrared Therapy on Episiotomy Pain and wound Healing among Postnatal Mother. International Journal of Advances in Nursing Management. Vol. 5, pp. 320-322 (2017)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Analysis of Risk Factors and Quality of Antenatal Services in Pregnant Women and Its Impact on the Incidence of Severe Preeclampsia in Padang City West Sumatera

Yanti Puspita Sari[1], Hermalinda Herman[2], Bunga Permata Wenny[3]

{yantipsari@nrs.unand.ac.id}

Maternity and pediatric Nursing Department, Faculty of Nursing, Universitas Andalas[1,2], Mental Health Nursing Department, Faculty of Nursing, Universitas Andalas [3]

Abstract. Objective: to make a map clearly about exposure to risk factors owned by pregnant women as well as the quality of antenatal health services obtained and accessed by pregnant women in relation to their respective conditions. At the end of the study will be analyzed the impact of exposure to risk factors and the quality of antenatal services on the incidence of severe preeclampsia and the condition of the baby at the end of pregnancy. Method: in order to answer this, the study was designed using a prospective cohort study design, involving 230 pregnant women whose pregnancies would be traced from being diagnosed as pregnant to childbirth, at four public health center Padang. The data obtained will be processed univariately to make the mapping of pregnant women based on independent and dependent variables, bivariate using the chi-square test to determine the relationship between variables and multivariate analysis using logistic regression to analyze factors that really have an effect on the incidence of severe preeclampsia. Results: the most dominant factor influencing the incidence of severe preeclampsia was the age of mothers at risk (> 35 years) and an increase in body weight of more than 10 kilograms. Multivariate analysis found that age at risk provides an opportunity of 15.7 times the risk of mothers experiencing severe preeclampsia, and gaining more than 10 kilograms increases the risk of 12.3 times women experiencing severe preeclampsia. Conclusion: it is necessary for health workers to provide education to mothers to prcomplication pregnancy as much as possible above the age of 35 years, and if it occurs, it must be monitored optimally and intensively. In addition, the management of maternal diet should be more focused on the management of micronutrition, not on macro nutrition.

Keywords: severe preeclampsia, complication, maternal, pregnancy

1. Introduction

Severe preeclampsia is a pregnancy complication that is very threatening to the life of the mother and her baby. It is characterized by an increase in blood pressure accompanied by proteinuria, usually appearing in the final trimester of pregnancy. The most serious further complication of severe preeclampsia is the occurrence of eclampsia (seizures) that lead to

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

coma, the occurrence of HELLP (hemolysis, elevated liver enzyme, and low platelet) syndrome which is a condition where red blood cell destruction is followed by failure of liver function and impaired blood clotting. Severe preeclampsia is responsible for the increased incidence of placental abruption, fetal growth disturbance, premature birth and stillbirth [1].

Several studies that have been conducted have found that maternal health condition before pregnancy is one of the contributing factors to the high incidence of preeclampsia found that women with age above 34 years, women with multiple pregnancies have a higher risk for pregnancy hypertension and preeclampsia severe [2]. Another research also found that getting older a mother during pregnancy (> 35 years) would increase the risk of suffering from severe preeclampsia, compared to other risk groups (mothers aged <18 years) [3]. In a research review report on African women, Nikimuli et al. (2014) also found that the incidence of preeclampsia prevalence was mostly found in mothers with low economic status, poor education and poor pregnancy health services, poor diets, unhealthy lifestyles, stress and history of suffering from hypertension before pregnancy. This shows that severe preeclampsia is a pregnancy complication that influenced by multifactorial conditions.

Prevalence of preeclampsia in various developing countries shows that the figure is still high, is a major cause of increasing rates of morbidity and maternal mortality in the world, especially in developing countries. One of them is Indonesia. The results of the maternal mortality rate (MMR) within a period of 15 years showed that Indonesia succeeded in suppressing the MMR significantly, which in 1991, the MMR in Indonesia reached 390 / 100,000 live births, and in 2007 it could be reduced down to 228 / 100,000 live births. But unfortunately, in 2012, there was an increase in MMR to 359 / 100,000 live births. This is very far from the 2015 MDGs target, which targets MMR to only 102 / 100,000 live births.

Based on the 2014 Ministry Of Health Report, it is known that the highest causes of maternal mortality in Indonesia are bleeding and severe preeclampsia (severe preeclampsia). Bleeding is still the most common cause, but the number has decreased in the last four years. In 2010, the bleeding rate reached 35.1% and fell to 30.5% in 2013. This is contrary to the incidence of severe preeclampsia, which actually shows an increase every in the last four years, while in 2010, only 21.5% rose to 27.1% in 2013.

The trend of causes of maternal death in west Sumatera actually shows that severe preeclampsia and eclampsia are the highest causes of death, reaching 37.5% [4]. If you look at the area of origin of mothers with severe preeclampsia and eclampsia in this province, the city of Padang is the largest contributor, followed by pasaman regency, south solok regency and Padang Pariaman. Based on the recap of the patient's medical record at rsup dr. M. Djamil Padang is known that there has been an increase in the number of cases of preeclampsia from year to year. In 2010 there were 111 cases, in 2011 there were 138 cases in 2012 there were 160 cases, and in 2013 there were 216 cases, of which nine people died (M. Djamil Padang hospital medical record). This research is the first study in west Sumatera that will be able to make a clear map of maternal conditions before pregnancy and during pregnancy. It also is able to describe a clearly capture the conditions of health services obtained and can be accessed by pregnant women and families and assess their impact on the likelihood of severe preeclampsia complications and the degree the severity of preeclampsia that affects maternal and neonatal/fetal health conditions at the end of pregnancy. This research will be the basic data for health workers in providing targeted, effective, and efficient services to cut the continuation of the chain of more severe complications.

This research is expected to answer better the quality of maternal antenatal services with various risk factor groups that contribute to the increasing number of severe preeclampsia complications each year in West Sumatera. Therefore, the results of this study are expected to

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

be one of the sources of reference for the government in efforts to improve the quality of antenatal services.

2. Method

Design

This study was an observational study with a prospective cohort study approach (Lapau, 2013). In this study, pregnant women who were used as research respondents will be monitored for the condition of their pregnancy from when they were discovered to be pregnant until the termination of the pregnancy occurred. During this time, the mother's exposure to risk factors and the quality of antenatal care services that are obtained and accessed by mothers and family will be assessed. Furthermore, at the final stage of pregnancy will be assessed whether there is a severe preeclampsia and the condition of the baby being born is evaluated

Population and samples

The population in this study was pregnant women in the city of Padang, which were spread out in 4 public health center working areas. Samples were taken using a quota sampling technique. The number of samples taken is based on the Lameshow formula: 219 people.

Sample criteria:

A. Inclusion criteria;
1) pregnant women found since the first trimester of pregnancy
2) willing to be a research sample
3) do not move to domicile during the study
B. Exclusion criteria;
1) the mother miscarries in the early trimester of pregnancy

Data analysis

1. Univariate analysis

Univariate analysis was performed to obtain images regarding the frequency distribution of study samples based on variable characteristics.

2. Bivariate analysis

Bivariate analysis using the chi-square test to see a significant relationship between independent and dependent variables, the significance value is determined if the value of $p < 0.05$.

3. Multivariate analysis

Multivariate analysis is used to analyze the effect of independent variables on the dependent variable. The test used in this multivariate analysis is the logistic regression test.

3. Result

Table 1. Uji bivariate : Factors Related To Severe Preeclampsia on women in West Sumatera

Variabel	**Severe preeclampsia**				**Total**		***p value***
	No		Yes		F	%	
	F	%	F	%			
Education level							
Low	19	9.36	2	12.5	21	9.58	0.636

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Midle	101	49.75	6	37.5	107	48.86	
High	83	40.89	8	50	91	41.55	
Age							
< 20 years old	3	1.48	0	0	3	1.36	0.00
20-35 years old	176	86.69	8	50	184	84.02	
>35years old	24	11.82	8	50	32	14.61	
Parity							
Primipara	88	43.35	7	43.75	95	48.38	0.00
2-3 childrens	104	51.23	4	25	108	49.31	
>3 childrens	11	5.41	5	31.25	16	7.3	
Age of gestations							
Aterm	196	96.55	16	100	212	96.8	0.583
Preterm	7	3.4	0	0	7	3.2	
Increase in weight during pregnancy							
4-10 kg	190	93.59	10	62.5	200	91.32	0.01
>10 kg	13	6.4	6	37.5	19	8.67	
Pregnancy complications							
Nothing	159	78.32	11	68.7	170	77.63	0.00
Hypotension	33	16.26	0	0	33	15.07	
Hypertension	4	1.97	4	25	8	3.65	
Bleeding	7	3.45	1	6.25	8	3.65	
Antenatal quality							
Good	184	90.64	14	87.5	198	90.41	0.456
Poor	19	9.36	2	12.5	21	9.59	

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Multivariat analysis

								95% CI for exp(b)	
		B	S.e.	Wald	Df	Sig.	Exp(b)	Lower	Upper
Step 1a	Age	2.609	.850	9.422	1	.002	13.591	2.568	71.918
	Parity	.048	.598	.007	1	.936	1.049	.325	3.385
	Increase of weight	2.568	.747	11.831	1	.001	13.036	3.018	56.312
	Pregnancy complication	.419	.247	2.867	1	.090	1.520	.936	2.469
	Constant	-11.921	2.224	28.741	1	.000	.000		
Step 2a	Age	2.652	.666	15.856	1	.000	14.186	3.845	52.341
	Increase of weight	2.552	.720	12.569	1	.000	12.834	3.131	52.615
	-pergnancy complication	.419	.248	2.861	1	.091	1.520	.936	2.469
	Constant	-11.917	2.222	28.753	1	.000	.000		
Step 3a	Age	2.505	.650	14.869	1	.000	12.246	3.428	43.755
	Increase of weight	2.755	.709	15.085	1	.000	15.720	3.915	63.127
	Constant	-11.578	2.184	28.112	1	.000	.000		

A. Variable(s) entered on step 1: age, parity, increase of weight, pregnancy complication

3.1 Multivariate final modeling

If a woman is pregnant at <20 years old or> 35 years old, the value is 1 and if she has also increased body weight more than 10 kg, then the value is 1. Entered into the modeling as follows:

Predicted severe preeclampsia = exp (-11,578 + (2,505 * 1) + (2,755 * 1) / 1 + exp (-11,578 + (2,505 * 1) + (2,755 * 1)

Predicted severe preeclampsia = 6.313 / 7.313 = 0.864

Then, 0.864> 0.5, meaning that the mother has a value of 1, meaning that she has severe preeclampsia. If in reality, the mother does not experience a severe preeclampsia, then the mother is said to have left the model, which is called residual, where the value is 1 - 0.864 = 0.136.

Based on the above modeling, it can also be concluded that the maternal age variable (at risk: <20 years or> 35 years) during pregnancy provides a 12.4 times higher chance for women to experience preeclampsia severe. The variable weight gain of more than 10 kilograms during pregnancy provides a 15.7 times higher chance for women to experience severe preeclampsia.

4. Discussion

Description of predictor factors of severe preeclampsia complications in West Sumatera

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Based on the results of statistical data processing, it is known that the maternal age factors, when pregnant, weight gain of more than 10 kg, complications suffered during pregnancy, and parity have a positive relationship with the incidence of preeclampsia. Based on the results of the study, it was found that 14.6% of respondents were pregnant when they were over 35 years old, and 1.4% were pregnant at an early age of 20 years, of which 50% of them experienced the severe preeclampsia. This age is an age at risk for pregnancy and childbirth, according to the theory that says that getting pregnant at a fairly old age (> 35 years) increases the likelihood of complications occurring during pregnancy and childbirth. This is in line with research conducted by Iacobelli, Bonsante & Robillard (2017) [5], who found that old age is a predictor factor for severe preeclampsia, in addition to primigravida, obesity, chronic hypertension, and diabetes. Cordero-franco, Mar, Garc, & Guzm (2018) [6] and Li et al., (2016)[7] also found the same thing, where age <20 years and> 35 years during pregnancy will increase the risk of developing severe preeclampsia.

There are not many theories that discuss clearly, how old age can cause a high risk for experiencing preeclampsia. However, it is believed, structural and functional changes of peripheral blood vessels in the uterus can have an impact on placental disorders, which ultimately lead to severe preeclampsia (severe preeclampsia) [8] [9].

There have been no microscopic studies conducted to monitor the condition of the uterus in old mothers, but one laboratory study using mice tried to make an analogy by conducting experiments on pregnant female mice. Patel, Moffatt, Mouroura, Demaison, & tribe, (2017) [10] found in their research that there was a change in the response of the uterus of old mice to an increase in the hormone oxytocin and estrogen during pregnancy, which ultimately disrupted the process of implantation and placental development. This can be analogous if it occurs in humans.

Another predictor factor found in research conducted by researchers is complications during pregnancy with a percentage reaching 22.5%, where 10.2% of those who have problems during pregnancy, complicationually experience severe preeclampsia at the end of pregnancy [11]. The results of this study are in line with other studies, where Liu et al., (2019) [12], also found that high blood pressure that occurs during the onset of pregnancy can be a predictor of the occurrence of preeclampsia in pregnant women.

Obesity is also another factor that is often associated with an increased incidence of preeclampsia in the mother. Although research conducted by researchers, not including obesity, is one of the variables, but this study assesses weight gain during pregnancy. Significant results that are far different from the existing theories is that weight gain of more than 10 kg is a predictor factor for severe preeclampsia. Where from 37.5% of women whose weight increase was more than 10 kg during pregnancy, they experienced severe preeclampsia. It was contrasted to the theory that still tolerates an increase in weight for pregnant women between the range of 3 kg to 16.5 kg.

Several previous studies have found that fulfilling nutrition in pregnant women does not focus on macro nutrition, including a significant increase in carbohydrate consumption, but rather on the completeness of micronutrients, which should be an important indicator. Several studies have found that the content of protein, antioxidants, vitamins C, and d and zinc significantly influence the incidence of preeclampsia [13][14].

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The quality of antenatal care does not have a significant effect on the incidence of preeclampsia. This is understood because indeed, severe preeclampsia does not occur due to lack of monitoring, but because of the functional microscopic changes of the body.

Prevalence of severe preeclampsia

Severe preeclampsia is a major case that contributes to increased morbidity and maternal mortality in developing countries. The prevalence of severe preeclampsia varies in each country. In this study, it was found that the prevalence of the severe preeclampsia complication was 7.3%. This figure is almost equivalent to the prevalence of severe preeclampsia in the world, which is in the range of 2-10% (li et al., 2016). This finding is high because, in developed countries, the prevalence is only around 2-5%. Indonesia is still quite high compared to other countries.

The high number of severe preeclampsia complications can have a negative impact on the health of the maternal and the babies they deliver [15]. Prevalence of preeclampsia in various developing countries shows that the figure is still high, is a major cause of increasing rates of morbidity and maternal mortality in the world, especially in developing countries. One of them is Indonesia. The results of the maternal mortality rate (MMR) within a period of 15 years showed that Indonesia succeeded in suppressing the MMR significantly, In 1991, the MMR in Indonesia reached 390 / 100,000 live births, and in 2007 it could be reduced down to 228 / 100,000 live births. But unfortunately, in 2012, there was an increase in MMR to 359 / 100,000 live births. This is very far from the 2015 MDGs target, which targets MMR to only 102 / 100,000 live births (Indonesia health profile 2014, ministry of health republic of Indonesia Infodatin, 2014).

Based on the 2014 ministry of health report, it is known that the highest causes of maternal mortality in Indonesia are bleeding and severe preeclampsia (severe preeclampsia). Bleeding is still the most common cause, but the number has decreased in the last four years, in 2010, the bleeding rate reached 35.1% and fell to 30.5% in 2013. This is contrary to the incidence of severe preeclampsia, which actually shows an increase every in the last four years, in 2010 only 21.5% rose to 27.1% in 2013 (Indonesia health profile 2014, ministry of health republic of Indonesia Infodatin, 2014).

The trend of causes of maternal death in west Sumatera actually shows that severe preeclampsia and eclampsia are the highest causes of death, reaching 37.5% (Veronika, y, et al. 2015). If you look at the area of origin of mothers with severe preeclampsia and eclampsia in this province, the city of Padang is the largest contributor, followed by Pasaman regency, south Solok regency, and Padang Pariaman. Based on the recap of the patient's medical record at RSUP dr. M.Djamil Padang is known that there has been an increase in the number of cases of preeclampsia from year to year. In 2010 there were 111 cases; in 2011, there were 138 cases; in 2012, there were 160 cases, and in 2013 there were 216 cases, of which nine people died.

Severe Preeclampsia until now is still a pregnancy complication whose exact cause is unknown. Therefore, pregnant women who have various risk factors (maternal high risk) need to get a complete antenatal care, so that the possibility of suffering from dangerous complications can be prcomplicationed, and if it occurs, it can be treated earlier so as to reduce morbidity and mortality rates for both mother and fetus.

The most significant factors of dominant affecting the incidences of severe preeclampsia

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Based on the results of multivariate analysis, it is known that maternal age, when pregnant and goodness of body weight, more than 10 kg are the main predictor factors and most significantly influence the incidence of preeclampsia. Based on statistical test results it is known that the final modeling of the Nagelkerle R square test is 0.313, meaning that the ability of independent variables (age, parity, increase in weight gain during pregnancy, pregnancy complications) to explain the dependent variable (severe preeclampsia incidence) is 31.3% and there are 69,7% other variables outside the model that explain the dependent variable. In addition, Hosmer test and Lemeshow test, it is known that the significance value of 0.584 means that the model can be accepted, and hypothesis testing can be done because there is no significant difference between the model and its observational value.

The number of respondents who did not experience severe preeclampsia was 203 (201 + 2) people, where respondents who really did not experience severe preeclampsia were 201 people, while those who should not have experienced severe preeclampsia were in fact experienced two people. Meanwhile, those who experienced severe severe preeclampsiawere 16 people (13 + 3), which truly experienced severe preeclampsia were 13 people, and three people who should not have experienced preeclampsia had experienced it. So the overall percentage becomes (201 + 13) / 219 = 93.2%, meaning that the accuracy of the research model is 93.2%. The high enough number of this test shows that the results of this study can be trusted.

Seen from the odd ratio found that the maternal age variable (at risk: <20 years or> 35 years) during pregnancy provides a 12.4 times higher chance for women experiencing severe preeclampsia. The variable weight gain of more than 10 kilograms during pregnancy provides a 15.7 times higher chance for women to experience severe preeclampsia.

Previous studies have found that old age is a risk factor for severe preeclampsia, but on the other hand, it has also been found that these factors are not interconnected. However, pathophysiologically, old age is associated with the occurrence of glucose intolerance, which allows a decrease in sensitivity to insulin. Meanwhile, insulin retention plays an important role in increasing blood pressure in pregnant women, which can lead to the occurrence of preeclampsia.

In addition, these two factors (insulin resistance and glucose intolerance) also influence the occurrence of gestational diabetes, although until now, the mechanism of both of them cannot be explained clearly. In addition, levels of fatty acids in pregnant women with obesity can also increase the incidence of insulin resistance which in turn makes the body make the compensation process by increasing significant amounts of insulin (hyperinsulinemia) so that complicationually vasoconstriction of blood vessels and hypertension in pregnancy [16].

Other studies have found that there is no single factor in the incidence of severe preeclampsia, but occurs due to a combination of factors. Cordero-franco et al., 2018) found that in combination with nullipara, the increase in diastole Blood pressure exceeds 80 mmHg, and obesity increases 9.4 times the risk of someone suffering from severe preeclampsia.

Until the last few years, preeclampsia has been a very complex complication, with a variety of syndromes and is usually expressed in 2 pathways, with differences in pathophysiology and clinical symptoms [17]. If seen from the pathophysiology of the disease, severe preeclampsia is associated with the occurrence of stress in the syncytiotrophoblast

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

stress network, which can be detected at the onset of the severe preeclampsia [18]. Whereas, if seen from the appearance of clinical symptoms, insulin resistance, impaired coagulation function, and hypercholesterolemia will be found [5].

Various explanations in the pathophysiology above, explaining that old age accompanied by excessive increase in body weight during pregnancy, is indeed an important predictor of complications in every incidence of preeclampsia.

5. Conclusion

It is necessary for health workers to provide education to mothers to prcomplication pregnancy as much as possible above the age of 35 years, and if it occurs, it must be monitored optimally and intensively. In addition, the management of maternal diet should be more focused on the management of micronutrition, not on macro nutrition.

References

[1] A. Nakimuli, A. M. Elliott, P. Kaleebu, A. Moffett, and F. Mirembe, "Hypertension persisting after pre-eclampsia: A prospective cohort study at Mulago Hospital, Uganda," *PLoS One*, vol. 8, no. 12, pp. 1–8, 2013.

[2] A. S. Nyamtema, A. B. Jong, D. P. Urassa, J. P. Hagen, and J. van Roosmalen, "The quality of antenatal care in rural Tanzania: what is behind the number of visits?," *BMC Pregnancy Childbirth*, vol. 12, no. December 2010, 2012.

[3] M. Jabeen, M. Y. Yakoob, A. Imdad, and Z. A. Bhutta, "Impact of interventions to prevent and manage preeclampsia and eclampsia on stillbirths," *BMC Public Health*, vol. 11, no. SUPPL. 3, p. S6, 2011.

[4] H. M. Database, "Pre-eclampsia," 2005.

[5] S. Iacobelli, F. Bonsante, and P. Robillard, "Comparison of risk factors and perinatal outcomes in early onset and late onset preeclampsia : A cohort based study in Reunion Island," *J. Reprod. Immunol.*, vol. 123, no. June, pp. 12–16, 2017.

[6] H. F. Cordero-franco, A. Mar, A. Garc, and J. Guzm, "Discriminatory Accuracy of Preeclampsia Risk Factors in Primary Care," vol. 49, pp. 240–247, 2018.

[7] X. Li *et al.*, "Pregnancy Hypertension : An International Journal of Women ' s Cardiovascular Health Similarities and differences between the risk factors for gestational hypertension and preeclampsia : A population based cohort study in south China," *Pregnancy Hypertens. An Int. J. Women's Cardiovasc. Heal.*, vol. 6, no. 1, pp. 66–71, 2016.

[8] H. Novianti and F. Keperawatan, "PENGARUH USIA DAN PARITAS TERHADAP KEJADIAN PRE EKLAMPSIA DI RSUD SIDOARJO Abstract : The Influence Of Age And Parity Of Events Pre Eklampsia In Sidoarjo General Hospital . One of the complications in pregnancy that could have an impact on maternal neonat," pp. 25–31.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[9] L. Jennings, A. S. Yebadokpo, J. Affo, and M. Agbogbe, "Antenatal counseling in maternal and newborn care: Use of job aids to improve health worker performance and maternal understanding in Benin," *BMC Pregnancy Childbirth*, vol. 10, pp. 1–13, 2010.

[10] R. Patel, J. D. Moffatt, E. Mourmoura, L. Demaison, and R. M. Tribe, "Effect of reproductive ageing on pregnant mouse uterus and cervix," vol. 6, pp. 2065–2084, 2017.

[11] J. Hollowell, L. Oakley, J. J. Kurinczuk, P. Brocklehurst, and R. Gray, "The effectiveness of antenatal care programmes to reduce infant mortality and preterm birth in socially disadvantaged and vulnerable women in high-income countries: A systematic review," *BMC Pregnancy Childbirth*, vol. 11, 2011.

[12] Y. Liu, N. Li, Z. Li, L. Zhang, H. Li, and Y. Zhang, "Impact of gestational hypertension and preeclampsia on fetal gender : A large prospective cohort study in China," *Pregnancy Hypertens.*, vol. 18, no. October, pp. 132–136, 2019.

[13] S. Fogacci *et al.*, "Vitamin D supplementation and incident preeclampsia : A systematic review and meta-analysis of randomized clinical trials," *Clin. Nutr.*, no. xxxx, 2019.

[14] A. Taravati and F. Tohidi, "Taiwanese Journal of Obstetrics & Gynecology Comprehensive analysis of oxidative stress markers and antioxidants status in preeclampsia," *Taiwan. J. Obstet. Gynecol.*, vol. 57, no. 6, pp. 779–790, 2018.

[15] V. L. Bilano, E. Ota, T. Ganchimeg, R. Mori, and J. P. Souza, "Risk factors of pre-eclampsia/eclampsia and its adverse outcomes in low- and middle-income countries: A WHO secondary analysis," *PLoS One*, vol. 9, no. 3, pp. 1–10, 2014.

[16] A. Jayapalan, L. P. Wong, and N. Aghamohammadi, "Women ' s Studies International Forum A qualitative study to explore understanding and perception of sexual abuse among undergraduate students of di ff erent ethnicities," *Womens. Stud. Int. Forum*, vol. 69, no. July 2017, pp. 26–32, 2018.

[17] A. B. Pembe, A. Carlstedt, D. P. Urassa, G. Lindmark, L. Nyström, and E. Darj, "Quality of antenatal care in rural Tanzania: Counselling on pregnancy danger signs," *BMC Pregnancy Childbirth*, vol. 10, 2010.

[18] K. Gross, J. A. Schellenberg, F. Kessy, C. Pfeiffer, and B. Obrist, "Antenatal care in practice: An exploratory study in antenatal care clinics in the Kilombero Valley, south-eastern Tanzania," *BMC Pregnancy Childbirth*, vol. 11, pp. 1–11, 2011.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

A Qualitative Study About Schizophrenia Caregiver's Experiences and Needs

Dewi Eka Putri[1], Feri Fernandes[2], Rika Sarfika[3]
{dewiekaputri@nrs.unand.ac.id[1],ferifernandes@nrs.unand.ac.id[2],rikasarfika@nrs.unand.ac.id[3]}

Nursing Faculty, Andalas University, LimauManis Padang[1,2,3]

Abstract. Caregivers in schizophrenia patients have a high burden of care so they are unable to care optimally and have an impact on the high relapse. The study aimed to explore the experiences and needs of caregivers in caring for patients. This was qualitative research used a phenomenology approach. Participants were 11 caregivers who directly cared for schizophrenic. Purposive sampling technique was applied. The data collection method used in-depth interviews. The results gained four themes: caring experiences, perceived burdens, used coping mechanisms and caregivers' needs in caring for patients. Caregivers' experiences in caring for patients often encountered problems including insufficient knowledge, financial and support that created physical, emotional/psychological, and social burdens. Adaptive and maladaptive coping mechanisms were used. Caregivers' needs in caring for their family members affected by schizophrenia including knowledge, support and health services. Caring and support from people around them will reduce the risk of disruption of well-being and can improve the welfare of patients with schizophrenia. It can be concluded that caregivers' needs were some knowledge on how to care for patients and their treatment, supports and health services.

Keywords: caregivers, relapse, needs, schizophrenia

1 Introduction

Schizophrenia is one of the most common medical diagnoses of severe mental disorders. According to WHO in 2011, the number of people with schizophrenia has increased year to year, with more than 24 million people worldwide experiencing severe mental disorders. Meanwhile, in 2014 schizophrenia affects more than 21 million people worldwide[1]. The prevalence of schizophrenia in Indonesia always increasing every year[2]. The prevalence of schizophrenics in Indonesia around 0.3-1% and usually occurs at the age of 18-45 years, but in some cases, schizophrenia also affects those who are only 11-12 years old. Schizophrenia also occupied 90% of patients in mental hospitals throughout Indonesia [3]. Schizophrenia is a group of psychotic reactions that affect various areas of individual function, including the functions of thinking and communicating, receiving and interpreting reality, responding and showing emotions, and behaving rationally [4]. Schizophrenia also is known by a person's inability to recognize reality or have a bad insight [5].

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

One of the problems in treating schizophrenia is recurrence. Approximately 60-70% of patients who do not receive medication experience recurrence in one year after the diagnosis of schizophrenia [6]. The frequency of recurrence in one year adds problems in the treatment of schizophrenia. Jalil (2006) estimates that the recurrence rate of mental disorders is 25% in the first year, 70% in the second year and even 100% in the third year. This condition shows that with increasing time, the recurrence rate of schizophrenic patients becomes higher. Recurrence often occurs because of the disobedience of mental disorders patients in therapeutic regimens, and it has become a global problem throughout the world. To overcome the problem of non-compliance, individuals who care for their family members who have schizophrenia are required. People who pay attention, nurse, and care for people who experience health problems are called a caregiver.

Caregivers provide considerable support for family members who have affected by illness, even when they experience and feel a significant burden [7]. Caring for family members with mental disorders is a burden for the family. Unnatural patients' behavior, the views from the surrounding communities, and the length of time to take medication are some of the unique experiences that are encountered by caregivers. The most severe impact felt by a caregiver whose family members affected by schizophrenia is the emergence of bad stigma and public perception toward the family, so that they are isolated from the community. Therefore, caregivers should get more attention to be able to treat patients with schizophrenia properly. Caregivers' needs must be fulfilled for the quality of life remains sufficient so that their support for patients will be better as well, in the end, the patients' recurrence can be minimized.

2 Method

This research design was qualitative research with a phenomenological approach. Data collection used in-depth interviews. Participants were caregivers who directly cared patients with schizophrenia. The number of participants were 11 person who were selected by using purposive sampling technique. Interviews lasted between 30–45 minutes and were tape-recorded and transcribed verbatim. The interview questionswere derived from the aims of the study and were open-ended. An interview guide was used with a set of questionsand prompts to reduce any researcher bias [8]. Data analysis used the Collaizi method approach.

3 Result

Characteristics of participants

Participants in this study were nine females and two males. All participants were Muslims, six participants were patients' sisters, four participants were patients' parents and one participant was a patients' daughter. The participants were seven adults and four elderly. The education level of participants were one had elementary, four had a junior high school, four had senior high school and one had Bachelor’s degree. The participants had cared for patients more than five years were five participants, for 1-5 years were four participants and for less than one year were two participants. The marital status of participants were eight married and three widowed. The

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

participants' occupation were four housewives, two retires, two private employees, two entrepreneurs and one civil servant.

The researchers used the Collaizi Method for processing data from in-depth interviews with participants. The analysis process began with the decision of keywords, followed by the decision of categories, sub-themes and finally the arrangement of themes. Based on the results of the conducted research and in-depth interviews, the researchers got eleven participants who were determined after all the data undergoing saturation. As for the analysis of the in-depth interview results which were supported by field notes, the researchers found four themes as the results of the research. The found themes had answered specific purposes through in-depth interviews with participants. The following was a detailed explanation of the four themes which were obtained from the in-depth interview results:

Theme 1: Caring Experiences

The caregivers' experiences in caring for patients with schizophrenia varied greatly. This might be affected by the duration of care, the severity of patients' illness, caregivers' knowledge, and the provided support by other family members[9]. In this research, caregivers' experiences were grouped into several sub-themes such as inadequate knowledge, support, and fund/financial.

The inadequate of knowledge about how to take care was stated by some participants. The second participant state that she did not know how to handle the patient *"... we are villagers, requested to seek traditional treatments, there were already many shamans but they were ineffective, instead, it becomes worse"* (P2). Based on participants' experience, they received aid for a few times as expressed by the sixth participant *"so this drug, sometimes she asks, sometimes she forgets that we who gave her his sister is like that too, need to be reminded"* (P6). Other participants said there were financial matters during treatment and less income was also sighed such as: *" for 1 year, we have spent 15 million for therapy with shamans"* (P6).

Theme 2 : Perceived Burdens.

The burdens were felt by caregivers in treating schizophrenic patients who were specifically expressed by all participants. These evoked a special theme that was discussed in the results of this research. Participants revealed that there were burdens related to patients' conditions and experiences during caring for the patients. As for the sub-themes were the physical burden, emotional/psychological burden, and social burden.

This research found some physical burdens that were felt by all participants such as expressions about exhaustion, falling sick and even fainting, sleep disorders, and feeling overwhelmed by family members who affected by schizophrenia. Participants stated: *" However there are problems, ... Sometimes feel tired, feel exhausted"*(P3). *"The first time at that house , I had fainted, right?"*(P2).

As for the category from sub-theme of psychological/emotional burdens which were found in this research including a feeling of resentment, anger, and irritation like the expression of the following ninth participant *"... Yeah, I'm annoyed a lot, but since Mom "* (P9). *"So yes, even though it is wet but he/she doesn't want to be changed. That's one thing that often makes me upset. Yes, so there is a burden of feeling, like that "* (P7).

Statements regarding social burdens were expressed by the comments that participants' activities became limited, social relations were hindered and an immense patient dependency on

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

caregivers. These statements were confessed by the participants as follows: *"... That's right Miss, social relations being hampered by it... Sometimes it is fortunate if some friends want to come"* (P6).

Theme 3: Coping Mechanisms Adopted by Caregivers.

Coping mechanisms used by the caregivers in caring patients with schizophrenia was a theme that was also found in this research. The sub-themes were adaptive and maladaptive coping mechanismss. Some participants applied adaptive coping mechanism in dealing with patients during their caring. The following statement depicted the caregivers' intent *"if she is often daydreaming, surprised her quickly, instructs her to work, wash dishes, we still accompany while cooking, not left her be...."* (P1). Besides the adaptive coping mechanisms, some of the participants displayed maladaptive mechanisms. This can be noticed from the participants' statements, such as *"... sometimes it is understandable, sometimes it isn't, emotionally, makes me tired, yelled and screamed, I also sometimes like that, but still know the limitation…"* (P10).

Theme 4: Caregivers Needs.

In this research, the researchers also found a theme about caregivers' needs during they care for family members who affected by schizophrenia. On perceived needs, we also found sub-themes such as knowledge, support and health services.

Caregivers' knowledge of caring for family members who affected by schizophrenia was very important. Therefore, a sub-theme was found in the form of how to nurse and treat the patients. Participants stated that: *"Yeah like that, ... there is information that relates to my mother's condition, how to taking care of her, have to learn ..."* (P7). *"Hopefully, someone can explain it, so I can do..."* (P11).

The role and support of other family members and the surrounding community might be able to relieve caregivers. This was expressed by all participants, as conveyed by the tenth and seventh participants who stated: *"Yes, it is the support of other families ... then the expenses ..."* (P10). *".... For the obstacle, thank God ..., because our siblings usually compromise about the financial problem. Assigned money each month "*(P7).

As for the health services that were disclosed including the attitudes of health workers, provided services and supporting health insurance. The following are the expressions of the participants which showed the importance of the attitudes of health workers for participants: *" I hope health workers be patience, do not judge who the person is, prioritize work loyalty, so I personally since I got BPJS (Social Security Administration Body) I was never disappointed."* (P5).

4 Discussion

Theme 1:The experiences of caregivers in caring schizophrenic patients included inadequate knowledge, acquired support, and financial difficulties. The problem of inadequate knowledge about how to care for schizophrenic patients. The lack of caregivers' knowledge in how

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

to care for is the experience that is found among the caregivers as the statement "... *if he relapses, let it be until he is a bit calm ... just taken to an alternative/traditional medication or shamans ...*" This statement shows the caregiver's lack of knowledge in caring for family members who are affected by disorders especially schizophrenia. The worsening of the patients' condition will show signs of recurrence of schizophrenic patients. Therefore, the government issued a revised ministerial regulation on mental health services, namely the Regulation of the Minister of Health of the Republic of Indonesia Number 43, 2016, which declares that health services for severe mental disorders are preventing recurrence and the practices of restrain/seclusion.

The inadequate caregivers' knowledge in this research, similar to the results of[10] study in Texas, United States, stated that caregivers had low knowledge in the care of schizophrenic patients. The low level of caregivers' knowledge is due to the low level of their education. In this research, 36.4% of caregivers have low to moderate education, namely junior and senior high school level. The results of this research are strengthened by[11] study, stating that caregivers who care for schizophrenic patients, on average, have low knowledge.

Theme 2: The burdens of caregivers who treat schizophrenic patients are the impact of problems that are experienced by the caregivers in caring for patients, and this can be seen from their experiences during the treatments. Physical, emotional/psychological, and social burdens are the major burdens that are found in this research. Some recent studies show that the burden experienced by caregivers while treating schizophrenic patients is quite high. Research by [12] and [11] stated that caregivers' burdens were between the middle to a high level.

High burden, on average, were felt by female caregivers who in fact are patients' mothers [14]. The high burdens felt by a mother or sister are related to their central function and role in caring for family members; they must do domestic work; as caregivers and foster of their children or siblings; and participate in socialization in the community and the surrounding environment [15] 2010). A single caregiver will feel higher burdens because the caregiver had to take care of the patient without the help of other family members or people.

Research by[16]found that caregivers who spend more time with patients have higher burdens than caregivers who spend less time with patients. This is also stated in the research of[17]that caregivers who have longer times with patients will experience higher burdens. In this research was known that 5 caregivers have treated patients for more than 5 years so they are at risk of experiencing high burdens. The burdens can be the fulfillment of needs such as rest and sleep which are basic human needs[18]. When a caregiver has a lack of rest and sleep, then the basis of a caregiver's needs as a human are not met and will ultimately affect the caregiver's health.

Other burdens that are found on caregivers are emotional/psychological burdens. This burden will be felt in the early period of psychotic events or the initial period of caregivers in treating schizophrenic patients. When symptoms of schizophrenia first appear in patients, some caregivers express a response of surprised, sad, and stressed. Research by [19] stated that caregivers who treat schizophrenic patients experience high stress in dealing with the emerged symptoms.

In addition, caregivers also revealed the social burden that should also be shouldered by caregivers in nursing schizophrenia patients. This is related to the stigma that exists in the society regarding schizophrenia which causes caregivers to feel ashamed of having a family member with schizophrenia. Stigma can also reduce support from others, so caregivers have difficulty in getting

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

support systems. Family support is an attitude, action, and acceptance from families toward their members because family members are an inseparable part of the family environment [20].

Theme 3: A coping mechanism is a way that individuals do in solving problems, adjusting to changes, and responding to threatening situations [21]inviduals can cope with stress and anxiety by using coping sources from the environment either socially, intrapersonally or interpersonally. These sources are economic assets, problem-solving skills, social support, and positive cultural beliefs[22]. But in this research caregivers also showed maladaptive coping mechanisms. Maladaptive coping mechanisms are mechanisms that restrain the function of integration, reduce autonomy and tend to dominate the environment[4]. The categories are in the form of overeating/not eating at all, overwork, evasive and destructive activities (preventing conflict by circumventing a solution). This is expressed by caregivers like *" sometimes a rude word is said to him, but after that, I thought that he is sick …."* So is the following expression *" because of this I too will get a stroke and all kinds of things, I'm not strong enough to take care of him again, it makes me stress and so on so forth...."* All these expressions show family indifference to patients' condition and impact on the subsequent care of patients.

Theme 4: Caregivers' needs in caring for their family members who affected by schizophrenia including knowledge, support and health services. Caring and support from people around them will reduce the risk of disruption of their well-being and be able to improve the welfare of patients with mental disorders[23]. This can be perceived by the expression of caregiver *"... there are other family members who help to finance, so it is quite helpful "* and according to the results of another research, it is known that caregivers often express the need for support and they complain that they do not have the ability to lessen the perceived burden [24]. These conditions are also found in this research based on participants' expressions.

The need for knowledge includes obtaining information about early signs of mental disorders and recurrence, understanding of the effects of drugs, and ways to cope with peculiar behavior and aggressive behavior of patients.[25]. The conditions above are found from the caregiver statement *"Yeah like that, there is information that relates to my mother's condition, how to nurse her?"* And another expression *"Yes we need related information if there are family problems in treating the patient. "* Caregivers' statements and expressions prove that the need for knowledge or information about patients' management is urgently needed. This knowledge is useful for the sustainability of home care in order to be able to treat and reduce the perceived burden so that recurrence does not occur or it can be lessened.

Another need that is necessary for caregivers in treating schizophrenic patient is health services. As for the health services needed are attitudes of health workers, provided services, and supporting health insurance. The most influential factors in the incidence of recurrence of schizophrenic patients are therapy factors[9]Therapy is only obtained from the existing health services. The results of research by[9]stated that patients who took drugs regularly and orderly could reduce psychotic symptoms which might eventually reduce the recurrence rate in schizophrenic patients. This aspect can be realized from the expressions of caregivers such as *"That at that time the doctor was there, but now there is no doctor, so now we just ask for the drugs at that community health center (Puskesmas)."* So is the following phrase *" so, this drug, sometimes he asked for it, sometimes he forgot that we who gave …."*

Besides the required treatment, the provided services and the attitudes of health workers are also demanded by caregivers in treating patients. Some caregivers convey their dissatisfaction with

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

the provided services. This dissatisfaction is related to the attitude of the service provider who seems to lack attention and the quality of service as this expression *"... I hope health workers be patience, do not judge who the person is....."* Another statement like *" it's better like in the past, there was a community health center personnel who came to visit us to see the patient's condition. Very helpful then "*[26] research also revealed a sense of dissatisfaction with the visited health services.

However, several other participants stated oppositely, that service providers were able to serve well. Those caregivers are satisfied with the services that are provided by health workers, such as [26] research which stated that there was a sense of caregivers' satisfaction related to the provided services to caregivers and patients. The attitude of health workers who serve and do not show stigma toward patients is very helpful and gives caregivers and their families a sense of comfort as expressed *"... Good... no complaints ...."* and others say *"Thank God... not no Now the service is good ... I notice it is excellent "*

Another thing that caregivers need from health services is the existence of health insurance as currently implemented by the government, namely the Social Security Administration Body (BPJS). The related participant's statement is *"it was difficult in the past. before there was BPJS, we had to pay millions, but since I used BPJS it really helps me. Thank God. "* This condition shows that the patient's family, especially the caregivers are in desperate need of health insurance to help in the treatment process of patients who are continuously for a long time.

5 Conclusion

This research explored the needs of caregivers in treating patients with schizophrenia, and the researchers found 4 themes as follows:

1. The caregivers 'experiences in caring often encountered problems in the form of lack of caregivers' knowledge in caring and treatment, financial and support.
2. The perceived burdens of caregivers during their caring for patients were the physical burden, emotional/psychological burden, and social burden.
3. The coping mechanisms that were adopted by caregivers can be adaptive and/or maladaptive coping mechanisms
4. Caregivers' needs during the nursing process were knowledge about how to care for patients and their treatment, health support, and services.

References

[1] WHO, A.: Mental health: a state of well-being. Retrieved from http://www.who.int/features/factfiles/mental_health/en/ (2014)

[3] Jalil, M, A.:Faktor-faktor yang mempengaruhikekambuhanpenderitaskizoprenia di RSJ Prof. Dr. SoeroyoMagelang. Skripsi. Tidakdipublikasikan.(2006)

[4] Riskesdas. A.: LaporanHasilRisetKesehatanDasar Indonesia Tahun 2013.

[5] Stuart, G. W, A.:*Principles And Practice Of Psychiatric Nursing*, (10th ed), Philadelphia:

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Mosby(2012)
[6] Wardani. A.: Pengalaman Keluarga Menghadapi Ketidakpatuhan Anggota Keluarga Dengan Skizoprenia Dalam Mengikuti Regimen Terapeutik: Pengobatan. Thesis. FIK UI.Tidakdipublikasikan.(2009)
[7] Leff, J, A.: Working with families of schizophrenic patientsBrit J Psychiatr1647176. (1994)
[8]Fontana, A., & Frey, J, A.: The interview: Fromneutral stance to political involvement. In The Sagehandbook of qualitative research (3rd ed., pp. 695 –727). Thousand Oaks, CA: Sage.(2005)
[9] Sariah, A. E., Outwater, A. H., &Malima, K. I. Y, A.: Risk and protective factors for relapse among individuals with schizophrenia: a qualitative study in Dar es Salaam, Tanzania. *BMC Psychiatry*, *14*, 240. (2014)

[10] Anlee,E, A.: Lived Experiences Of Caring For a Family Member With Schizophrenia. TEXAS WOMAN'SUNIVERSITY.(2009)
[11] Shamsaei, F, A.: Burden on Family Caregivers Caring for Patients with Schizophrenia, 239–245.Indonesia.(2015)
[12] He, G., & Hua, X, A.: Extent of Burden and Coping among Family Caregivers Living with Schizophrenic Patients in Nepal. *International Journal ofSciences: Basic and Applied Research (IJSBAR), 14*, 428–443.(2014)
[14] Marquez, J. A, A.: Family Caregivers ' Monitoring of Medication Usage : A Qualitative Study of Mexican-Origin Families with Serious Mental disorders, 63–82. https://doi.org/10.1007/s11013-010-9198-3 (2011)
[15] Johnson& Leny, A.: *Keperawatan Keluarga*.(cet.1), Yokyakarta: Nuha Medika(2010)
[16]Yazici, E., Karabulut, Ü., Yildiz, M., Tekeş, S. B., İnan, E., Çakir, U., … Turgut, C, A.: Burden on Caregivers of Patients with Schizophrenia and Related Factors, 96–101. https://doi.org/10.5152/npa.2015.9963(2016)
[17] Cw, P., Petrus, L., & Christopher, N, A.: Burdens and Psychological Health of Family Caregivers of People with Schizophrenia in Two Chinese Metropolitan Cities : Hong Kong and Guangzhou, 841–846. https://doi.org/10.1007/s10597-013-9622-6(2013).
[18] Potter, P.A., &Perry,A.G, A.: *Fundamental of Nursing: Conceps, Process and practice*.(4 th ed.), Philadelphia: Mosby-Years Book-Inc(2010).
[19] Einar, J., Ulrik, J., Haahr, H., Harder, S., Marie, A., & Lyse, T. H, A.: Caregiver distress in first-episode psychosis : the role of subjective appraisal, over-involvement and symptomatology, 371–378https://doi.org/10.1007/s00127-014-0935-8(2015).
[20] Friedman, M. M., Bowden, V. R., & Jones, E. G, A.: *Buku Ajar KeperawatanKeluargaRiset, TeoridanPraktik* (Ed 5). Jakarta: EGC : Jakarta.(2010)
[21] Keliat, B.A, A.: Pemberdayaan pasien dan keluarga dalam perawatan pasien skizoprenia dengan perilaku kekerasan di rumah sakit jiwa pusat Bogor. Disertasi. FKM UI. Tidakdipublikasikan.(2009)
[22] Stuart, G. W, A.: *Prinsip dan Praktik Keperawatan Kesehatan Jiwa Stuart*. (B. A. Keliat, Ed.) (Ed. Indonenesia). Fakultas Keperawatan Universitas Indonesia.(2016)
[23] *Chafetz and Barnes*, A.:Families of psychiatric patients: A critical review and future research directions. *Archives of Psychiatric Nursing, vol 10*(1989)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[24] Angermeyer, M. C., &Matschinger, H, A.: The stigma of mental illness: effects of labelling on public attitudes towards people with mental disorder. ActaPsychiatricaScandinavica, 108(4), 304-309. (2003)
[25] Chien, W.-T., Norman, I., & Thompson, D. R, A.: A randomized controlled trial of a mutual support group for family caregivers of patients with schizophrenia. International Journal of Nursing Studies, 41(6), 637-649 (2004)
[26] Mohamad, M. S., Chong, S. T., Hoesni, S. M., Subhi, N., Sarnon, N., & Nen, S.(2011). Family Caregiver's Experiences Using Comunity Mental Health Services in Malaysia. *Jurnal EBangi*, *6*(2), 142–154.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Correlation Between Family Support and Medication Adherence of School-Age Thalassemic Patients at The Thalassemia Clinic in Indonesia

Henny Suzana Mediani [1], Sri Hendrawati [2], Dwi Intan Indah Susanti[3]

{ henny.mediani@unpad.ac.id[1] }

Faculty of Nursing, UniversitasPadjadjaran, West Java, Indonesia[1,2,3]

A**bstract:** Many thalassemic children survivors in Indonesia do not adhere to the treatment of thalassemia as recommended by pediatricians.This research used a cross-sectional design with a total sampling method (N = 90). The population comprises families of school-age thalassemic survivors. The instruments utilized the Morisky Scale modified for the management of thalassemic children and an instrument on the family support theory by Sarafino to collect data on medication adherence are. Univariate and bivariate analysis with Spearman's rank correlation coefficient was employed. The findings showed that 62.2% school-age thalassemic survivors demonstrate high compliance and 37.8% exhibit moderate capacitance. Furthermore, 54.4% of them received strong family support and 45.6% have medium support. The correlation of family support to medication adherence yields a p-valueof <0.001 (r=0.484). It can be concluded that the greater the endorsement was given by the family, the higher the medical compliance of their school-age thalassemic children. Adequate family support is therefore needed to encourage school-age thalassemia sufferers to conform with their medication.

Keywords: family support, medication adherence, school-age children, thalassemia major.

1 Introduction

Thalassemia major is a genetic hematological disorder causing anemia in affected children that represents a major public concern worldwide, specifically in the Middle East, Africa and Southeast Asia countries, including Indonesia [1].

Seven percent of the world's population bears the thalassemia gene, while the broadest thalassemia prevalence at 40% occurs in Asia, including Indonesia as a country with a high risk of thalassemia [2,3,4,5]. Indonesia is one of the countries in the thalassemia belt. Approximately 300,000 children are born with thalassemia each year. Meanwhile, the prevalence of thalassemia carriers in Indonesia attains 3–8% which has been spread across Indonesia, more prevalent in some provinces including Aceh, Lampung, South Sumatra, West Java, South Sulawesi, Maluku [1].

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

No medication has been discovered to cure thalassemia, but its survivors can survive by undergoing regular treatment in the form of blood transfusion and iron chelation therapy. Thalassemia treatment lasts for a lifetime and demands proper management [1,6,7]. Compliance plays an important role in treating thalassemic child [8,9] to maintain their health conditions in order to optimize their growth and improve their quality of life, as thalassemic patients who adhere to their medication experience normal growth and better quality of life [7, 8, 10].

The result of a preliminary study conducted in Garut Regency West Java Province in 2017 found that the prevalence of thalassemia disorder has a relatively high frequency with 246 thalassemia carriers. These numbers are worryingly growing due to lack of awareness regarding this genetic disorder of many Indonesian people, insufficient educational campaigns, as reported by previous studies that most of the mothers with thalassemia carriers never come to know that they are carrying the genes [1,11]. Moreover, regarding the treatment of thalassemia, many thalassemic children did not follow treatment regularly as doctor suggestions. It means that many thalassemia children are not adherence to their treatment. This shows there may lack of concerns and supports for mothers with having thalassemia traits [1]. Similarly, previous studies also identified that thalassemic children survivors may not following their routine treatment [12,13].

Non-adherence to treatment can be intentional or unintentional, where treatment is expensive, misunderstood or ignored. Non-adherence of treatment may cause negative impacts on quality of life thalassemic children [8]. It is therefore, patient adherence is very important to achieve the effectiveness and success of any medical treatment [14]. According to literature, there are some reasons for non-adherence, including the financial burdens associated with treatment, side effects of treatment, inadequate knowledge, and lack of social support [8,15].

School-age thalassemic children require adequate support from significant others around them, such as family which potentially increases their medication compliance [1, 16]. Family support is the main driving force for children [17]. Newland (2008) expresses that parents influence their children's illness by managing behavioral responses to changes taking place during their ill health. Therefore, family support towards the medical adherence of school-age thalassemic children is essential in their medication administration for the sake of ameliorating their quality of life [18]

Although the fact that thalassemia is one of the major health problems in Indonesia, little is known of how the family supports affect to their thalassemic child adherence to the treatment. There is no study in Garut to investigate the relationship of family support to the medication compliance of school-age thalassemic children, where thalassemia is considerably prevalent in the context of West Java. For that reason, this current study is needed to identify family support in relating to medical treatment adherence of thalassemic children in the thalassemia clinic in a general district hospital in Garut, particularly to identify the kind of endorsement that school-age children with thalassemia need from their family in order to comply with their medical treatment.

2 Method

Design and setting

A cross-sectional descriptive, correlational design was employed in this study. The study was conducted at the thalassemia clinic of Dr. Slamet General Hospital Garut from April to

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

May 2018. This is district public hospital directly under the administration of the Ministry of Health.

Population and sampling

The population comprises 90 families of school-age children with thalassemia undergoing treatment at the polyclinic, all of who are selected as sample through total sampling. The inclusion criteria were: the respondents must be either a mother, father or relative who is the primary caregiver living in the same house with a thalassemic child who assumes as the primary responsibility in caring for the thalassemic child, is able to communicate verbally and willing to participate in the study.

Data collection

Data were collected after this study was approved by the Health Research Ethic Committee of the Faculty of Medicine Universitas Padjadjaran Indonesia and got a letter permission for conducting the study from Director of Dr. Slamet General Hospital Garut. The ethical approval number is 365/UN6.KEP/EC/2018. All eligible school age thalassemic children and their parents were approached as they came for routine follow-ups at the thalassemia clinic in the hospital during the data collection period. Written parental informed consent and the school-age thalassemia's children with their parent assent were gained prior to participating in the study. At the beginning of collecting data, all respondents were informed of the aims of the study and were assured that all responses would remain confidential.

Research instrument/questioners

The Family Demographics (FD) questionnaire

The FD questionnaire obtained sociodemographic data about thallassemic child, the caregiver, including age, marital status, educational level, occupation, family income, health education.

The Morisky Scale

The Morisky Scale used to assess the medication adherence of school-age thalassemic children. The researcher used this scale which has already translated, modified and tested of validity and reliability by Persiyawati (2015). The researcher tailored the wording to be applicable to school age thallasemic children. It consisted of 15 questions with two subscales: the adherence to blood transfusion (5 questions) and adherence to iron chelation therapy (10 questions). A 4-point Likert scale (1=never to 4=always) was utilized. The total score ranged from 0 to 60 points. The score was categorized into three levels: high adherence (41 – 60), medium adherence (21-40) and low adherence (0-20). The Cronbach's alpha coefficient was used to test consistency yielding the value of 0.780.

The family support instrument

The researchers used the family support instrument that has developed by Darmawan (2017). The instrument wascreated based on Sarafino and Smith (2012) family support theory which contains of 4 kinds of family supports, namely information support, assessment support, instrumental support and emotional support. The instruments consisted of 28 questions. A 4-point Likert scale (1= never to 4= always) was used. The total score ranged from 0 to 112. The score of family support was categorized into 3 levels of family support: high support (76 – 112

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

point), medium (38 – 75 point), and low support (0 – 37 point). The Cronbach's alpha coefficient was employed to test consistency yielding the value of 0.995.

Validation of the questionnaires

In order to check content validity of the questionnaires the researcher asked a hematologist, pediatric nurse, and a senior pediatric lecturer who experts experienced in family nursing.

Data analysis

Data were analyzed by Microsoft Excel 2010 and SPSS (Statistical Package for the Scosial Sciences) Program version 21.0. The obtained data was analyzed by using univariate analysis to establish the frequency distribution of each research variable. Nonparametric tests were used due to data was ordinal data and the researcher found that data were not normally distributed. The Spearman's rank correlation coefficientwas used to determine the correlation between both variables. The significance level was considered below 0.005 ($p<0.005$).

3 Result

Table 1. Frequency distribution of the demographic characteristics of school-age thalassemic children' family members at the thalassemia clinic of Dr. Slamet General Hospital Garut Regency (n=90)

Respondent Characteristics		***f***	**%**
Child age	6 – 8 years	16	17.8
	9 – 12 years	74	82.2
Child gender	Female	50	55.6
	Male	40	44.4
Family member age	18 – 45 years	78	86.7
	≥ 46 years	12	13.3
Family member gender	Female	60	66.7
	Male	30	33.3
Education	Uneducated	3	3.3
	SD	41	45.6
	SMP	23	25.6
	SMA	19	21.1
	Higher education	4	4.4
Occupation	Civil servant	3	3.3
	Entrepreneur	29	32.2
	Laborer	32	35.6
	Unemployed	26	28.9
Distance from home to hospital	≥ 5 km	63	70.0
	< 5 km	27	30.0
Income	< Rp 500,000/month	30	33.3
	Rp 500,000 – Rp 1,500,000/month	37	41.1
	> Rp 1,500,000/month	23	25.6
Health education	Yes	52	57.8
	No	38	42.2

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 1 presents the demographic characteristic data in which the majority or 78 of the family members (86.7%) are aged 18-45, and two-thirds of them are female. Nearly half or 41 of the participants (45.6%) only passed primary school, and more than a third, or 32 respondents (35.6%), work as laborers. In terms of distance, 63 participants (70.0%) live over 5 km away from the hospital, causing a large proportion of 75 of them (83.3%) to go to the hospital by public transport. Meanwhile, 37 respondents (41.1%) earn between Rp 500,000 and Rp 1,500,000 a month, whereas 52 subjects (57.8%) have received education about thalassemia.

Table 2 Frequency distribution of overall medication adherence of school-age thalassemic children at the thalassemia clinic of Dr. Slamet General Hospital Garut Regency (n=90)

Category	Frequency (*f*)	Percentage (%)
High adherence	56	62.2
Medium adherence	34	37.8
Low adherence	0	0.0

Table 2 displays data concerning medication compliance in general, where 56 participants (62.2%) highly comply with their treatment. Meanwhile, 37.8 % of school age thalassemic children was medium comply to the treatment and none was in low adherence to the treatment. As for findings about medical compliance according to the sub-variables examined in this research, the frequency distribution is delineated in the following table.

Table 3 Frequency distribution of medication adherence of school-age thalassemic children at the Thalassemia clinic of Dr. Slamet General Hospital Garut Regency by sub-variable (n=90)

Sub-variable	Category	*f*	%
Adherence to blood transfusion	High adherence	60	66.7
	Medium adherence	30	33.3
	Low adherence	0	0.0
Sub-variable	**Category**	***f***	**%**
Adherence to iron chelation therapy	High adherence	53	58.9
	Medium adherence	37	41.1
	Low adherence	0	0.0

Table 3 describes that the majority of the patients highly adhere to blood transfusion and iron chelation therapy, the studied sub-variables, with 60 (66.7%) and 53 of them (58.9%) respectively.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Table 4. Frequency distribution of overall family support towards medication adherence of school-agethalassemic children at the thalassemia clinic of Dr. Slamet General Hospital Garut Regency (n=90)

Category	Frequency (*f*)	Percentage (%)
High support	49	54.4
Medium support	41	45.6
Low support	0	0.0

Table 4 points out that family support towards medical compliance of their school-age thalassemic children was high in 49 respondents (54.4%) and 45.6 % of family gave medium support to medical compliance. Aside from family support in general, sub-variables pertaining to the construct are also looked into, resulting in the frequency distribution as follows.

Table 5. Frequency distribution of family support towards medication adherence of school-age thalassemic children at the thalassemia clinic of Dr. Slamet General Hospital Garut Regency by sub-variable (n=90)

Sub-variable	Category	*f*	%
Information support	High support	59	65.6
	Medium support	31	34.4
	Low support	0	0.0
Assessment support	High support	65	72.2
	Medium support	25	27.8
	Low support	0	0.0
Instrumental support	High support	55	61.1
	Medium support	35	38.9
	Low support	0	0.0
Emotional support	High support	49	54.4
	Medium support	41	45.6
	Low support	0	0.0

Table 5 above shows that most participants considerably encourage medical compliance through each investigated sub-variable. More specifically, 65 family members (72.2%) have given support in assessment, 59 respondents (65.6%) have conferred informational support, 55 subjects (61.1%) have granted instrumental endorsement, and 49 participants (54.4%) have provided emotional support.

Table 6 illustrates general correlation between family support and medication adherence of school age thalassemic children.

Table 6. General correlation between family support and medication adherence of school-age thalassemic children at the thalassemia clinic of Dr. Slamet General Hospital Garut Regency (n=90)

Correlation	Medication adherence	Family support
Correlation coefficient	0.484	
p-value	< 0.001	

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

As can be seen from the table 6 the acquired p-value of less than 0.001 indicates that the variable of medical compliance and that of family support was significantly correlated. The Spearman coefficient correlation was 0.484, it means that there wasa moderately positive correlation between medical adherence and family support.

4 Discussion

Medication Adherence of School-Age Thalassemic Children

The findings of this research showed that the majority of respondents strongly comply with medication, as is notable from the 60 participants (66.7%) who adhere to blood transfusion and the 53 (58.9%) who faithfully observe the iron chelation therapy. On the whole, 56 respondents (62.2%) closely conform to the treatment of school-age thalassemic children in the thalassemia clinic of Dr. Slamet General Hospital in Garut Regency. Based on the findings of this study the school-age thalassemic children more than half respondents have a high medication adherence to treatment. It might be caused by parents of thalassemic children knowing that adequate treatment is essential for treating their child's illness of thalassemia. As affirmed by Mediani et al. (2017) that the awareness of parents over the health of thalassemia carriers aims to aid children with thalassemia to grow well and live with optimal health, thus fostering strong family adherence to the medication of school-age thalassemic children [1].

The high level of medication adherence of school-age thalassemic children found in this study may also be influenced by the thalassemic children's motivation to reach wellness and have a long life. As previous research by [22] revealed that the motivation to recover and the perception and hope of thalassemia carriers to stay alive uplift medication compliance. High levels of compliance indicate that the respondents are aware and confident of the medication's effectiveness in sustaining the life of children with thalassemia so that they strive to ensure that the treatment is optimally undertaken. Moreover, previous studies indicated that decent knowledge can avert detriments from affecting medical adherence [23, 24]. It can be understood from the result of the study that 1/3 of respondents were still moderate of medical adherence to treatment. It is necessary to identify and assess moderate low adherence and to identify school-age thalassemic children's perceptions toward the treatment regimen and barrier to adherence.

Family Support towards Medication Adherence

This study unveils that over half or 49 participants (54.4%) offer extensive family support to the medication compliance of school-age thalassemic children, whereas the types of endorsement given by family members in descending order of extent are assessment, information, instrumental, and emotional. The majority of families in this research have had health education related to thalassemia and its treatment, which makes them informed about their children's need to have good treatment and optimal health. When parents knowing well about the thalassemia and its treatment will influence their thinking of parents so it is more rational in giving family support for their thalassemic child. Hastuti's (2014)study indicated that health education enhances parents' comprehension and enables them to make decisions and oversee the conditions of their children [25].

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Active support from family members is needed in conducting medication, as the attitudes of the family in treating thalassemic children may influence their quality of life. It follows that parents with a thalassemic child themselves need informational and emotional support to care for their child optimally. In this respect, nurses are obliged to understand the difficulties of the child and family to be able to give them such support in performing the care [1, 26].

Correlation of Family Support to Medication Adherence

The p-value of < 0.001stemming from data analysis signifies that the medical compliance of school-age thalassemic patients is significantly linked to family support. The study also yields a Spearman correlation coefficient of 0.484, denoting a positive correlation with moderate strength. This implies a parallel relationship in that the greater the extent of family support, the higher the level of medication adherence [8]. If thalassemic children are not treated in time optimally, they cannot long life, they will die between the ages of 1-8 years [13]. Therefore, timely and proper treatment is essential for the survival of thalassemic children. It is essential for parents having adequate knowledge about thalassemia and its treatment, so parents will provide optimal support to their thalassemic child to have a high medical adherence to the thalassemia treatment.

Earlier studies also demonstrated that a substantial correlation between family support and medical adherence [24, 27]. As put forward by Kozlowski and Monitto (2013)that families who do not assume their role in the medication may make it suboptimal, because inadequate support from the family could diminish the motivation of the thalassemia sufferer to continue treatment. Support delivered by family members is an instrumental factor in the compliance of school-age thalassemia carriers to their medication [1, 28].

It is the best ways to provide more emotional and psychological support to the thalassemic child which aimed at helping children effectively cope with the medical treatment. Adequate support from family members who accompany thalassemic children in every instance of treatment can bolster the patients' medical adherence and increase the thalassemic child's quality of life, as well as physical health conditions. School-age children with thalassemia thereby need their parents' active involvement to motivate, persuade, engage, usher, attend, and help fund them in undertaking their medication process. Families also take part in seeking and sharing information related to issues faced by their members [1, 26, 29].

5 Conclusion

The result of this research inform that the high medical compliance of school-age thalassemic children pertains to optimum family support. This implies that the greater the support offered by the family, the stronger the adherence of school-age thalassemia children to their medication. In addition, the assistance of nurses is also required whenever the family encounters difficulties in instructing children with thalassemia to comply with their treatment. Nurses play a fundamental role in enhancing the health care services provided to families of school-age children with thalassemia to assure that they adhere to the medication and receive optimal support. Nurses do so by giving informational, emotional, social, and professional engagement to families with thalassemic children.

Considering the outcomes of this study, the researchers recommend health workers who handle school-age thalassemic carriers to educate families of such patients regarding the impact of compliance to thalassemia medication in order to elicit their adherence in

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

undertaking regular treatment. It is also advised to the family of school-age thalassemic children to be more sensible in looking after and applying for the appropriate support on them, as well as to increase knowledge of the proper medication and complications that may arise when not complying to the treatment of school-age thalassemic patients. By expanding their insight around thalassemia, it is expected that families be more perceptive towards the urgency of medication for thalassemic children.

Limitation of the study

There were several limitations of this study generalizability to other settings is limited. Random selection sampling was not used due to sample size is not too big. Moreover, this cross sectional study was limited since it is a picture of one point in time. Future study should include a larger sample size and various contexts and setting for representativeness.

References

[1] Mediani, H. S., Nurhidayah, I., Mardhiyah, A., & Panigoro R. Indonesian mothers' needs and concerns about having a thalassemic child and its treatment: An exploratory qualitative study. Int J Nurs Care. 2017;1(2):1–7.

[2] Alyumnah, P., Ghozali, M., & Dalimoenthe NZ (2016). Skrining thalassemia beta minor pada siswa SMA di Jatinangor. J Sist Kesehat. 2016;1(3):133–8.

[3] Pruthi, G. K.1 and Singh TB. Psychosocial Burden and Quatlity of life in parents of Children with Thalassemia and Cerebral Palsy: A Comparative study. Delhi Psychol. 2010;2(1):10–7.

[4] Gupta N, Abrol P RG. A study of psychopathology and family burdens in children with thalassemia major. J Rural community psychiatry. 2014;4.

[5] Mashayekhi F, Jozdani RH, Chamak MN, Mehni S. Caregiver Burden and Social Support in Mothers with β-Thalassemia Children. Glob J Health Sci. 2016;8(12):206.

[6] Baghianimoghadam MH, Sharifirad G, Rahaei Z, Baghianimoghadam B, Heshmati H. Health related quality of life in children with thalassaemia assessed on the basis of SF-20 questionnaire in Yazd, Iran: A case-control study. Cent Eur J Public Health. 2011;19(3):165–9.

[7] Wahyuni MS. Perbandingan kualitas hidup anak penderita talasemia dengan saudara penderita talasemia yang normal. Universitas Sumatera Utara, Medan, Indonesia; 2010.

[8] DiMatteo MR. Social support and patient adherence to medical treatment: a meta-analysis. Heal Psychol. 2004;23:207–18.

[9] Thavorncharoensap, M., Torcharus, K., Nuchprayoon, I., Riewpaiboon, A., Indaratna, K., & Ubol BO. Factors affecting health-related quality of life in Thai children with thalassemia. BMC Hematol. 2010;10(1).

[10] Safitri, R., Juniar, E., & Karim D. Hubungan kepatuhan transfusi dan konsumsi kelasi besi terhadap pertumbuhan anak dengan thalasemia. J Online Mhs. 2016;2(2):1474–83.

[11] Bulan S. Faktor-faktor yang berhubungan dengan kualitas hidup anak thalasemia beta mayor. FKUI Universitas Diponegoro: Semarang; 2009.

[12] DiMatteo, R., Liuzza, F., Pezzillo, F., Gerardino, L., & Maccauro G. Subtrochanteric femoral fracture in a 26-year-old woman affected by Î²-talassemia major due to minor trauma: Analysis of bone modification causing the complication. Clinal Ter. 2007;158(5):425–9.

[13] Origa, R., Bina, P., Agus, A., Crobu., G, Defraia E, DessÃ¬ C et al. Combined therapy with deferiprone and desferrioxamine in thalassemia major. Haematologica. 2005;90:1309–14.

[14] DiMatteo, M.R., Miller TA. Treatment adherence in adolescence. In: O'Donohue WT, Benuto LT TL, editor. Handbook of Adolescent Health Psychology. New York, NY: Springer; 2013.

[15] Cohen J, Christensen K FL. Disease management and medication compliance. Popul Health Manag. 2012;15:20–8.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[16] Sazlina, S.G., Asauji, Y.M.Y., & Juni M. Predictors of health related quality of life among children and adolescents with beta thalassemia in three hospitals in Malaysia: A cross sectional study. Int J Public Heal Clin Sci. 2015;2(2).
[17] Kozlowski, L. J., & Monitto CL. Pain in hospitalized children. Pediatr Parents. 2013;29(5):24–5.
[18] Newland JA. Factors influencing independence in adolescents with sickle cell disease. J Child Adolesc Psychiatr Nurs. 2008;21(3):177–85.
[19] Persiyawati Y. Kepatuhan Orang Tua Anak Penyandang Thalassemia dalam Meminimalisir Kelebihan Zat Besi di Poli Thalassemia RSUP dr. Hasan Sadikin Bandung. Fakultas Keperawatan Universitas Padjadjaran, Bandung; 2015.
[20] Darmawan RA. Gambaran Dukungan Keluarga terhadap Kepatuhan Pengobatan pada Anak Usia Sekolah Penyandang Talasemia Mayor di Poli Talasemia RSUD Sumedang. Fakultas Keperawatan Universitas Padjadjaran, Bandung; 2017.
[21] Sarafino, E.P., & Smith TW. Health Psychology: Biopsychosocial Interactions. John Wiley & Sons Inc; 2012.
[22] Isworo, A., Setiowati, D., & Khoiriyah AR. Support keluarga yang diperlukan pasien thalassemia. J Ilmu Keperawatan dan Kebidanan. 2014;2(1):1–7.
[23] Prihantana, A. S., & Wahyuningsih SS. Hubungan pengetahuan dengan tingkat kepatuhan pengobatan pada pasien tuberkulosis di RSUD Dr. Soehadi Prijonegoro Sragen. J Farm Sains Prakt. 2016;2(1):46–51.
[24] Sari, I. D., Mubasyiroh, R., & Supardi S. Hubungan pengetahuan and sikap dengan kepatuhan berobat pada pasien TB paru yang rawat jalan di Jakarta tahun 2014. Media Penelit dan Pengemb Kesehat. 2017;26(4):243–8.
[25] Hastuti RP. The effect of the Thalasemia Education Package (PEdTal) on the quality of life of children with thalasemia. J Kesehat. 2014;5(2):137–44.
[26] Irnawati, N. M., Siagian, I. E. T., & Ottay RI. Pengaruh support keluarga terhadap kepatuhan minum obat pada penderita tuberkulosis di Puskesmas Motoboi Kecil Kota Kotamobagu. J Kedokt Komunitas dan Trop. 2016;4(1):59–64.
[27] Siswanto, I. P., Yanwirasti., & Usman E. Hubungan pengetahuan dan support keluarga dengan kepatuhan minum obat anti tuberkulosis di Puskesmas Andalas Kota Padang. J Kesehat Andalas. 2015;4(3):724–8.
[28] Golics, C.J., Khurshid, M., Basra, A., Salek, M.S., & Finlay AY. The impact of patients' chronic disease on family quality of life: an experience from 26 specialties. Int J Gen Med. 2013;6:787–98.
[29] Sumantra, I. G., Kumaat, L. T. & BJ. Hubungan support informatif dan emosional keluarga dengan kepatuhan minum obat pada lansia hipertensi di Puskesmas Ranomuut Kota Manado. E-Jurnal Keperawatan. 2017;5(1).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Sexual Risk Behaviors of Brothel Customer in Bangka Belitung Province

Akhiat

Email : akhiatanasibrahim@gmail.com

Health Polytechnic in Pangkalpinang

Jalan Komplek Perkantoran Provinsi Bangka Belitung, Pangkalpinang Pulau Bangka

Abstract. Prostitution activities have a high risk of spreading sexually transmitted diseases. Female sex workers often had no other choice if their customers were refusing to use a condom when providing services that made them at risk of contracting sexual diseases. This study aimed to explore the sexual behavior of brothel customers. The design of this study was descriptive qualitative, data collected by in-depth interviews with three Female Commercial Sex Workers, and a Pimp. Informants were chosen randomly. Data were processed by categorizing or grouping the results of interviews and presented in narrative form. The results showed that a risk sexual behavioral of the customers of Teluk Bayur Brothel was oral sexual services without using condoms. Female CSWs (Commercial Sex Workers) had low education, but they had good knowledge about the risk of sexually transmitted diseases, especiallyHIV/AIDS.

Keywords: Sexual Risky Behaviors, commercial sex workers, sexually transmitted diseases.

1. Introduction

A brothel is still taboo for some people. Official Brothel is a place where the practice of trading transactions between commercial sex workers (CSWs) and people who need services from these CSWs. This place is a choice for men who usually have a strong sexual desire but cannot vent it appropriately. The established of Brothel in an official area usually has the local government's approval, and it is not free from taxes that must be paid to the government in order to carry out these activities. Sexual behavior is any behavior that is driven by sexual desire, either with the same or different sex. This type of behavior is diverse, ranging from feelings of attraction to dating behavior, flirt, and making love [1].

Safety sexual intercourses are a way of engaging in sexual activity to avoid contracting sexually transmitted diseases by using condoms and not changing partners. Some define

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

safety sex as sexual behavior without causing penetration of the penis into the vagina or anus, for example, by holding hands, hugging, and kissing. The types of safe sex are using condoms, using water-based lubricants, having sex without penetration (example: kiss), having sex with a partner who is faithful to each other. In contrast, risky sexual behavior has the risk of being transmitted by sexually transmitted infections, HIV and AIDS, such as having sex without wearing a condom [2].

Sexual behavior is divided into two types. The first is risky sexual behavior; including kissing the lips, making out, groping genitals (masturbating), rubbing genitals and engaging in sex (intercourse). The second is sexual behavior that does not cause risks, including dating, holding hands, hugging, and kissing cheeks [3].

STIs can be transmitted through unsafe sexual intercourse, including unprotected sex, condom sex, and oral sex. However, STIs are not spread through skin contact, sweat, saliva, and air. IMS bacterium is mainly present in genital fluids and blood. STIs are contagious, especially when someone's genital fluid or blood that has been infected by STIs enters the body of another person [4]. Behaviors that are at risk for STIs include sexual intercourse without using a condom [5].

The Teluk Bayur Official Brothel has existed since 1980s. Originally Teluk Bayur is a recreation area, but it turned into Official Brothel after commercial sex workers (CSWs) at the Pasir Putih Brothel move to Teluk Bayur. In the Teluk Bayur Pangkalpinang localization, there are 6 guesthouses with around 74 commercial sex workers (CSWs). Most of the guesthouses in this Brothel are in permanent form [6].

Increasing cases of sexually transmitted diseases (STD) are serious concerns to the World Health Organization (WHO). In a recent study, more than 1 million people in the world are diagnosed with sexually transmitted diseases every day.

2. Method

The design of this study was descriptive qualitative, data collected by in-depth interviews with three female sex workers and a pimp. The sampling method used was purposive sampling. Samples were taken with consideration of age, length of work and education of respondents.

3. Results

Table 1. Characteristics of Informants

No	Nama Info	JK	Age	Education	Length of work

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

				Years		
1	L	CSW	F	23	Elementary	2 Years
2	E	CSW	F	28	High School	1 Year
3	V	CSW	F	37	Middle School	1 Year
4	H	Pimp	F	42	Middle School	3 years

The research showed that two informants used injection contraception while one informant used implantable contraception. Information from Pimp obtained that there were no facilities or appeals to use contraception for commercial sex workers.

The research showed that all informants had initiatives to precede customers in using condom contraception. Informant Pimp stated a firm appeal to CSWs to use condoms, but Pimp did not provide contraception.

In the case of customers who were reluctant or refused to use condoms, this was rarely the case, because most customers were willing to use them. Several times some customers were reluctant to use condoms for the same reason that they felt uncomfortable, but all informants still recommended in using it. The researchers asked further what if customers gave additional money or in case that the customers looked clean and healthy, all informants insisted that they would not serve unprotected sex.

Other CSWs in the Brothel had to use a condom because of a case of HIV / AIDS that had been found in some sex workers a few years ago.

Two informants said that they had worked in other regions before and said they were happy to work here because they felt safer. Also, they got many guidance and information from the local government, for example through counseling and health checks.

All CSW informants said that there were some customers who wanted the sensation of oral sex services without using condoms and the CSWs stated that they did not mind doing it. The CSW Informants stated that they had never met a customer who wanted anal sex services. all CSW informants also stated that they had never suffered from a sexually transmitted disease. From the description above it appeared that the knowledge about the dangers of oral sex is incorrect.

4. Discussion

The majority of CSWs (86%) had elementary and junior high school education. Characteristics of CSWs based on elementary and junior high school education was

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

equivalent to the initial basic education level. At this level, a person would not be able to understand the information optimally. Education would affect a person's absorption of the information he received. With a good education, the process of growth, development, and change became assured, a person grew more mature individually, in groups or communities (Notoadmojo, 2010). In the research, it seemed that the understanding of the CSW informants was quite good. Even though their educational background was low but through socialization and counseling, the risk behaviors from customers can be anticipated by CSWs.

All CSW informants took the initiative to use condoms. Motives or motivations were stimuli, encouragement, or strength for the occurrence of an action or behavior (Sarwono, 2013). Sex workers' awareness and fear to be infected by dangerous diseases made them became active to ask their customers to use condoms before the intercourse.

In contrast to the research of Laode Irwansyah (2014), the informants revealed that they did not use condoms because of the motivation. The customers offered them more payment, and the important thing was not to use condoms. This case was in line with research conducted by Oppong et al. (2007), who stated that CSWs wanted to satisfy their intimate partners' desire without using condoms because of financial reasons.

The intimate partner was someone that could directly influence the behavior of condom usage on informants. Using condoms always involved two parties, namely CSW and customers. Therefore, clients' role in using condoms was important either for CSW or a party that inhibits condom usage.

CSW customers did not want to use condoms for several reasons; the first reason was an uncomfortable feeling, and tasteless. In line with research conducted by Zhang et al. (2011), stated that customers always refused to use condoms because they reduced the pleasure.

According to the results of research conducted by Ghimiere et al. (2011), that almost all CSWs revealed that clients refused to use condoms for reason of reducing pleasure. CSWs used condoms only if their clients demanded that they used them; clients generally did not demand to use condoms. In the case of clients' rejection, CSWs did not agree or try to force the client because they were afraid that they would lose the client if they do not agree to have sex.

Another reason why CSWs intimate partners did not want to use condoms is that partners want to use condoms unless they believe in their CSW regarding cleanliness and disease. This result was in line with research conducted by Zhang et al. (2011) that customers always refused to use condoms because of a sign of trust.

The inability of CSWs to communicate regarding the use of condoms would affect CSWs in safe sex. As research conducted by Wojcicki and Malala (2001), that men had power, and women were helpless. It meant that there was powerlessness of CSWs in terms of sexual negotiations with clients.

In this research, pimps were one of the parties that had a considerable role related to the use of condoms for CSWs. Pimps had a significant role and were directly related to the

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

practice of using condoms among CSWs. However, the availability of condoms in this study was not facilitated directly by pimps. The prostitutes themselves prepared condoms. Informants provided their condoms by buying at a pharmacy. Based on the results of research conducted by Munoz et al. (2011), that CSWs in Tijuana and Ciudad Juarez always prepared condoms, they could afford to buy their condoms, but access to free condoms is minimal.

In general, most of the informants had no difficulty in getting condoms. The availability of condoms contributed to condom use. The informants revealed that they obtained condoms by buying it at a pharmacy because their pimps did not provide them.

Based on the information from the informants, several customers want unprotected oral sex services. According to WHO (2017), quoted from James Gallagher, oral sex caused dangerous gonorrhea and avoided the use of condoms would help in spreading it. The UN agency warned that if someone had contracted gonorrhea, it would now be more challenging to treat and in some cases, impossible to cure. Sexually transmitted infections quickly develop resistance to antibiotics.

Around 78 million people contracted sexually transmitted infections (STI) every year and could cause infertility. The World Health Organization analyzed data from 77 countries and showed gonorrhea immunity to antibiotics was widespread. Dr. Teodora Wi, from WHO, said that there were three cases - in Japan, France, and Spain - where the infection was completely untreatable. He said: "Gonorrhea is a very intelligent bacterium; every time you introduce a new class of antibiotics to treat gonorrhea, the bacteria become resistant." Alarmingly, most gonorrhea infections happened in developing countries where immunity was more challenging to detect.

5. Conclusion

Risky sex practices by customers of Teluk Bayur Brothel occurred in oral sexual services without using condoms, which were at a significant risk of the incidence of Gonorrhea. The risk of other diseases could be minimized by the unavailability of CSWs to serve customers without using condoms, even if the customer wanted it.Even though CSWs had a low education level, they had good knowledge about the risk of sexually transmitted diseases, especially HIV / AIDS. Their knowledge was through counseling, training from the Regional Government, and experience. It is recommended that the official brothel policy can keep going so that the Regional Government can control the transmission of sexually transmitted diseases.

References

[1] Sarwono: Psikologi Remaja, PT Raja Gravindo, Jakarta (2005)

[2] Buku SRHR GWLmuda, https://www.gwl-ina.or.id/buku-kesehatan-dan-hak-seksual-serta-reproduksi-remaja-gwl/ diakses Tanggal 20 Agustus 2019

[3] Banun, F. O. S dan Setyorogo S, Faktor-faktor yang berhubungan dengan Prilaku Seksual Pranikah Mahasiswa Semester V STIKes X Jakarta Timur, Jurnal Ilmiah Kesehatan, Vol. 5 No. 1 (2012)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

[4] Kemenkes: Buku Saku Pejangkau Masyarakat, Alat Kelamin dan Semua yang Perlu Kita Ketahui tentang PMS (2015)

[5] Chayati W. A: Gambaran Prilaku Waria Penderita Infeksi Menular di Kota Semarang, Jurusan Kesmas Fakultas Kedokteran dan Ilmu Kesehatan Universitas Jenderal Sudirman (2011)

[6] Bangka Pos 26 June 2016

[7] Notoatmojo S. Promosi Kesehatan, Teori dan Aplikasi, Rineka Cipta Jakarta (2010)

[8]Sarwono, Sarlito W. Pengantar Psikologi Umum. Jakarta : PT. Raja Grafindo(2013).

[9] Oppong, Adu et al. (2007). Social And Behavioral Determinants Of Consistent Condom Use Among Female Commercial Sex Workers In Ghana. Jurnal. www.researchgate.net AIDS Education and Prevention The Guilford Press diakses tanggal20 Agustus 2019

[10] Zhang, Hua et al. Predictors of consistent condom use based on the Information-Motivation- Behavioral Skills (IMB) model among female sex workers in Jinan, China. Jurnal. https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-11-113.(2011). Diakses Tanggal 20 Agustus 2019

[11] Wojcicki, Janet Maia dan Malala, Josephine. Condom use, power and HIV/AIDS risk: sex-workers bargain for survival in Hillbrow/Joubert Park/ Berea, Johannesburg. Jurnal. https://www.researchgate.net/publication/119590412001. Diakses Tanggal 20 Agustus 2019

[12] James G. Bahaya who tegaskan seks oral memicu bakteri penyebab penyakit gonore, https://medan.tribunnews.com/2017/07/07. Diakses Tanggal 20 Agustus 2019

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The Influence of The Element Warmer of Intravenous Fluid in Increasing The Body Temperature on Post-Surgical Patients in The Recovery Room Grandmed Hospital

Kardina Hayati[1], Tahan Adrianus Manalu[2], Pranita[3]
(kardinahayati@medistra.ac.id[1] t h aman@yahoo.co.id[2], Pranita@yahoo.com[3])
[1,2,3]Faculty of Nursing and Physiotherapy,
Medistra Lubuk Pakam Institute of Health, Indonesia
www.medistra.ac.id[123]

Abstract. The Operation procedure has the integrity risks of the body disturbed, and even it can cause a threat to the patient's life. One of the risks is Hypothermia post-surgery. In the GrandMed Hospital, almost all of the patients who had post-surgery experienced hypothermia. The purpose of this research was to investigate the influence of the element warmer of intravenous fluid in increasing the body temperature post-surgery in Recovery Room at Grandmed Hospital Lubuk Pakam 2018. The research was quantitative research, with research design quasi-experiment and with used approach pre-test and post-test with acontrol group design. The population in this research were all of the post-surgery patients with the sample as many 26 respondences for the intervention group, and 26 respondences for the control group with the sampling technique used purposive sampling. The Intervention group used warm blankets, and element warmer of intravenous fluid and the control group used only warm blankets. Based on the result of Dependent T-test and Independent T-test showed significance level (p) = 0,001 or p V lue = 0 001 ≤ 0 05. The result of this rese rch showed there w s n influence giving the element warmer of intravenous fluid to increase hypothermia body temperature on post-surgery patients in Recovery Room. With the use of this tool, patients undergoing surgery receive a supply of fluids that is in accordance with the core temperature and flows throughout the body so that it is effective in increasing the body temperature of the patient's postoperative hypothermia. Giving the element warmer of intravenous fluid can increase body temperature on post-surgery patients in Recovery Room.

Keywords: Post-Surgical, hypothermia; warm blankets; element of intravenous

1 Introduction

People consider surgery is an easy alternative to avoid complications from the disease they suffer (Potter and Perry, 2010).Surgery is a treatment procedure that uses invasive techniques by opening or displaying parts of the body that will be handled through an incision that ends with closure and suturing of the wound, and surgery is performed for several reasons and diagnostics [1] (Sabiston, 2011).

Based on data obtained from the World Health Organization [2] (WHO, 2016), the number of patients undergoing surgery achieved a very significant increase from year to year. In 2016 there were 163 million patients in all hospitals in the world. Surgery aims to prevent disability and complications, where this action is the treatment of choice in various conditions that are difficult and impossible to cure through simple drugs. More and more patients are getting surgery. This is evidenced by the surgical operation in several hospitals from year to year which tends to increase [3]. (Potter and Perry, 2010).

Based on the Riskesdas in 2009 [4], surgical procedures occupy the eleventh of the first 50 treatments of disease patterns in hospitals in Indonesia, an estimated 32% of which are Laparatomy surgery[5]. (DEPKES RI, 2009). In one of the largest hospitals in Eastern Indonesia, in 2015 as many as 1967 patients underwent surgery at the Emergency Cito OK[6]. (Medical Records Prof. Dr. R. D Kandou Hospital Manado, 2015 in Friscilia, 2015).

Preliminary studies obtained at the Grand Medistra Lubuk Pakam Hospital, from July to October 2016 showed that there were 2,538 patients who underwent operations, ranging from minor operations, moderate to large operations[7]. (Medical Record, 2016).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Hypothermia is a post-anesthesia complication that is often found in recovery rooms, both after general and region l nesthesi . Hypothermi is st te with core temper ture of 1˚C lower th n the normal temperature (36.5-37.5˚C) of the hum n body t rest with norm l mbient temper ture. One in three patients will experience hypothermia during surgery if no intervention is made. About 30 to 40% of post-anesthesia patients are found to have hypothermia when they arrive at the recovery room. If a temperature of less than 36.5 ° C is used as a benchmark, the incidence of hypothermia is 50-70% of all patients undergoing surgery[8]. (Anggita, 2014).

According to Himawan Sasongko (2005) in Virgianti (2014) [9], in his research stated that the incidence of chills during the recovery of anesthesia between 5% to 60%. According to Bhattacharya et al in 2009, shivering occurred in 40% who recovered from general anesthesia, 50% in patients with a core temperature of 35.5 ° C and 90% in patients with a core temperature of 34.5 ° C. While the incidence of chills after spinal analgesia varies. Kelsaka gets around 36%, Roy gets around 56.7%, while Sagir and Honarmand get around 60% [10]. Several studies have proven the negative effects of hypothermia that are not treated immediately to patients, including the risk of increased bleeding, myocardial ischemia, recovery after a long time of anesthesia, impaired wound healing, and increased risk of infection.

Hypothermia will increase oxygen demand, carbon dioxide production, and also increase in plasma catecholamine levels which will be followed by an increase in pulse rate, blood pressure, and an increase in cardiac output[11[(Rustianawati, 2013). The heating element method is still rarely to warm intravenous fluids, it always used to warm blood components, postoperative patients only use external warmth by giving blankets only. With this new method, the heating element is not only used to warm the blood but can also be used to warm other intravenous fluids, so that the intravenous fluid becomes warm when the flow enters the blood vessels, and is expected to increase body temperature and keep it normal. But so far an evaluation of the extent to which the effect of the heating element method can reduce or minimize the incidence of hypothermia. Based on this description, the researchers felt interested in conducting a study to examine the effect of giving elements of intravenous fluid warmers on the increase in body temperature of hypothermia in post-surgical patients in the hospital.

2 Methods

This research is a type of quantitative research, with the research design Quasy Experiment (Quasi Experiment) with the design model Pretest Posttest Only With Control Group Design. This design is carried out randomization where each member of the control group or intervention group is carried out on a random or random basis.

Then the pretest was conducted in both groups, and intervention was followed in the experimental group. After some time posttest was done on both groups. The results of these observations are then compared with the results of observations in the control group that received other treatments, and this difference in posttest results is referred to as the effect of the intervention or treatment [12] (Notoatmodjo, 2010).

The population in this study were all patients who had undergone surgery / surgery and had just come out of the operating room which would then be observed in the recovery room of the operating room at the Grandmed Lubuk Pakam Hospital. The sampling technique used in this study is Non Probability Sampling with Purposive Sampling.

Samples that meet the inclusion criteria and the researcher will be divided into two groups, namely the control group that will be treated with a warm blanket and the intervention group who are treated with a warm blanket and administering an intravenous fluid warmer / Blood Warmer that has been set automatically.

Each group respondent in this study is 26 respondents. After the data has been collected, statistical tests are used to determine differences in body temperature before and after being treated in each group using the Paired Sample T-test formula, while to determine the difference in body temperature between the control and intervention groups the Independent T-test formula is used with the help of SPSS t Confidence Level $\alpha \leq 0.05$.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

3 Results

Table 1. Frequency Distribution Based on gender in the Control Group and Intervention Group

Group	Gender	n	%
Control Group	Man	7	27
	Woman	19	73
	Total	**26**	**100**
Intervention Group	Man	12	46
	Woman	14	54
	Total	**26**	**100**

Source: The results of the study are based on the sex of the respondent in the hospital. Grandmed Lubuk Pakam Year 2018

Based on table 1. it can be seen that the number of respondents based on gender in the control group are: 7 people (27%), and 19 women (73%). While the number of respondents in the intervention group were: 12 men (46%), and 14 people (54%).

Table 2. Frequency Distribution and Percentage of Postoperative Patients by Age in the Control and Intervention Groups

Group	Age	n	%
Control Group	Teeneger (12-25)	18	69
	Adult (26-45)	6	23
	Elderly (46-65)	2	8
	Total	**26**	**100**
Intervention Group	Teeneger (12-25)	12	46
	Adult (26-45)	11	42
	Elderly (46-65)	3	12
	Total	**26**	**100**

Based on table 4.2 it can be seen that the number of respondents based on age in the control group are: Teenagers (12-25 years) as many as 18 people (69%), Adults (26-45 years) as many as 6 people (23%), Elderly (46-65 years) as many as 2 people (8%). While the number of respondents in the intervention group are: Teenagers (12-25 years) as many as 12 people (46%), Adults (26-45 years) as many as 11 people (42%), Elderly (46-65 years) as many as 3 people (12 %).

Table 3. Frequency Distribution of Postoperative Patients Based on Body Temperature in the Control and Intervention Groups (n= 26)

Group	Temperature	Minimal	Maximal	Mean	SD
Control group	Before	34.2	35.7	35.13	0 .3222
	After	35.3	36.3	35.66	0.2545
Intervensi group	Before	34.0	35.6	35.04	0.3301
	After	35.4	36.9	36.69	0.2911

Source: Research results based on respondent's body temperature at the hospital. Grandmed Lubuk Pakam in 2018

Based on table 4.3 it can be seen that the lowest body temperature value before treatment in the control group w s 34.2˚C nd the highest body temper ture v lue w s 35.7˚C with the me n value being 35.13 and the Standard Deviation was 0.3222. While the lowest body temperature

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

v lue fter being tre ted in the control group w s 35.3˚C nd the highest body temperature value w s 36.3˚C with the me n v lue being 35.66 nd the St nd rd Devi tion w s 0.2545.

While the lowest body temperature before treatment in the intervention group was 34.0 ° C, and the highest body temperature value was 35.6 ° C, with the mean value being 35.04 and the Standard Deviation was 0.3301. While the lowest body temperature value after being treated in the intervention groupwas 35.4˚C nd the highestbody temper ture v lue w s 36.9˚C with the me n value being 36.69 and the Standard Deviation was 0.2911.

Table 4. Dependent Test Sample T-test for Calculating Body Temperature Difference Before and After Treatment in Control and Intervention Groups

Group	**Temperature**	***Dependent Sample T-test***		
		Mean	**Standard Deviasi**	***–Value***
ControlGroup	Pretest- Postest	.5346	.1648	.001
Intervention Group	Pretest- Postest	1.6654	.2667	.001

Based on the results of the analysis in table 4.10 using the Dependent Sample T-test shows that the difference in mean temperature measurements of body temperature before and after the control group is 0.5346 with a standard deviation of 0.1648. Statistical test results in the table above obtained p value = 0.001. Thus the p-V lue ≤ α (0.001 ≤ 0.05) me ns th t there is n effect of giving a warm blanket to the control group. Meanwhile, the difference in mean temperature measurement of body temperature before and after the intervention group was 1.6654 with a standard deviation of 0.2667. Statistical test results obtained p value = 0.001. Thus the p-v lue ≤ α (0.001 ≤ 0.05) it c n be concluded th t there is n effect of the dministr tion of intr venous fluid heating elements to increase the body temperature of hypothermia in post-surgical patients in the hospital. Grandmed Lubuk Pakam Year 2018.

Table 5. Independent Test T-test between Control and Intervention Groups

group	***Independent T-test***				
				Significant Level 95%	
	-Value	**Mean**	**SD**	***Lower***	***Upper***
Control-Intervention Group	.001	1.0269	.0758	1.1792	.8746

Based on the results of the analysis in table 4.6 shows that the difference in the average value between the control and intervention groups is 1.0269 with a standard deviation of 0.0758. The statistical test results obtained p value is 0.001, it can be concluded there is an effect of giving intravenous fluid warmers to the increase in body temperature of hypothermia in post-surgical patients

4 Discussion

a. Intravenous Fluid Warming Elements

Research conducted by Rini Minarsih in 2013 [13] with the title "The effectiveness of the administration of intravenous fluid warmers in reducing the symptoms of postoperative hypothermia". This research was conducted at Wava Husada Kepanjen Hospital Malang with a total sample of 18 people. Based on the results of the study after 60 minutes after treatment all patients (100%) body temperature became normal, meaning that the administration of intravenous fluid warmers was more effective in reducing postoperative hypothermic symptoms.

How to prevent hypothermia in postoperative patients include a warm recovery room with room temper ture 75˚F (24˚C) the use of low-flow systems or closed systems in critical patients or high-risk patients, the use of cloth blankets, the use of blood warmers for giving blood and warm crystalloid / colloid solutions or

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

blood fraction (Blood / infusion warmer), and blankets to warm the air convection system [14] (Muttaqin and Sari, 2009).

The results of the study obtained by researchers the average body temperature before treatment in the intervention group was 35.04 with a standard deviation of 0.3301, and the mean value after treatment was 36.69 with a standard deviation of 0.2911.

Based on the results of the study above, there was an increase in the mean body temperature between before and after treatment. This ispossible because there is a flow of temperature from warmed intravenous fluids using elements into the patient's body. In this treatment the patient receives 2 external temperature transfers using a warm blanket and internal flow through a warm infusion fluid using an intravenous fluid warmer element.

b. The increase in body temperature

The increase in body temperature in the control group that uses warm blankets is influenced by the process of radiation, convection and conduction. Radiation is the transfer of heat from an object's surface to another object's surface. A warm blanket allows heat transfer from the surface of the blanket to the cooler surface of the patient's body.

The results of a previous study conducted by Widyawati in 2013 entitled the effect of the treatment of giving warm blankets to the speed of return of normal body temperature in patients experiencing hypothermia after undergoing surgery with spinal anesthesia. This research was conducted on 50 respondents divided into 2 groups, each group totaling 25 respondents.

Group 1 uses warm blankets and group 2 uses thick blankets, the average time obtained in Group 1 (warm blankets) is 30 minutes. Whereas in Group 2 (Thick blankets) was 80 minutes, with the results p value = 0.000 ($p \leq 0.05$) which me ns th t there re signific nt differences between giving w rm bl nkets nd giving thick blankets to the speed of the return of normal body temperature in postoperative patients.

The handling of hypothermia according to Sabiston[15] (2011) divides based on the degree of hypothermia, namely: (1) at a temperature between 32 ° C to 35 ° C, a passive external installation method is used which is giving a warm blanket. (2) at a temperature of less than 32 ° C, 2 methods can be given namely ctive extern l he ting. By w y of bottle cont ining w rm w ter with temper ture of 40˚C nd administration of warm mattresses and an active internal heating method, by: giving warm intravenous fluids, warm gastric lavage, warm peritoneal lavage, warm colon lavage, warm mediastinium lavage and giving oxygen warm.

The results of the study obtained by researchers the average body temperature before treatment in the control group was 35.7 with a standard deviation of 0.3222. The mean value of body temperature after treatment was 35.66 with a standard deviation of 0.2545, then the difference in body temperature before and after treatment in the control group was 0.5346. While the mean temperature of the body temperature before treatment in the intervention group was 35.04 with a standard deviation of 0.3301. The mean value of body temperature after treatment was 36.69 with a standard deviation of 0.2911, then the difference before and after treatment in the intervention group was 1.6654. So that the difference in body temperature between the control and intervention groups is 1.0269.

Based on the results of the above study for the average value of body temperature in the control group that is the treatment using warm blankets in line with research conducted by Widyawati where within 30 minutes the respondent's body temperature became normal, and that obtained by researchers at 30 minutes of treatment the mean body temperature was 35.66 or less than normal (36.5). This might happen because the increase in body temperature is influenced by several factors including: Hormones, nutritional status, organ disorders, environment and age[16] (Tamsuri, 2012).

The results of the study of average body temperature between the control group and the intervention group contained a very significant difference of 1.0269. This might occur because the control group was only given external heating using a warm blanket, while the intervention group was given external heating using a warm blanket and internal using an intravenous fluid heating element. It was concluded that the use of an intravenous fluid warmer element was very influential in increasing the body temperature of hypothermia in post-surgical patients. The results of the study of the mean body temperature between the control group and the intervention group contained a very significant difference of 1.0269. This might occur because the control group was only given external heating using a warm blanket, while the intervention group was given external heating using a warm blanket and internal using an intravenous fluid heating element. It was concluded that the use of an intravenous fluid warmer element was very influential in increasing hypothermic body temperature in

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

postoperative patients.

c. Effects of Giving Intravenous Fluid Warming Elements on Increased Hypothermic Body Temperature in Post-Surgical Patients

Based on the results of the Dependent T-test, the difference in the average value of body temperature measurements before and after the intervention group was 1.6654 with a standard deviation of 0.2667. St tistic l test results obt ined p v lue = 0.001. Thus the p v lue ≤ α (0.001 ≤ 0.05) it c n be concluded that there is an influence of the administration of intravenous fluid heating elements to increase the body temperature of hypothermia in post-surgical patients. And the results of the Independent T-test show that the difference in the average value between the control and intervention groups is 1.0269 with a standard deviation of 0.0758. The st tistic l test results obt ined p v lue is 0.001 where the p v lue is sm ller th n the v lue of α = 0.05, it can be concluded that the hypothesis is accepted that there is an effect of giving intravenous fluid warmers to the increase in body temperature of hypothermia in post-surgical patients in the recovery room of the hospital operating room. Grandmed Lubuk Pakam Year 2018.

There are various studies that support this research, some of which were first conducted by Virgianti in 2014 [17] entitled "The effect of giving intravenous fluids with warm NaCl to the incidence of shivering in patients with Sectio Caesaria surgery in the operating room at Aisyiyah BojonegoroHospital", with a large sample size of 42 people. The results showed that the body temperature of respondents who were given warm IV fluids during post surgery was mostly 95.24% of the temperature normal and did not experience chills, that is, there was an influence of giving intravenous fluids with warm NaCl to the incidence of shivering in Postoperative Sectio Caesaria patients.

The second study was conducted by Eni in 2012 [18] with the title "The effect of abdominal cavity rinsing using warm 0.9% NaCl fluid on an increase in Post Sectio Caesaria body temperature in the operating room of RSUD Dr. Mohammad Soewandhie Surabaya ", with a sample of 42 respondents. From the results of the study there was an increase in postoperative body temperature where most of the 81% of respondents had normal temperature, meaning that there was a significant effect on flushing the abdominal cavity using warm NaCl liquid (37 ° C)) in the Operating Room of RSUD Dr. Mohamad Soewandhie Surabaya.

The third study was conducted by Rini Minarsih in 2013 [19] with the title "Effectiveness of the administration of intravenous fluid warmers in reducing postoperative hypothermia symptoms". This research was conducted at Wava Husada Kepanjen Hospital Malang with a total sample of 18 people. In this study the researchers made a Proportion value of 7.7% and based on the study after 60 minutes after treatment of all patients (100%) their body temperature became normal, meaning that the administration of intravenous fluid warmers wasmore effective in reducing postoperative hypothermic symptoms.

Several studies have proven the negative effects of hypothermia that are not treated immediately to patients, including the risk of increased bleeding, myocardial ischemia, recovery after a long time of anesthesia, impaired wound healing, and increased risk of infection. Postoperative hypothermia can be treated effectively and convincingly by giving warm intravenous fluids through an intravenous fluid warmer element. With the use of this tool, patients undergoing surgery receive a supply of fluids that is in accordance with the core temperature and flows throughout the body so that it is effective in increasing the body temperature of the patient's postoperative hypothermia.

5 Conclusion

Based on the results of statistical tests and discussions it can be concluded that characteristics of respondents obtained that the age of the majority of the adolescent category (12-25 years). There is an effect of giving intravenous fluid warmers to the increase in body temperature of hypothermia there is an effect of giving intravenous fluid warmers to the increase in body temperature of hypothermia. Difference in mean body temperature between the control and intervention groups was 1.0269 (SD = 0.0758). Nursing services in post-surgical patients cann use the element warmer of intravenous fluid to increase body temperature on post-surgery patients in Recovery Room.

6 References

Andriyani & Setiyani, W. 2013. *Pengaruh Tindakan Perawatan Pemberian Selimut HangatTerahadap Kecepatan Kembalinya Suhu Tubuh Normal pada Pasien yang Mengalami Hipotermi Setelah*

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Menjalani Operasi dengan Anestesi Spinal. Palembang. Sumber (online) http://www.assanadiyah.ac.id, diunduh pada November 2016.

Anggita, M., Kadarsih, R. & Oktalianzah, E. 2014. *Angka Kejadian Hipotermia dan Lama Perawatan di Ruang Pemulihan pada Pasien Geriatri Pascaoperasi Elektif Bulan Oktober 2011-Maret 2012 di Rumah Sakit Dr. Hasan Sadikin Bandung*. Bandung. Jurnal Anastesi Perioperatif Vol. 2, No. 1. Diunduh pada November 2016

Arikunto, Suharsini. 2010. *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta

Brunner & Suddarth. 2010. *Buku Ajar Keperawatan Medikal Bedah, Edisi 10, Volume 4*. Jakarta: EGC

Depkes RI, 2009. *Data Tabulasi Nasional Departemen Kesehatan Republik Indonesia Bidang Pembedahan*. DEPKES RI. Jakarta

Eni, S., Sulistyowati, E., & Nur, F. 2012. *Pengaruh Pembilasan Cavum Abdomen menggunakan Cairan NaCl 0,9% Hangat Terhadap Peningkatan Suhu Tubuh Post Sectio Casaria di Kamar Operasi RSUD Dr. Mohammad Soewandhie Surabaya*. Surakarta.

Hamdayani, D. 2017. *Hubungan Pengetahuan dan Sikap Perawat Dengan Pelaksanaan Pendidikan Kesehatan Tentang Informed Consent Pasien Pra Bedah Di RS X Tahun 2017.* Diunduh pada Januari 2018

Minarsih, R. 2013. *Efektifitas Pemberian Elemen Penghangat Cairan Intravena Dalam Menurunkan Gejala Hipotermi Pasca Bedah*. Malang. Sumber (online) http://download.portalgaruda.org/article.php, diunduh pada November 2016

Notoatmodjo, Soekidjo. 2010. *Metode Penelitian Kesehatan*. Jakarta: Rineka Cipta

Potter, P. A., & Perry, A. G. 2010. *Buku Ajar Fundamental Keperawatan: Konsep, Proses, dan Praktik,* Volume 2. Edisi 4. Jakarta: EGC

Rustianawati. 2013. *Keperawatan Perioperatif.*(http://www.stikeskusumahusada.ac.id/digilib/download.php?id=1577. Diunduh pada November 2016

Virgianti, F. Nur, Hananto, S. Ponco. 2014. *Pengaruh Pemberian Cairan Infus dengan NaCl Hangat Terhadap Kejadian Menggigil pada Pasien Operasi Sectio Caesaria di Kamar Operasi Rumah Sakit Aisyiyah Bojonegoro*. Lamongan. Jurnal Surya. Vol.04, No.XX. Diunduh pada November 2016

Widyawati. 2013. *Pengaruh Tindakan Perawatan Pemberian Selimut Hangat Terhadap Kecepatan Kembalinya Suhu Tubuh Normal pada Pasien yang Mengalami Hipotermi Setelah Menjalani Operasi dengan Anastesi Spinal*. Palembang. Diunduh pada April 2017

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The Effectiveness of The Use of *Pelawan* Leaf Boiled Water (Tristaniopsis Merguensis (Griff.) as a Traditional Medicine for Reducing Blood Cholesterol

Muhammad Seto Sudirman[1], Kartika[2], Rachmawati Felani Djuria[3], Auronita Pratiwi[4]
{ muhamadseto@gmail.com[1] }

[1]Pangkalpinang health Polytechnic
[2]Central Development and Application Traditional Treatment (SP3T) Bangka Belitung Province

Abstract. *Pelawan* leaf (*TristaniopsisMerguensis Griff.*) is a medicinal plant used to reduce blood cholesterol levels used by Malays ethnic in the Bangka Belitung Islands province. This study aimed to find the effectiveness of the *Pelawan* leaf as a traditional medicine for reducing blood cholesterol and its safeness for liver and kidneys among Malays ethnic in Bangka Belitung Islands Province. This is a pre-post test design clinical observation study that was conducted from August to December 2018, with 30 subjects. There is only one group, and the subjects were chosen by non-random sampling. The inclusion criteria: hypercholesterolemia patients with total cholesterol levels> 200 mg/dl and <350mg/dl. And exclusion criteria: people with dyslipidemia with complications. The Shapiro Wilk test is used in bivariate analysis. The mean total blood cholesterol level showed a decrease in effect and a significant difference between the pre-test post-test administration of the *Pelawan* leaf boiled water. The subjects had side effects of impaired liver function indicated by an increase in the mean value of SGOT. The subjects affected kidney function disorders, which indicated an increase in the average creatinine and urea values, but still less than twice.

Keywords: blood cholesterol, clinical observation, *Pelawan* Leaf (*TristaniopsisMerguensis Griff.*).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

1 Introduction

Research on traditional Indonesian medicinal herbs used in some certain ethnic groups is still limited and now tends to be abandoned by society and it is even endangered. The rational treatment has caused people to turn away from that culture of therapy. Traditional medicine is widely used by the community in medication; health professionals are generally still reluctant to prescribe or use it. The main reason for the reluctance of health practitioners to prescribe or use traditional medicines is the lack of scientific evidence regarding the efficacy and safety of traditional medicines in humans [1].

Traditional medicines are different from the condition in several neighboring countries such as China, Korea, and India, that integrate traditional methods and treatments within the formal health service system. The main reason for the reluctance of health professionals to prescribe or use traditional medicine is the lack of scientific evidence regarding the efficacy and safety of traditional medicines in humans. Indonesian traditional medicine is a national cultural heritage that needs to be preserved, researched, and developed. Research on traditional Indonesian medicine includes research on single herbal medicines and in the form of herbs. The types of research that have been carried out so far include research on medicinal plants, analysis of chemical content, toxicity, pharmacodynamics, formulations, and clinical trials [2].

In the last few years, people all been surprised when new phytopharmaca drugs were imported with raw materials found in Indonesia. Conventional medicine that uses chemical molecules as drugs is an attempt to utilize the molecular chemical energy as a healer by or by not changing chemical energy into other forms of energy. There are still many Indonesian health workers who do not believe in traditional medicine because of the limited knowledge of those who discuss the matter. The world health law in each country even tends to inhibit the development of traditional medicine because the law can only enact if the clinical evidence of medicine and traditional medicine has data from scientific studies. If it does not, it is not recognized as a health service even though there is a lot of clinical evidence. If all scientists understand the philosophy of science, it would not be so, especially if they understand well about the biochemical relations of living things, especially humans, in relation to psychology and sociology [3].

The development of conventional medicine is accompanied by the development of new types of diseases as a result of increasing environmental pollution which includes chemical, physical, biological, social, economic and cultural pollution to the fault of health services. In such a situation, the non-health community seeks its own ancestral experiences of medicine and medication, and also utilizes the advances in pharmacy and chemistry to uncover hidden veils in natural chemical molecules. Finally, >70% of the world community is currently using natural medicine to overcome health problems because of many new diseases that cannot be cured with conventional medicine, especially degenerative diseases. Conventional health workers began to admit and even use natural remedies and medicines that have been practiced by our ancestors. The scientific and traditional medicine policy is a good step, but it must be limited by the depth of scholarship that people want to know because even conventional workers are not knowledgeable enough to explain the clinical facts produced [4].

The Center for the Development and Application Of Traditional Medicine (*Sentra Pengembangan dan Penerapan Pengobatan Tradisional*, SP3T) formulated by the Ministry of Health is a good sign to make the traditional medicine and medication program be scientific. One example of the mistake of health workers in the paradigm of herbal medicine is that many

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

of them do not believe that they even accuse the traditional healers who use herbal medicines to be deceiving merely because they do not have scientific test data. Clinical testing is a drug test that has gone through an in-vitro test, in vivo test (preclinical), and clinical observation so that scientific knowledge is guaranteed. One crucial aspect of clinical data in clinical pharmacology of drugs (pharmacokinetics and pharmacodynamics) while the data can only be obtained if the drug being tested is a pure molecule or at least the type of molecule is known, whereas herbal drugs are preparations containing a million unknown chemical molecules acting as a drug marker, while rational drugs are chemical molecules synthesized by human so that they can easily be studied scientifically.

Communities in Bangka Belitung Islands Province are still using ancestral medicinal plants, especially those in rural areas that are still far from the reach of health facilities services organized by the government as promotive, preventive, and curative efforts in overcoming health problems.

One of the plants used is *Pelawan* leaves (*Tristaniopsis merguensis Griff.*) as a traditional medicine to reduce blood cholesterol in people with Malay ethnicity in the Bangka Belitung Islands Province. Scientific evidence of quality, safety, and efficacy is needed to achieve the goal of using traditional medicines for public health [5].

Regarding the above problems, the SP3T in Bangka Belitung Islands Province considers that it is important to conduct research and studies on the safety, quality, and efficacy of medicinal plants The objectives of this study have provided benefits to the public health for generations.

2 Method

This study is a clinical observation study with pre-post test design on traditional health practitioners for people with Malay ethnicity in Tempilang Village, Tempilang District, West Bangka Regency, Bangka Belitung Islands Province. The research was conducted at a health center for Malay traditional empirical health service in Tempilang Village, Tempilang District, West Bangka Regency, Bangka Belitung Islands Province. The research was conducted from August to December 2018. This study is a clinical observation study on traditional herbal health care services.

Selection of the Subjects

The subjects of this clinical observation were hypercholesterolemic patients with total cholesterol levels>200 mg/dl and <350mg/dl. The samples were 30 subjects. The population was hypercholesterolemic disorder patients who were treated with Tabib empirical concoction in the health center and given *Pelawan* leaf boiled water in Tempilang District, West Bangka Regency, Bangka Belitung Islands Province. Samples were patients who came for treatment with the complication during data collection. The sample size is chosen for a minimum of 30 volunteers.

Procedures

The independent variable is hypercholesterolemic patients using a mixture of *Pelawan* leaves boiled water according to the manner and habits of the Hattra practitioners. The dependent variable is a decrease in blood cholesterol levels, side effects: clinical symptoms, hematology, SGOT, SGPT, urea, and creatinine. **Inclusion Criterion:** Hypercholesterolemic

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

sufferers with total cholesterol levels>200 mg/dl and <350mg/dl, aged more than 17 years and less than 60 years, not using chemical drugs. **Exclusion Criterion:** Dislipidemia sufferers with complications from arteriosclerosis, coronary heart disease, stroke and other comorbidities, pregnancy, and those who were undergoing conventional treatment, were unwilling to take part in the research and were willing to follow the research procedures by signing informed consent. The funding for tools, materials, and laboratory checks came from the DPA budget funds for the development of traditional health services for the 2018 budget.

Data Analysis

The data analysis in this study employed the Paired Sample T-Test after the normality of the data was tested with the Shapiro Wilk Test and if the data was not normally distributed, the Wilcoxon test was used [6].

3 Result

The result of total cholesterol, SGOT, SGPT, Creatinin and Ureum at the pre & post administration of medication with *Pelawan* leaf boiled water for 14 days and analysis.

Table 1. Description of the Paired Samples test

	Indicator	Mean	n	Std. Deviation	Std. Error Mean
Pair 1	pre_kolesterol	280.0667	30	36.30421	6.62821
	post_kolesterol	261.5333	30	28.98244	5.29144

Table 2. Description of the Paired Samples test: The measurement of the mean total cholesterol level in the blood at the pre & post administration of medication with *Pelawan* leaf boiled water for 14 days

		Paired Differences					t	Df	Sig. (2-tailed)
	Indikator	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pre_kolesterol - post_kolesterol	1.85333E1	34.40001	6.28055	5.68816	31.37851	2.951	29	.006

Table 3. The description of the Paired Samples Correlations test measuring the average total blood cholesterol level in the subjects before and after the subjects were given *Pelawan* leaf boiled water for 14 days

Characters	n	Correlation	Sig.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Pair 1	pre_kolesterol & post_kolesterol	30	.463	.010

Based on the Paired Samples Statistics test analysis, the average measurement of total cholesterol levels in the study subjects given *Pelawan* leaves boiled water for 14 days showed a decrease, which was 280.0667 mg/dl in pre-test and 261.5333 mg/dl in post-test. *Pelawan* leaves contain flavonoid and saponins which work as antioxidants and have the ability to reduce blood cholesterol levels.

Based on the Paired Samples Statistics test analysis, the average measurement of total cholesterol levels in the study subjects given *Pelawan* leaves boiled water for 14 days showed a decrease, which was 280.0667 mg/dl in pre-test and 261.5333 mg/dl in post-test. *Pelawan* leaves contain flavonoid and saponins which work as antioxidants and have the ability to reduce blood cholesterol levels.

Based on the Paired Samples Statistics test analysis, the mean of blood total cholesterol levels in the subjects in pre-test and post-test of treatment with *Pelawan* leaf boiled water showed a value of t_{obs}2.951 with sig 0.006. The sig>0.005 showed that there was a significant difference between the pre-test and post-test of treatment with *Pelawan* leaf boiled water with a confidence level of 95% and an error rate of 5%.

Based on the Paired Samples Correlations analysis, the correlation between the results of the measurement of the average blood total cholesterol levels in the subjects between the pre-test and post-test of treatment with *Pelawan* leaf boiled water was 0.463 with sig of 0.010. It indicated that there was a correlation between the mean in pre-test and post-test of treatment with *Pelawan* leaf boiled water and there was also a significant decrease in difference.

Table 4. Description of Wilcoxon Signed Rank Test on the measurement of the means of SGPT, creatinine, and urea values in subjects before and after treatment with *Pelawan* leaf boiled water for 14 days

Indicators	Before treatment (Pre-Test)		After treatment (Post-Test)		Z	p-value
	Mean	**SD**	***Mean***	**SD**		
SGOT (mg/dl)	29,7767	7,11892	30,7767	7,11892	-5,477	0,0000
SGPT (mg/dl)	32,7767	7,11892	31,7767	7,11892	-5.477	0,0000
Kreatinin(mg/dl)	0,4300	0,12077	0,5300	0,12077	-5,477	0,0000
Ureum (mg/dl)	14,25	1,85468	15,15	1,85468	-5,477	0,0000

Based on the analysis of the Wilcoxon Signed Rank Test, P<0.05, which showed a significant difference in the value of SGOT and SGPT between the pre-test and post-test of treatment with *Pelawan* leaf boiled water. It shows that there was an increase in the mean value of SGOT and a decrease in SGPT between the pre-test and post-test of treatment with *Pelawan* leaf boiled water with a significant difference. Giving *Pelawan* leaf boiled water for 14 days had side effects on liver function disorders which were shown in the increase of the mean value of SGOT.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The results of the analysis of the Wilcoxon Signed Rank Test were P<0.05, which showed a significant difference in creatinine and urea levels means between the pre-test and post-test of treatment with *Pelawan* leaf boiled water. *Pelawan* leaf boiled water indicates that there was an increase in creatinine and urea levels means between the pre-test and post-test of treatment with *Pelawan* leaf boiled water with a significant difference. Giving *Pelawan* leaf boiled water for 14 days had side effects on kidney dysfunction which indicated by an increase in creatinine and urea levels means.

Steroids in large quantities and in a long time can reduce liver function, kidney, visual sensory disturbances, and can increase blood pressure. According to the research, the following active ingredients can be found in *Pelawan* plant's leaves and bark: flavonoids, tannins, saponins, steroids, triterpenoids. *Pelawan* leaves contain steroids which when used in high doses and long-term, have side effects of reducing liver and kidney function [7].

4 Conclusion

Based on the observational analysis, the mean of total blood cholesterol level showed a decrease in effect and there was a significant difference between the pre-test and post-test of treatment with *Pelawan* leaf boiled water, Subjects given *Pelawan* leaf boiled water for 14 days experienced side effects of liver function disorders as indicated by an increase in the mean value of SGOT, According to the results of the mean examination of SGPT, there was no increase in value and there was a decrease in the post-test of subjects given *Pelawan* leaf boiled water and The treatment by giving given *Pelawan* leaf boiled water for 14 days to the subjects had an effect on kidney function disorders which showed an increase in the mean of creatinine and urea values, but still less than twice.

References

[1] Natural Heart, Lung, and Blood Institute, Hight Blood Cholesterol; What You Need To Know. Natural Institute of Health. June 2005 (accessed June 2011)

[2] Akbarini, D. Pohon *Pelawan* (Tristaniopsismerguensis): Spesies kunci keberlanjutan Taman Keanekaragaman Hayati Namang-Bangka Tengah. Al-Kauniyah Jurnal Biologi 9(1):66–73 (2016)

[3]Carlson and Kacman. Work Faily Conflict in the Organization: Do life role Values make difference. Journal of Manageent Vol 26. No 5, pp1031-1054 (2000)

[4] Anwar. Pendidikan Kecakapan Hidup (Life Skills Education). Alfabeta. Bandung. (2004)

[5] Asmaliyah. Kandungan Fitokimia Tumbuhan Obat Di Pesisir dan Lahan Basah Serta Potensinya Sebagai Pestisida Nabati, Balai Peneltitian dan Pengembangan Lingkungan Hidup dan Kehutanan Palemban. (2017)

[6] Rookes, P., and Wilson, J. Perception: Theory, development, and organisation. London and Pliladelphia: Routledge. (2000)

[7] Gayton A. C and J. E Hall. Buku Ajar Fisiologi Kedokteran. Alih Bahasa dr. Irawati Setyawan, dr. LMA Ken Ariata dan dr. Alex Santoso. Jakarta. EGC. (2007)

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Comparison “Piosokie” Culture on Involution of Uterus among Postpartum Women at Tanjung Gunung Village, Central Bangka Regency of Bangka Belitung Islands Province

Neng Ayu Rosita
{ n.ayurosita@gmail.com }

Health Polytechnics, Ministry of Health Pangkalpinang

Abstract. Piosokie Culture is a traditional method of Buton tribe in postpartum who lived in Bangka Belitung Islands. ‒Piosokie‖ is described as a stone placed on the postpartum woman’s abdomen that believed can accelerate the recovery process of the puerperium. The study aimed to assess whether there was an influence of Piosokie culture on the involution of uterus among postpartum women. This study was quantitative research designs with experimental types to measure the effect of Piosokie on uterine involution. Samples were postpartum women at Tanjung Gunung Village, Central Bangka Regency of Bangka Belitung Islands Province who divided into two groups, experimental and control groups. The experimental received stone compress in their abdomen during the postpartum period, while the control group received only the routine postnatal care. On the 14th day of the puerperium, the decreased of fundal height and lochia expenditure would be compared. The data were analyzed using the Mann Whitney Test. The result showed that there was a significant difference between experimental groups and a control group in the deceased height of their uterine fundus (p=0,001) and lochia expenditure (p=000). Postpartum women who received stone abdominal compresses have a faster decrease in fundal height and lochia expenditure. It means Piosokie culture could accelerate the time of decrease in fundal height and lochia expenditure. It also showed that there was a traditional culture that turns out to have a good effect on health and can be safely used in society.

Keywords: Piosokie, postpartum women, uterine involution.

1 Introduction

Maternal Mortality Rate (MMR) is one indicator to see the degree of women's health. The maternal mortality rate is also one of the targets set in goal number 3 of the SDGs, namely ensuring a healthy life and promoting well-being for all people at all ages. One target of SDGs in the health sector is reducing the maternal mortality ratio to less than 70 per 100,000 live births by

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

2030 (Indonesian SDGs, 2016). The results of the Indonesian Demographic and Health Survey (IDHS) in 2012 showed a significant increase in MMR of 359, which was initially 228 per 100,000 live births in 2007. Indonesia's MMR rates are even greater than in poor countries in Asia such as Timor Leste, Myanmar, Bangladesh, and Cambodia (Saputra, 2013). The maternal mortality rate (MMR) in Central Bangka district showed a decrease in 2011 of 172 per 100,000 live births (6 maternal deaths out of 3,480 live births). This figure is lower than the MMR in 2010 which was 209 per 100,000 (7 maternal deaths) (Health Profile of Central Bangka, 2011). However, this number is still very far from the target determined by the SDGs.

Current causes maternal mortality rate are bleeding 28%, the high cause of maternal mortality rate is due to bleeding, bleeding can occur in the third stage of labor, stage IV and in the puerperium, the puerperium starts from 1 hour after the birth of the placenta until 42 days, during the puerperium the reproductive organs return to the state before pregnancy, during the puerperal physiological changes occur in the uterus if the change goes well then marked by involution of the physiological uterus, but if there is interference subinvolution can occur which can cause bleeding, the most common cause of postpartum hemorrhage is 50-60% due to no uterine contractions.

The postpartum period for mothers after childbirth serves to restore the reproductive function to the state before pregnancy, so postpartum care must be done properly by the postpartum mother, ie starting from the postpartum hygiene self, rest, diet, family planning, breast care, which functions to be able to prepare for breastfeeding during childbirth, postpartum maternal psychology there is a change in the role of a woman so that a positive psychological adaptation is needed to be able to accept the state of being a mother.

Abstinence or suggestions based on culture are still enforced during the puerperium. This abstinence or suggestions are usually related to the process of restoring physical conditions. For example there are certain foods that should be consumed to increase breast milk, there are also certain foods that are prohibited because they are considered to be able to affect the health of the baby, massage the stomach which aims to return the uterus to its original position, insert ingredients such as leaves into the vagina with the intention of cleaning the blood and fluids that come out because of childbirth or give certain herbs to strengthen the body.

Piosokie is a culture of the Buton tribe—a tribe lives in the Bangka Belitung region, Indonesia—in the care of the puerperium by compressing warm stones on a mother's abdomen. Society believes that *Piosokie* can speed up the puerperium recovery by blood petrification. Whereas, heat affects blood vessel dilatation that increases blood circulation; physiologically, the body's response to heat is causing dilation blood vessels, decreases blood viscosity, decreases muscle tension, increases tissue metabolism, and increases capillary permeability (Asmadi dan Kep, 2008).

2 Method

This type of research is a quantitative study with a quasi experimental research design that is to find out "The influence of posokie culture with involution in postpartum mothers in Tanjung Gunung Village, Central Bangka Regency, Bangka Belitung Islands Province in 2017. The population in this study is all postpartum mothers in Tanjung Gunung Village Central Bangka

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Regency, Bangka Belitung Islands Province, 2017. The sample in this study was *total sampling*, all postpartum mothers from February to September 2017 in Tanjung Gunung Village, Central Bangka Regency. A total of 33 respondents divided into 2 groups: 17 respondents did piosokie culture and 16 respondents did not do posokie culture. data collection directly on the Respondents. Instrument in this study a questionnaire containing questions about the identity of the respondents, and observation sheets on piosokie culture and TFU and Lohea Examination to determine uterine involution. The way to take data is by interviewing and examining TFU and Lohea conducted observations starting from day 1 postpartum until day 14 post partum is done every day. Univariate analysis is carried out to describe the variables. Bivariate analysis is performed to see the relationship between the dependent variable with the independent using Test Independent T if the data is normally distributed, as an alternative to the Mann Whitney Test if the data is not normally distributed.

3 Result

Hypothesis of this study is Piosokie will disturb the involution of uterus on puerperium women. Hypothesis test in this study used the Mann Whitney test. Effects of warm stone compression on the postpartum abdomen on the height of fundus presented in Table 1.

Table1.The height of uterus between two puerperium mother groups

	Piosokie	n	Mean Rank	Sum of Ranks
Height of uterus	Yes	17	11.65	198.00
	No	16	22.69	363.00
	Total	33		

Table 2.Statistical test results on the difference in decreased uterine fundus height on two puerperium mother group.

	Height of Fundus Uterus does not palpable on day:
Mann-Whitney U	45.000
Wilcoxon W	198.000
Z	-3.356
Asymp. Sig. (2-tailed)	.001
Exact Sig. [2*(1-tailed Sig.)]	.001[b]

a. Grouping Variable: *Piosokie* culture
b. Not corrected for ties.

Based on Table 1 and 2, the results of the analysis of differences in the height of fundus uterus (HFU) reduction—among mothers who practiced *Piosokie*culture and those who did not—show a significant difference (p=0.001). As for the average, the reduction HFU in mothers who practiced *Piosokie* culture (11.65) was better than those who did not (22.69).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

The influence of *Piosokie* culture on lochia expenditure on postpartum mothers is presented in Table 3.

Table 3. Lochea expenditures on two puerperium mother groups.

	Piosokie	n	Mean Rank	Sum of Ranks
Lochia alba	Yes	17	9.79	166.50
	No	16	24.66	394.50
	Total	33		

Table 4. Statistical Test Results on Differences in LochiaExpenditure in two puerperium mother groups.

	LochiaType
Mann-Whitney U	13.500
Wilcoxon W	166.500
Z	-4.514
Asymp. Sig. (2-tailed)	.000
Exact Sig. [2*(1-tailed Sig.)]	.000[b]
a. Grouping Variable: *Piosokie* culture	
b. Not corrected for ties.	

Based on Table 3 and 4, lochea expenditure in puerperium mothers—who practice *Piosokie*and who did not—show a significant difference (p=0.000); mothers whom did *Piosokie* havea shorter lochia expenditure than those who did not (9.79 compared to 24.66).

4 Discussion

The influence of *Piosokie* on height of fundus uterine on postpartum mothers

Involution or contraction of the uterus is a process in which the uterus returns to pre-pregnancy conditions weighing about 60 grams. An indicator of uterine involution process is the height of fundus uterine (HFU). Uterine involution in postpartum mothers must go well because if the involution process does not go well can have adverse consequences for the puerperal mother such as uterine subinvolution that can cause bleeding(Ambarwati & Wulandari, 2008). Other province in Indonesia that have similar culture like piosokie is Aceh (Mariyati, 2018).

Besides, another indicator to determine the involution process is vaginal lochia secretion so that researchers make observations on decreasing HFU and lochia secretion in puerperal mothers(Ambarwati & Wulandari, 2008). The difference in HFU reduction in the groups that practiced *Piosokie* and the control group by Mann Whitney statistical tests.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

Statistical test yields p-value of 0.001 at alpha 5%, which means there was a significant difference in the decrease in the height of the fundus of the uterus between mothers who practiced *Piosokie*and those who did not. The average decrease in HFU among mothers who practiced *Piosokie* is 22.6. It means that the decrease in HFU is faster in mothers who practice *Piosokie*.

Researchers conducted a direct examination of HFU on postpartum mothers.The fastest decrease in HFU—which was on the 6th day of the 8th day to 10th day and 12th day—that mothers who did *Piosokie*were a decrease in mid-central HFU on the fifth and sixth day the decrease in HFU was two fingers on sympathy so that the 8thday of HFU was not palpated. Whereas, for mothers who did not perform abdominal *Piosokie*on day seven, the reduction of HFU and on day 9 decreased HFU 2 fingers over symphysis, so that HFU was not palpated on day 12. In one patient who did not do *Piosokie*culture, there was one respondent with a decrease in the old HFU,which is 20 days.

The fundus uteri areusually not palpated on the 14thday and return to the normal condition in the sixth week. The decrease in HFU is due to contractions, which further reduce blood supply to the uterus, thereby helping to reduce placental implantation scars and reduce bleeding. There are large blood vessels in the prior implantation of the placenta. The implantation wound will heal in six to eight weeks due to endometrial growth(Masa, 2009)

The influence of *Piosokie* on lochia expenditure on postpartum mothers

The removal of lochia is one indicator of the smooth process of involution.Lochiais the term for secretions from the uterus that come out through the vagina during the puerperium. Usually, on the 14thday,lochia should be white (alba)(Varney *et al.*, 2007).

The Mann Whitney statistical test performed to examine the significant difference in the expenditure of lochia for the two groups of puerperal mothers. The test yields p-value of 0.000 at 5% alpha, means that there was a significant difference in the expenditure of lochiabetween mothers who did a *Piosokie* on the abdomen with those who did not. The average result of lochiaexpenditure in mothers who compressed warm stones was 9.79, meaning the average lochiastops on the 10thday of postpartum. Meanwhile, the mothers who did not practice *Piosokie*obtained an average of 24.6. It can be concluded that the expenditure of lochiaquickly stops at mothers who practice *Piosokie.*

There is one respondent who has a puerperium infection, that is, a respondent who does not practice culture of *Piosokie*, respondent has an infection so that lochia expenditure continues until the 60thday and there are signs of infection.

Mothers who did *Piosokie*shows the lochia alba on the 8thday.Meanwhile,the lochia alba began to present on 12th day on the mothers who did not compress the warm stone. The researcher made a benchmark for lochia alba because it was the last phase from series of stages: lochia (1-3 days postpartum), lochiasanguinolent (3-7 days postpartum), lochia serosa (7-14 days postpartum), and lochia alba (above two weeks postpartum)(Suherni dan Rahmawati, 2009).

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC

5 Conclusion

This study concludes that there are significant differences in the process of uterine involution between mothers who did practicing compressing warm stones on the abdomen (*Piosokie* culture in Buton, Indonesia) and who did not. Postpartum women can apply this thecnic but with more attention burns that can be caused by the hot stone.

Referrences

Ambarwati & Wulandari, D., 2008. *Asuhan Kebidanan Nifas*. Jogjakarta: Mitra Cendikia.

Asmadi, N. dan Kep, S., 2008. *Konsep Dasar Keperawatan.* Jakarta : EGC.

Masa, S.S.A.K.P., 2009. Nifas. *Jakarta: Salemba Medika*.

Suherni, H.W. dan Rahmawati, A., 2009. Perawatan Masa Nifas. *Fitramaya, Yogyakarta*.

Varney, H., Kriebs, J.M. dan Gegor, C.L., 2007. Buku ajar asuhan kebidanan. *Jakarta: Egc*, hal.672–788.

Unauthenticated | Downloaded 05/14/20 07:16 AM UTC