**FACTORS ASSOCIATED WITH RECURRENT URINARY TRACT INFECTIONS (UTIs) AMONG PREGNANT MOTHERS AT**

**KALAGALA HEALTH CENTRE IV, LUWEERO**

**DISTRICT, UGANDA**

**By**

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| **NAME** | **ID** |
| SIWEMA JEREMIAH KAZABULA | 20/BNS/BU/R/0004 |

**BACHELOR DEGREE IN NURSING AND MIDWIFERY**

**FEB, 2023**

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| SIWEMA JEREMIAH KAZABULA | 20/BNS/BU/R/0004 |

**A Research Project Submitted to the School of Health Sciences in Partial Fulfillment for the Award of Degree in Nursing and Midwifery**

**of Bugema University**

**FEB, 2023**

**ACCEPTANCE SHEET**

This Research Project Entitled “**FACTORS ASSOCIATED WITH RECURRENT URINARY TRACT INFECTIONS (UTIs) AMONG PREGNANT MOTHERS AT KALAGALA HEALTH CENTRE IV, LUWEERO DISTRICT, UGANDA** " was Prepared by **SIWEMA JEREMIAH KAZABULA**, in Partial Fulfilment for the Award of Bachelor Science in Nursing is here by Accepted

Sign. ..............

DR. MICHAEL WOLWA

Supervisor

..................

Date signed

Accepted In Partial Fulfilment for the Award of Bachelor of Science in Nursing of Bugema University

Sign................

Madam Nakimule Jackline

Head, Department of Nursing and Midwifery

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Date signed

Dr. MICHAEL WOLWA

Dean, School of Health Sciences

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Date signed

**DECLERATION**

I **SIWEMA JEREMIAH KAZABULA**, hereby certify that this research on “**FACTORS ASSOCIATED WITH RECURRENT URINARY TRACT INFECTIONS (UTIs) AMONG PREGNANT MOTHERS AT KALAGALA HEALTH CENTRE IV, LUWEERO DISTRICT, UGANDA**” is my original work and has never been submitted to any university or higher institution of learning.

|  |  |  |
| --- | --- | --- |
| **NAME** | **Signature** | **Date Signed** |
| Siwema Jeremiah Kazabula | …………………….. | …………………… |

**DEDICATION**

I **SIWEMA JEREMIAH KAZABULA** dedicate this research on “**FACTORS ASSOCIATED WITH RECURRENT URINARY TRACT INFECTIONS (UTIs) AMONG PREGNANT MOTHERS AT KALAGALA HEALTH CENTRE IV, LUWEERO DISTRICT, UGANDA**” to my parents Mr. Jeremiah Kazabula, and Mrs. Mariam Charles, Brother Leonard Kazabula, sisters Ziada Kazabula, and friends and relatives for their endless support throughout the research and educational sessions.

**ACKNOWLEGEMENT**

I **SIWEMA JEREMIAH KAZABULA** want to thank the Almighty God with praises and honor for granting me the gift of life and for continuously guiding me in this academic journey involving research up to this time. I also extend my sincere appreciation to the school of health sciences for their endless support. And in a very special way my sincere appreciation goes to my motivating supervisor, the Dean of Health Science Dr. Michael Wolwa, and Head of Department Madam Jackline Nakimuli and all the staffs’ members in the school of Health Sciences and Bugema university at large.

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**ABSTRACT**

Due to the increasing cases of UTI among pregnant mothers, it was vital to carry out this study and investigate “Factors Associated with Recurrent Urinary Tract Infections (UTIs) among Pregnant Mothers at Kalagala Health Centre Iv, Luweero District, Uganda.” Objectives included; to find out the prevalence of recurrent of UTIS among pregnant mothers, to establish factors associated with recurrent UTIS among pregnant mothers, and to determine the relationship between associated factors & UTIS among pregnant mothers attending Kalagala Health Centre 1V. Both descriptive and correlational research designs were used. Data was gathered randomly from 79 respondents with a self-administered questionnaire.

Objective one results indicate that UTI prevalence among pregnant women in Kalagala Health Centre 1V, Luweero District, Uganda was at 22.8%. However, out of the 18 infected pregnant mothers, 27.8% of them experienced 2-3 prevalence of UTI recurrent and 11.1% experiencing 3 and above prevalence of recurrent UTI in Kalagala Health Centre 1V, Luweero District, Uganda. Objective two results show that gravidity/parity is a factor associated with recurrent UTIS (Aggr Mean=2.11, Std. D=0.748). On the other hand, results show that gestation age or trimester is a strong factor associated with recurrent UTIS among pregnant mothers (Aggr Mean=2.83, Std. D=0.770). In addition, results shows that level of income is a factor associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (Aggr Mean=2.07, Std. D=0.714). Objective three results show that there is no significant relationship between parity and recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (correlational coefficient r=0.063, P value>Alpha 0.01). In addition, findings shows that there is a significant relationship between gestation age or trimester and recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (correlational coefficient r=0.260\*, P value 0.021<Alpha 0.05). Similarly, findings shows that there is a significant relationship between income level and recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (correlational coefficient r=0.190\*\*, P value 0.04<Alpha 0.01).

It was recommended that; Kalagala Health Centre 1V and other health care facilities should offer UTI screening to all pregnant mothers for free. Each health facility in the study location should set up a laboratory to carry out necessary tests including that of UTI to pregnant mothers. Pregnant mothers should be very careful in their pregnancy gestation period and more especially in their 3rd and 4th trimesters by ensuring that their washrooms are cleaned and stay clean all the time. Pregnant mothers from poor families should receive medical services to screen, treat and manage UTI for free all the time.

**CHAPTER ONE**

# **INTRODUCTION**

# **Background of the Study**

Globally, urinary tract infections and its associated problems are the cause of nearly 150 million deaths per year. The disease can progress in 40-50% of women (Totsika et al., 2012). The recurrent of urinary tract infections in pregnancy ranges from 13-33%, with asymptomatic bacteriuria occurring in 2–10%. Asymptomatic bacteriuria is now recognized entity in the range of urinary tract infections (Agersewet al., 2012). Asymptomatic urinary tract infections, is separation of a stated quantity of bacteria in a suitably collected urine sample obtained from a person with no symptoms or signs of urinary tract infections (Nicolle et al., 2015).

Urinary tract infections in pregnancy are among the commonest health problems globally, particularly in low income Asian countries (Delzell, 2014). The financial burden of urinary tract infections in adult females is noteworthy. The health care costs associated with urinary tract infections in terms of morbidity, number of bed occupied, fewer staffs and resource are also great and include considerable financial constraints to pregnant women (Griebling, 2011).

In Sub-Sahara Africa, Urinary tract infections (UTIS) is the most common disorder caused by bacterial agents in pregnancy, which can lead to important complications in newborn of such mothers in case of inappropriate diagnosis and treatment. UTISs are the most common bacterial infections of pregnancy. UTIS is a major health problem, it has been reported among 20% of the pregnant women and it is the most common cause of admission in obstetrical wards (Bacak et al., 2005). Symptomatic and asymptomatic bacteriuria has been reported among 17.9% and 13.0% pregnant women, respectively (Masinde et al., 2009).

In East Africa, many pregnant women are affected by UTIS. For instance, according to studies done in Tanzania, the recurrent of urinary tract infections among pregnant women was 15.5% (Masinde et al., 2009) and 13.3% in Uganda (Andabati and Byomugisha, 2010). Similar studies done in Sudan revealed the recurrent to be at14 % (Hamdan et al., 2011).

# **Statement of the Problem**

The recurrent level of UTIS among pregnant women is high in the world, continent of Africa, East African Region, Uganda as a nation, but it is yet to be researched and established in Kalagala Health Center IV. For instance, globally, recurrent of urinary tract infections in pregnancy is 1.9-9.5%. East Africa accounts for 13 % and Uganda has 13.3% (Andabati and Byamugisha, 2010), whereby the increase in UTIS recurrent in Uganda is associated with unhygienic washrooms, sharing of wash rooms, poor personal hygiene and many other associated factors (Nicolle et al., 2010). According to WHO (2021) and Kerure et al., (2013) urinary tract infections may lead to kidney injury, high blood pressure in pregnancy among others. The reasonably high recurrent of urinary tract infections in pregnancy and its consequences on women and on their pregnancies prompted Uganda Ministry of Health to include screening for and treatment of urinary tract infections in pregnancy in the standard obstetrics (MOH, 2010). With the above statistics, urinary tract infections poses a major health risk among pregnant women, hence it was vital to carry out this study and establish risk factors associated with recurrent of UTIS among pregnant mothers in Kalagala Health Centre 1V.

# **Research Questions**

1. What is the prevalence of recurrent of UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda?
2. What are the factors associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda?
3. What is the relationship between associated factors & UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda?

# **General Objective**

This study sought to establish risk factors associated with recurrent of UTIS among pregnant mothers in Kalagala Health Centre 1V.

# **Specific Objectives**

1. To find out the prevalence of recurrent of UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda.
2. To establish factors associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda.
3. To determine the relationship between associated factors & UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda.

# **Scope of the Study**

**Geographical Scope:** This study was carried out in Kalagala Health Centre 1V which is located within Kalagala Sub-County, Luweero District, Uganda.

**Content Scope**: This study sought to address and establish factors contributing or associated with recurrent of UTIS among pregnant mothers in Kalagala Health Centre 1V.

**Time Scope:** This study considered a period of 5 months which is from August 2022 to December 2022.

# **Significance of the Study**

**To Pregnant Mothers:** The results of the study may inform pregnant mothers associated or Contributing to recurrent of UTIS and hence come up with measures to ensure that such factors are addressed and the recurrent level is minimized or eliminated.

**To Researcher:** The study results may provide baseline data about the knowledge and the attitude of pregnant mothers towards UTIS is eliminated. Such information will empower the researcher with knowledge and skills towards addressing more researchable issues in future.

**To Policymakers:** Findings of this study may be presented to the health authorities who will call upon the need for policies to diagnose and treatment of UTIS among pregnant mothers. The study results may set a basis and highlight areas for the hospital to establish policies aimed at increasing the level of diagnosis and treatment of UTIS.

# **Theoretical Framework**

This study on factors contributing to UTIS infection among pregnant women will be based on the healthbelief model by Irwin et al., (1950). The model states that; people seek medical attention only if they have an idea of the danger of a given illness. It means that consultation is triggered by the perceived threat to health, like severity; the degree to which the patient believes a consultation will be effective in decreasing the threat. Based on this study, it is evident that UTIS is a common problem among pregnant women but it is not evident on which factors are associared to UTIS among pregnant women in Kalagal Health Centre IV, which therefore, makes this study base the study on this theory in order to give proven facts regarding factors associated with UTIS among pregnant women in the study area.

# **Conceptual Framework**

The conceptual framework explains the relationship between the independent variable, and dependent variable (Figure 1). The study focused on factors Contributing or associated with recurrent of UTIS among pregnant mothers in Kalagala Health Centre 1V. Risk factors such as age, occupation, level of education, socioeconomic status, gravidity, parity, gestational age, and genetic factors are thought to influence recurrent of urinary tract infections. These were considered under independent variables.

**Independent Variables Dependent Variables**

**Factors Contributing (Associated) to Recurrent of UTIs;**

**Demographic factors**

** Age**

** Education level**

** Occupation**

**Obstetric factors**

** Gravidity/ Parity**

** Gestation age/Trimester**

**Socio-economic factors**

** Level of income**

Recurrent of UTIs

* Yes (2 or more)
* No

Figure 1: Conceptual Framework

# **Operational Definitions of terms**

**Recurrent of UTIS:** In this study, it referred to occurrence of UTIS among pregnant mothers attending Kalagala Health Centre IV for more than 1 time or suffering from UTIS for 2 and above times.

**UTIS:** This referred to both microbial colonization of the urine and tissue invasion of any structure of the urinary tract.

**CHAPTER TWO**

# **LITERATURE REVIEW**

# **Introduction**

This chapter contained reviewed literature on factors associated with UTIS among pregnant women. Source of the literature was journals, articles and reports. Aim is to identify the study gaps.

# **Urinary tract infections (UTIS)**

Urinary tract infections refers to both microbial colonization of the urine and tissue invasion of any structure of the urinary tract. Bacteria are most commonly responsible although yeast and viruses may also be involved. Urinary tract infections represent the most common bacterial infection in pregnancy (Harvey, 2009). Expectant women are at a greater risk for urinary tract infections, beginning in week 6 and peaking during weeks 22 to 24 (Agersewet al., 2012). This is due to a number of structural and physiological factors, with the occurrence of infection of the kidney increasing in the third trimester of pregnancy. The recurrent is constant and most of the recent studies, in developing and developed countries, report similar rates (Schnarr and Smaill, 2008).

# **Factors Contributing/Associated with UTIS Recurrent**

# **Demographic Factors in terms of Age and Education Level**

Majority of urinary tract infections among pregnant women is well-known in age group 26-30 years, followed by 21-25, and 31-35years. The youngest among those studied was 18 years and oldest 45 years (Care et al., 2016). Parallel outcomes were obtained in a study conducted by Kasinathan et al., (2014) from Pondicherry, with maximum subjects with urinary tract infections in the age group of 26-30 years (Bose and Pulikkottil, 2016). Turpin et al (2011) found that UTIS was more prevalent in older age group. This can be explained by decreased level of sex hormones in the aging process. Apart from this, the increase in age is also associated with increased glycogen level, reduced Lactobacillus colony, acidity of the vagina, and prevention of pathogen colonization, leading to increased vulnerability to ASB (Hassan, et al., 2010).

Urinary tract infections during pregnancy is common and high in age group between 26-35 years. The high incidence of UTIS in the young reproductive age group is due to early pregnancy particularly in the remote settings. Many studies considered advances in age a risk factor for getting UTIS in pregnancy because there is decline in glycogen level, deposition and decrease in the Lactobacillus as part of ageing progression which increases bacterial adherence and attack by pathogens and make them more vulnerable (Athira, 2016).

According to Mokube et al., (2013) lower levels of education and low socio-economic grade have correlation with higher recurrent of ASB in many studies and reports. This is because education improves the attitudes and beliefs of women. However, according to Onu et al., (2015), level of education of the participants did not have any significant association with ASB; which disagrees with Mokube et al., (2013) who in their study confirms that, socio-economic factors in terms of Income Level have a significant association with recurrent of UTI among pregnant women.

According to Aiyeblehin et al., (2013), there is no relationship established between UTIS and social-economic status of the pregnant women in his study. However, in another study by Fatima and Ishrat (2016), it is realized there is a significant relationship between socio-economic status of the mother and UTIS recurrent. Thus, the recurrent of urinary tract infections was found to vary with socio-economic status of respondents. The recurrent was higher in women with low socio-economic status compared to middle and higher classes.

# **Obstetric factors such as Gravidity and Gestational Age**

A study by Ajayiet al., (2012) in Nigeria also gave similar results (Care et al., 2016). Parity and gestational age considerably affect the recurrent of urinary tract infections. These have been previously reported in many studies (Halder et al., 2010). According to Kerure et al., (2013), urinary tract infections in pregnancy was more common among women with first pregnancies (53.85%) compared to multi-gravidae (46.15%). This study shows that nulliparous women are more susceptible to UTIS compared to multiparous women.

Pregnant women in their third trimester of current pregnancy and those having more than one child were mostly susceptible to acquire urinary tract infections. Numerous anatomical and hormonal variations in pregnant women lead to urethral dilation and urinary inertia which increased changes of developing UTIS (Bankole et al 2015) Studies have shown that with respect to trimester, majority of the pregnant women with UTIS were in third trimester, followed by second trimester and first trimester (Length, 2015).

# **CHAPTER THREE**

# **RESEARCH METHODOLOGY**

# **Introduction**

This chapter described methodologies followed in carrying out this study. These methodologies included; locale of the study, research design, study population, target population, sample size selection, sampling technique, data collection instruments and tools, validity of the instruments, reliability of the instruments, ethical consideration, and data analysis.

# **Locale of the study**

Because of the increased recurrent of UTIS among pregnant mothers in Luweero District, (MOH, 2021), there is a need for this study to be carried out in Kalagala Health Centre 1V which is located within Kalagala Sub-County, Luweero District, Uganda.

**Research Design**

This study was used a descriptive and correlational research designs employing quantitative and qualitative data collection approaches. Descriptive design was used to show findings on the demographic characteristics, recurrent level of UTIS, factors Contributing to UTIS recurrent. The correlational research design helped to establish the influence of the associated factors towards recurrent of UTIS. The quantitative approach was used to obtain quantifiable data which was converted into mean and standard deviation.

# **Target Population**

The study targeted pregnant mothers attending Kalagala Health Centre IV who acted as the unit of inquiry whereas the maternity and clinic wings within the hospital acted as the units of analysis. According to the current records from the Health acility, the area had a total of 109 pregnant mothers at different trimesters of pregnancy. Targeting pregnant mothers is vital for the study because it helps in ensuring that data is collected from the relevant respondents.

# **Sample Size**

The following mathematical formula by Taro Yamane (1970) was used to determine the sample size.

Where; N = total population [109]

n= total sample size.

E= desired margin error [0.05]

# **Sampling Technique**

This study applied random sampling techniques. Thus, the researcher will attain this through lottery approach whereby she wrote numbers on papers from 1-109, fold and placed in an empty box. When the pregnant mothers was coming in for clinic services, the researcher with the help of the nurses on duty requested a mother to pick a paper and incase the mother picked a paper indicated number’s 1-86, then that mother was briefed and requested to answer a questioner. The questionnaire was simplified for easy understanding and for mothers who cannot read and write in English, a data collection officer was available to explain to them the content of the tools.

# **Data Collection Instruments**

A questionnaire method is suitable for this study since it helped in gathering both quantitative and qualitative data. In addition, a questionnaire was easy to make, save time during data collection and it was cheap to print questionnaires. Thus, this study used a questionnaire, which consisted of a set of well formulated questions to probe and obtain responses from respondents. The questionnaire consisted of three sections. Section A questions on personal information; section B on impacts and section C on suggestions. Closed-ended questions was guided by a four-point Likert scale of; 4. Strongly Agree, 3. Agree, 2. Disagree and 1. Strongly Disagree.

Figure 1: Showing the operationalized Likert Scale

|  |  |  |  |
| --- | --- | --- | --- |
| **Scale** | **Mean Range** | **Response Mode** | **Interpretation** |
| 4 | 3.25-4.00 | Strongly Agree | Very High |
| 3 | 2.50-3.24 | Agree | High |
| 2 | 1.75-2.49 | Disagree | Low |
| 1 | 1.00-1.74 | Strongly Disagree | Very Low |

# **Validity of the Instruments**

The researcher first formulated a questionnaire according to the study objectives and presented it to the supervisor and other research experts to check on the validity of the instrument for clarity of items in the questionnaire. To ascertain this, the content validity index (C.V.I) was computed using the formula below. If the C.V.I was found to be 0.70 and above, the instrument was considered valid (Amin, 2005).

# **Reliability of the Instruments**

To ensure consistency and accuracy, the researchers pre-tested the questionnaire using 20 questionnaires administered to pregnant mothers attending Bugema Level IV Hospital, as it had similar characteristics with that of Kalagal Health Centre IV. The researcher used statistical package for social scientists (SPSS) in which, Cronbach’s alpha scale recommends a coefficient of 0.7 and above as an adequate measure of internal consistency for the instrument to considered reliable (Cooper & Schindler, 2006).

|  |  |
| --- | --- |
| **Table 2: Reliability Statistics** | |
| Cronbach's Alpha | N of Items |
| .801 | 13 |

# **Ethical consideration**

A letter of introduction was obtained from Bugema University which introduced the researcher to Kalagala Health Centre IV administration from whom the permission to carry out the study was obtained. The researcher attached consent form in each questionnaire for the respondents to evaluate and those who were convinced on the purpose of the study was answering the questionnaire with a willing consent. Strict confidentiality of all information received was assured to the respondents. The researcher as well observed all set COVID 19 control measures.

# **Data Editing, Processing and Tabulation**

Data processing consisted of editing, coding and tabulation of data with the aim of preparing it before it was analyzed, interpreted and discussed. Through editing, the raw data was evaluated to eliminate errors. Coding involved a process of assigning numerals or other symbols to answers so that responses to put them into limited number of classes and categories. Tabulation involved the data being arranged in logical order for the purpose of statistical analysis and was done by the researchers after sorting the data and knew the number of tables required, the data was analyzed using Statistical Package for Socio-moral Scientists (SPSS).

# **Data Analysis**

Objectives 1, and 2 was analyzed using descriptive statistics whereby the data was converted into mean and standard deviation and presented in terms of tables. Objective 3 was analyzed through inferential statistics of Pearson’s moment of correlation as well as subjected to Chie Squire Analysis. Thus, the raw data was entered into a computerized software (SPSS Version 20) then analyzed to present the results in mean and standard deviation statistics, then discussed and afterwards supported with literature review.

# 

# **CHAPTER FOUR**

# **RESULTS AND DISCUSSION**

This chapter presents the results and discussion on “**FACTORS ASSOCIATED WITH RECURRENT URINARY TRACT INFECTIONS (UTIs) AMONG PREGNANT MOTHERS AT KALAGALA HEALTH CENTRE IV, LUWEERO DISTRICT, UGANDA**.”Objectives included;to find out the prevalence of recurrent of UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda, to establish factors associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda, and to determine the relationship between associated factors & UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda. Data was gathered randomly from 79 respondents with a self-administered questionnaire.

# **Respondents Demographic Information**

The study assessed respondents’ demographic information in terms of sage, education level and occupation. Aim of involving the demographic information of the respondents is to ensure that there is no biasness when collecting data since respondents’ personal characteristics can determine the response of the study. Findings are presented in Table 3 of the study.

**Table 3: Respondents Demographic Information**

|  |  |  |  |
| --- | --- | --- | --- |
| Character-Bio data | Response | Frequency | Percent |
| Age | 18-28 Years | 20 | 25.3 |
| 29-38 Years | 47 | 59.5 |
| 39 and above Years | 12 | 15.2 |
| Education level | None | 4 | 5.1 |
| Primary | 35 | 44.3 |
| Secondary | 32 | 40.5 |
| Tertiary | 8 | 10.1 |
| Occupation | Employed | 7 | 8.9 |
| Self-employed | 55 | 69.6 |
| Not employed | 17 | 21.5 |

N=79

Table 3 presents empirical information on respondents’ demographic information in terms of age, education level and occupation. In terms of age, majority 47(59.5%) of the pregnant women were aged 29-38 years with fewer 12(15.2%) aged 39 and above years. In terms of education level, results shows that nearly half 35(44.3%) of the pregnant women had primary level of education with few 4(5.1%) having no formal education. In regard to occupation, results show that 55(69.6%) of the pregnant women were self-employed with few 7(8.9%) being educated.

# **Prevalence of Recurrent Of UTIS among Pregnant Mothers Attending Kalagala Health Centre 1V**

Objective one of the study was to find out the prevalence of recurrent of UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda. Results are presented in Table 4.

**Table** 4**: Prevalence of UTIS among Pregnant Mothers Attending Kalagala Health Centre 1V**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | Frequency | Percent |
| Have you ever suffered from UTIS in this pregnancy | No | 61 | 77.2 |
| Yes | 18 | 22.8 |

N=79

Table 4/fig 4.1 shows that there is a 22.8% prevalence level of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda with majority 77.2 of pregnant mothers not suffering from UTI from their current pregnancy. The current 22.8% UTI prevalence among pregnant mothers attending Kalagala Health Centre 1V is high than the Uganda national UTI prevalence level of 13.3% in Uganda (Andabati and Byomugisha, 2010).

Table 5: Prevalence of Recurrent Of UTIS among Pregnant Mothers Attending Kalagala Health Centre 1V

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | Frequency | Percent |
| **How many times have you suffers from UTI in this pregnancy** | 1 time | 11 | 61.1 |
| 2-3 times | 5 | 27.8 |
| 3 and above times | 2 | 11.1 |
| Total | 18 | 100.0 |

N=18

Table 5/fig 4.2 presents information on the prevalence of recurrent of UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda. Results show that out of 18 pregnant women who suffered from UTI in their current pregnancy, 61.1% did not experience recurrent UTI infection with 27.8% having a 2-3 prevalence of UTI recurrent and 11.1% experiencing a 3 and above prevalence of recurrent UTI.

In conclusion, objective one results indicate that UTI prevalence among pregnant women in Kalagala Health Centre 1V, Luweero District, Uganda was at 22.8%. However, out of the 18 infected pregnant mothers, 27.8% of them experienced 2-3 prevalence of UTI recurrent and 11.1% experiencing 3 and above prevalence of recurrent UTI in Kalagala Health Centre 1V, Luweero District, Uganda. The prevalence of UTI and recurrent UTI in Kalagala Health Centre 1V, Luweero District, Uganda was higher than the that reported in Uganda at 13.3% and globally at 9.5%.

In East Africa, many pregnant women are affected by UTIS. For instance, according to studies done in Tanzania, the recurrent of urinary tract infections among pregnant women was 15.5% (Masinde et al., 2009) and 13.3% in Uganda (Andabati and Byomugisha, 2010). Similar studies done in Sudan revealed the recurrent to be at14 % (Hamdan et al., 2011).

# **Factors Associated with Recurrent UTIS among Pregnant Mothers Attending Kalagala Health Centre 1V, Luweero District**

Objective two of the study was to establish factors associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda. Results are presented in Table 5.

**Table 5: Factors Associated with Recurrent UTIS among Pregnant Mothers Attending Kalagala Health Centre 1V, Luweero District**

|  |  |  |
| --- | --- | --- |
| **Gravidity/ Parity** | **Mean** | **Std. D** |
| Do you often get sick | 1.96 | .724 |
| Do you often get tested for UTIS | 2.06 | .740 |
| Do you receive UTIS treatment when sick | 2.43 | .812 |
| Are you able to see a UTIS specialist when you need | 2.00 | .716 |
| **Aggregate Mean and Std. D** | **2.11** | **0.748** |
| **Gestation age/Trimester** | **Mean** | **Std. D** |
| You get UTIS mainly in your 1st and 2nd pregnancy trimesters | 2.78 | .704 |
| You get UTIS mainly in your 3rd and 4th pregnancy trimesters | 2.94 | .827 |
| UTIS infection is common throughout the gestation period | 2.78 | .779 |
| **Aggregate Mean and Std. D** | **2.83** | **0.770** |
| **Level of income** | **Mean** | **Std. D** |
| Can you afford paying for UTIS treatment | 1.95 | .552 |
| You are always able to pay for transport charges to the hospital | 2.11 | .751 |
| You are able to equip your washroom with clean facilities all the time | 2.09 | .819 |
| With your income, you are able to keep yourself from the impacts of UTIS. | 2.11 | .734 |
| **Aggregate Mean and Std. D** | **2.07** | **0.714** |

Table 5 presents empirical information on factors associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda.

Findings show that gravidity/parity is a factor associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (Aggr Mean=2.11, Std. D=0.748). This findings suggests that, despite pregnant mothers not often falling sick, they don’t get easily get access to UTI testing services, find it hard to receive UTI treatment when sick, and it is almost impossible to see a UTI specialist when they need. Ajayiet al., (2012) in Nigeria realized that, parity and gestational age considerably affect the recurrent of urinary tract infections. These have been previously reported in many studies (Halder et al., 2010). According to Kerure et al., (2013), urinary tract infections in pregnancy was more common among women with first pregnancies (53.85%) compared to multi-gravidae (46.15%). This study shows that nulliparous women are more susceptible to UTIS compared to multiparous women.

On the other hand, results show that gestation age or trimester is a strong factor associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (Aggr Mean=2.83, Std. D=0.770). This means that pregnant mothers get UTI at any stage of their pregnancy 1st, 2nd, 3rd and 4th trimesters hence making UTI a common disease among pregnant women in the study area. However, there is a high probability of getting UTI in the 3rd and 4th trimester (mean 2.94) than in the 1st and 2nd trimester (mean 2.78). The results are supported by Bankole et al (2015) who states that pregnant women in their third trimester of current pregnancy and those having more than one child were mostly susceptible to acquire urinary tract infections. Numerous anatomical and hormonal variations in pregnant women lead to urethral dilation and urinary inertia which increased changes of developing UTIS. Studies have shown that with respect to trimester, majority of the pregnant women with UTIS were in third trimester, followed by second trimester and first trimester (Length, 2015).

In addition, results shows that level of income is a factor associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (Aggr Mean=2.07, Std. D=0.714). The results suggest that majority of the pregnant mothers have low income which make them unable to afford UTI treatment, transport to hospital for testing and medication, to equip their washrooms with cleaners, detergents and fresheners and take care of any other necessary precaution to prevent and treat UTI. This study finding is in line with the findings in a previous study results by Mokube et al., (2013) who found out that lower levels of education and low socio-economic grade have correlation with higher recurrent of ASB in many studies and reports. This is because education improves the attitudes and beliefs of women. However, according to Onu et al., (2015), level of education of the participants did not have any significant association with ASB; which disagrees with Mokube et al., (2013) who in their study confirms that, socio-economic factors in terms of Income Level have a significant association with recurrent of UTI among pregnant women. Similarly, according to Aiyeblehin et al., (2013), there is a relationship established between UTIS and social-economic status of the pregnant women in his study. However, in another study by Fatima and Ishrat (2016), it is realized there is a significant relationship between socio-economic status of the mother and UTIS recurrent. Thus, the recurrent of urinary tract infections was found to vary with socio-economic status of respondents. The recurrent was higher in women with low socio-economic status compared to middle and higher classes.

# **Relationship between Associated Factors & UTIS among Pregnant Mothers Attending Kalagala Health Centre 1V**

Objective three of the study was to determine the relationship between associated factors & UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda. Results are presented in Table 6.

**Table 6: Relationship between Associated Factors & UTIS among Pregnant Mothers Attending Kalagala Health Centre 1V**

|  |  |  |
| --- | --- | --- |
|  |  | Recurrent of UTI |
| Obstetric factor-parity | Pearson Correlation | .063 |
| Sig. (2-tailed) | .582 |
| Obstetric factor-Gestation age/trimester | Pearson Correlation | .260\* |
| Sig. (2-tailed) | .021 |
| Socio-economic factor-income level | Pearson Correlation | .190\*\* |
| Sig. (2-tailed) | .04 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | |
| \*. Correlation is significant at the 0.05 level (2-tailed). | | |

Table 6 presents correlational results on the relationship between associated factors & UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda.

Findings shows that there is no significant relationship between parity and recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (correlational coefficient r=0.063, P value>Alpha 0.01). This means that there is no adequate evidence from the study results that parity contributes to recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda. The results contradicts Ajayi et al., (2012) who states that parity and gestational age considerably affect the recurrent of urinary tract infections. However, they conclude that there is no significant relationship between parity and recurrent of UTI.

In addition, findings in Table 6 shows that there is a significant relationship between gestation age or trimester and recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (correlational coefficient r=0.260\*, P value 0.021<Alpha 0.05). This means that there is adequate evidence from the study results that gestation age or trimester contributes to recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda. Length (2015) study has shown that with respect to trimester, majority of the pregnant women with UTIS were in third trimester, followed by second trimester and first trimester, hence concluded that there is a significant relationship between pregnancy trimester or gestation age and recurrent of UTI among pregnant mothers.

Similarly, findings in Table 6 shows that there is a significant relationship between income level and recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (correlational coefficient r=0.190\*\*, P value 0.04<Alpha 0.01). This means that there is adequate evidence from the study results that household socio-economic factor in terms of income level contributes to recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda. Aiyeblehin et al., (2013) in their study concluded that there is a relationship established between UTIS recurrent and social-economic status of the pregnant women.

# **CHAPTER FIVE**

# **SUMMARY, CONCLUSION AND RECOMMENDATION**

This chapter includes the summary, conclusion and recommendations of the organized, presented and analyzed data in the preceding chapters. The summary and conclusions are drawn from the discussed findings in regard with the study objectives.

# **Summary of Findings**

The study was on “Factors Associated with Recurrent Urinary Tract Infections (UTIs) among Pregnant Mothers at Kalagala Health Centre Iv, Luweero District, Uganda.” Objectives included; to find out the prevalence of recurrent of UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda, to establish factors associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda, and to determine the relationship between associated factors & UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda. Both descriptive and correlational research designs were used. Data was gathered randomly from 79 respondents with a self-administered questionnaire.

# **Key Findings**

Objective one results indicate that UTI prevalence among pregnant women in Kalagala Health Centre 1V, Luweero District, Uganda was at 22.8%. However, out of the 18 infected pregnant mothers, 27.8% of them experienced 2-3 prevalence of UTI recurrent and 11.1% experiencing 3 and above prevalence of recurrent UTI in Kalagala Health Centre 1V, Luweero District, Uganda. The prevalence of UTI and recurrent UTI in Kalagala Health Centre 1V, Luweero District, Uganda was higher than the that reported in Uganda at 13.3% and globally at 9.5%.

Objective two results show that gravidity/parity is a factor associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (Aggr Mean=2.11, Std. D=0.748). On the other hand, results show that gestation age or trimester is a strong factor associated with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (Aggr Mean=2.83, Std. D=0.770). In addition, results shows that level of income is a factor associated with with recurrent UTIS among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (Aggr Mean=2.07, Std. D=0.714).

Objective three results show that there is no significant relationship between parity and recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (correlational coefficient r=0.063, P value>Alpha 0.01). In addition, findings shows that there is a significant relationship between gestation age or trimester and recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (correlational coefficient r=0.260\*, P value 0.021<Alpha 0.05). Similarly, findings in Table 6 shows that there is a significant relationship between income level and recurrent of UTI among pregnant mothers attending Kalagala Health Centre 1V, Luweero District, Uganda (correlational coefficient r=0.190\*\*, P value 0.04<Alpha 0.01).

# **Conclusion**

Pregnant mothers experience low parity in terms of access to UTI treatment services, and access to UTI specialists when in need. In addition, there is a high probability of mothers experiencing recurrent UTI in their 3rd or 4th trimester than in the 1st and 2nd trimesters. However, mothers are prone to UTI at any level of their pregnancy in Kalagala. Pregnancy mothers from poor families with low income level are more likely to experience recurrent of UTI than mothers with better income level.

# **Recommendations**

Kalagala Health Centre 1V and other health care facilities should offer UTI screening to all pregnant mothers for free. Each health facility in the study location should set up a laboratory to carry out necessary tests including that of UTI to pregnant mothers.

Pregnant mothers should be very careful in their pregnancy gestation period and more especially in their 3rd and 4th trimesters by ensuring that their washrooms are cleaned and stay clean all the time.

Pregnant mothers from poor families should receive medical services to screen, treat and manage UTI for free all the time.

Further studies should be carried out on other factors associated with recurrent of UTI in Kalagala Health Centre 1V.

# **REFERENCES**

AjayiET, A. B., Nwabuisi, C., Aboyeji, A. P., Ajayi, N. S., Fowotade, A., & Fakeye (2012). Asymptomatic Bacteriuria in Antenatal Patients in Ilorin, Nigeria, 27(1), 31–35.

Bankole Oladeinde BH, Omoregie R, Oladeinde OB.(2015). Asymptomatic urinary tract infection among pregnant women receiving ante-natal care in a traditional birth home in Benin City, Nigeria. Ethiop J Health Sci. Jan;25(1):3-8.

Bose, A. M., Pk, S., & Pulikkottil, S. K. (2016). iMedPub Journals Microbiological Profile of Asyptomatic Bacteriuria in Pregnancy Keywords : Objectives, 1–9. <http://doi.org/10.4172/2471-9803.100013>

Care, A., Alrass, C., Qassim, A., Lele, U., Essa, A. Al, & Shahane, V. (2016). The Recurrent of Urinary tract infections among Pregnant Women Attending Antenatal Clinic at, 5(5), 23–27.

Halder G, Munir A, Zehra N, Haider A. (2010) Risk factors of urinary tract infections in pregnancy. J Pakistan Med Assoc. 60(3):213–216.

Kacmaz B, Cakir O, Aksoy A, Biri A. (2006). Evaluation of rapid urine screening tests to detect asymptomatic bacteriuria in pregnancy. Jpn J Infect Dis.59(4):261-263.

Length, F. (2015). Urinary tract infections amongst pregnant women in, 9(6), 355–359. <http://doi.org/10.5897/AJMR2014.7323>

Mokube MN, Atashili J, Halle-Ekane GE, Ikomey GM, Ndumbe PM. (2013) Bacteriuria amongst Pregnant Women in the Buea Health District, Cameroon: recurrent, predictors, antibiotic susceptibility patterns and diagnosis. PLoS ONE.; 8(8): e71086

Musbau, S., & Muhammad, Y. (2013). Recurrent of Asymptomatic Bacteriuria among Pregnant Women Attending Antenatal Clinic at Federal Medical Centre Nguru Yobe State, 1(5), 658– 660.

Nicolle LE (2003) . Asymptomatic bacteriuria: when to screen and when to treat. Infect Dis Clin North Am 17:367-94

Nicolle LE, Bradley S, Colgan R, et al., (2005). Infectious Diseases Society of America guidelines for the diagnosis and treatment of asymptomatic bacteriuria in adults. Clin Infect Dis; 40:643.

Rouse DJ (2003). Potential cost-effectiveness of nutrition interventions to prevent adverse pregnancy outcomes in the developing world.J Nutr. 133:1640S– 4S.123

Saeed S, Tariq P. (2011). Symptomatic and Asymptomatic Urinary tract infections during pregnancy. Intl.J.Microbiol.Res 2(2): 101-104.

Samuel, O., Victoria, O., & Ifeanyi, O. (2016). Recurrent of Asymptomatic Bacteriuria among the Pregnant Women Receiving Antenatal Care at Federal Medical Centre Owerri , Nigeria, 4(1), 1–5. <http://doi.org/10.13189/ujcm.2016.040101>

Schieve LA, Handler A, Hershow R, Persky V, Davis F.(1994). Urinary tract infections during pregnancy: its association with maternal morbidity and perinatal outcome. Am J Public Health. 84:405–10.

Sharma JB, Sharma S, Gulati N, et al (1990). Recurrent of significant bacteriuria in preterm labour. J ObstetGynecol India.40:336–8.

Smith, P., A. Morris., Reller., LB (2003). Predicting Urine Culture Results by Dipstick Testing and Phase Contrast Microscopy. Pathol; 35(2): 161-165.

# Appendix 1 Informed consent form

**Participant identity number............................................**

**INFORMED CONSENT TO PARTICIPATE IN STUDY**

Greetings,

Dear Parent/Guidant

I am a nursing student; pursuing Bachelor of Science in nursing at Bugema University, I am conducting research to ***assessing* *FACTORS ASSOCIATED WITH RECURRENT OF URINARY TRACT INFECTIONS (UTIS) AMONG PREGNANT MOTHERS AT KALAGALA HEALTH CENTRE IV, LUWEERO DISTRICT, UGANDA***. I would be very grateful if you will spare your time participate in the study.

**The aim of the study:** To assess Factors Associated with Recurrent of Urinary Tract Infections (UTIs) among Pregnant Mothers at Kalagala Health Centre IV, Luweero District, Uganda.

**Rights:** Participating in this study is completely voluntary. You can choose not to participate in this study and refusal to participate or withdrawal from the study will not involve penalty or loss of any benefits.

**The procedure of this study**: If you agree to participate in this study, you was required to answer a series of questions that have been prepared for the study through questionnaire in order to obtain the intended information, it will take almost for 30-50 minutes.

**Risks:** The study will not harm any participant in anyways, even though there might be slight discomfort for your time as well as leading interruption according with your daily routine.

**Benefits:** If you agree to participate in this study, your contribution was useful on improving UTI management among pregnant mothers.

**Confidentiality:** Information provided was treated with confidentiality, whereby no one will access your information and number used instead of using name to ensure anonymity. The entire questionnaire was accessible only to the researcher and supervisor.

**Agreement:** I have read and understood the content of this form, I have no question. I understand that by signing this form below. I am agreeing and freely give consent to participate in this research study.

Participant signature........................................... Date.............................

Signature of investigator..................................... Date................................

# **APPENDICES**

# **APPENDIX A: QUESTIONNAIRE**

Dear Madam

I am **SIWEMA JEREMIAH KAZABULA,** a students of Bugema University pursuing Degree in Nursing and Midwifery. We are carrying out a study on “**FACTORS ASSOCIATED WITH RECURRENT OF URINARY TRACT INFECTIONS (UTIS) AMONG PREGNANT MOTHERS AT KALAGALA HEALTH CENTRE IV, LUWEERO DISTRICT, UGANDA**”. The study is purely for academic purpose. The information obtained will be treated with great confidentiality. Therefore, I kindly request you to fill in the questionnaire to the best of your knowledge. Thank you for your cooperation.

**SECTION A: PERSONAL INFORMATION**

Please Tick (**√**) where appropriate in the box provided.

1. Age: 18-28 years ( ), 29-38 years ( ), 39 and above years ( )
2. Education level: None ( ), Primary ( ), Secondary ( ), Tertiary ( )
3. Occupation: Employed ( ), Self-employed ( ), Not employed ( )

**SECTION B: PREDICTIVE FACTORS FACED**

Please Tick (**√**) where appropriate in the box provided.

4. Strongly Agree 3. Agree 2. Disagree 1. Strongly Disagree1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Factors Contributing (Associated) to Recurrent of UTIS;** | **SD** | **D** | **A** | **SA** |
| **Obstetric factors** |  |  |  |  |
| **Gravidity/ Parity** |  |  |  |  |
| 1. Do you often get sick |  |  |  |  |
| 1. Do you often get tested for UTIS |  |  |  |  |
| 1. What health care services do you receive to treat UTIS |  |  |  |  |
| 1. Will I be able to see a UTIS specialist |  |  |  |  |
| **Gestation age/Trimester** |  |  |  |  |
| 1. You get UTIS mainly in your 1st and 2nd pregnancy trimesters |  |  |  |  |
| 1. You get UTIS mainly in your 3rd and 4th pregnancy trimesters |  |  |  |  |
| 1. UTIS infection is common throughout the gestation period |  |  |  |  |
| **Socio-economic factors** |  |  |  |  |
| **Level of income** |  |  |  |  |
| 1. Can you afford paying for UTIS treatment |  |  |  |  |
| 1. You are always able to pay for transport charges to the hospital |  |  |  |  |
| 1. You are able to equip your washroom with clean facilities all the time |  |  |  |  |
| 1. With your income, you are able to keep yourself from the impacts of UTIS. |  |  |  |  |
|  |  |  |  |  |

**RECURRENT OF URINARY TRACT INFECTIONS (UTIS)**

1. Have you ever suffered from UTIS in this pregnancy?

Yes ( ), No ( )

1. If yes, how many times?

1 time ( ),

2 or 3 times ( )

3 and above times ( )