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PREVALENCE OF URINARY TRACT INFECTION AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC AT KASANGATI HEALTH CENTER IV IN WAKISO DISTRICT. A DESCRIPTIVE CROSS-SECTIONAL STUDY.

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Abstract

Background:

Urinary tract infections (UTIs) are a common bacterial infection among pregnant women affecting up to 10% of pregnant women worldwide. Despite the increase and availability of UTIs in Uganda, the prevalence is still unknown. Therefore this study aimed at determining the prevalence of UTI, most affected age and risk factors associated with UTI among pregnant women attending the antenatal care clinic at kasangati health center IV in Wakiso district.

methodology:

The study employed a descriptive cross-sectional study both quantitative methods. The results were obtained through laboratory diagnosis of midstream urine. Data collected from the study were analyzed using SPSS version 2.0 and presented on tables and graphs.

Results:

The most affected age group in terms of UTIs is the 23-27 years category, with 36.9% of pregnant women having had UTIs. The 28-32 years category follows closely behind, with 32.9% of pregnant women having UTIs. The other age groups have lower percentages of UTI occurrences. pregnant that were single had a higher percentage of UTI cases (87.5%), (81.5%) among housewives, (79.5%) resided in urban areas, (87.5%) among Muslim pregnant women, and a higher percentage of UTI cases (83.9%) occurred among those with higher incomes (>50,000/=). pregnant women with multiple partners, changing undergarments once a day, knowledge about UTI cases and UTIs from sex, using contaminated toilets, cleaning directions, and frequency of weekly sexual intercourse.

Conclusion:

The study recorded a higher prevalence (73%) of UTIs in pregnancy than in all the studies.

Recommendation:

The study recommended that the introduction of culture and sensitivity for every pregnant woman especially those with a history of UTI should be considered as well as made available at least at health center IV hospitals since it acts as referral point to several pregnant women

Keywords: Antenatal clinic, pregnant women, multiple partners, under garments, Submitted: 2023-06-1 Accepted: 2023-06-03

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1. Background of study:

Urinary tract infections (UTIs) are a common bacterial infection among pregnant women affecting up to 10% of pregnant women worldwide *(Wu J, Zhang H, Chen J, et al., 2019*.UTIs are caused by bacteria entering the urinary tract, leading to inflammation and infection of the bladder, ureters, and kidneys. In pregnant women, including preterm labor, low birth weight, and maternal and neonatal morbidity and mortality. From a report that was released by*(Mirfat Mohamed Labib El-Kashif, 2019)*, If UTI is left untreated, it results in serious consequences such as low birth weight, preterm labor, hypertension, pre-eclampsia, anemia, pyelonephritis, amnionitis, stillbirths, neonatal deaths, Bacteremia and toxic septicemia (MML El- Kashif, 2019)

Additionally, Urinary tract infections may present as asymptomatic bacteriuria, acute cystitis, or pyelonephritis *(Kalinderi K et al., 2018).* In pregnant women, UTIs contribute about 25% of all infections and are among the most frequent clinical bacterial infections. Pregnancy mainly because several changes occur such as anatomical, physiological, and hormonal resulting in dilatation of the urethra, increased bladder volume, and decreased bladder tone, decreased ureteral tone that leads to increased urinary stasis and vesicoureteric reflux, partially due increased levels of progesterone and estrogen but also due to pressure created by the growing uterus predisposing them to UTI's *(Johnson B et al., 2019).*

According to *(Bosket G, Braissant O, Fries R, 2018*), these hormonal changes during pregnancy as well as physical changes to the urinary tract, can increase the risk of developing a UTI. The growing uterus can compress the bladder leading to incomplete emptying and increased risk of infection .additionally changes in the PH of vaginal secretions during pregnancy can facilitate the growth of bacteria in the urinary tract. Escherichia coli is the most common causative organism of UTIs in pregnant women accounting for up to 805 cases (Thebe PM, Tchente CN, Halle G, *et al.,* 2015) and other organism such as Klebsiella pnuemoniae and Staphylococcus saprophyticus may also be involved *(Lim R, Kline K, Pennington H,2020)*.

Available literature like that by *(Tchatchouang S. et al., 2019)* alights that pregnant women are at increased risk for UTIs between weeks 6-24 of pregnancy because, in the period, the uterus sits directly on top of the bladder thus growing and blocking the drainage of urine from the bladder which can cause infection especially when pathogen ascends into the urinary bladder *(Mirfat Mohamed Labib El-Kashif, 2019)* . However UTIs affect both males and females although females are at high risk of the infections; globally, the prevalence of UTI in pregnancy ranges between 13% - 33% with symptomatic bacteriuria occurring in 1% - 18% while asymptomatic cases are noted in 2% - 10% of women. And both symptomatic and asymptomatic UTIs are prevalent among pregnant women and are linked with adverse effects on the mother, the fetus, and the newborn.

Available evidence showed that pregnant women in developing countries have higher rates of UTI and its burden than developed nations *(Kalinderi K et al., 2018).* This is affiliated with the fact that: In low-income countries, screening and treatment of UTI or ASB is challenging due to the costs and logistics of performing urine culture despite that the Recent, World Health Organization's (WHO) made context-specific antenatal care recommendations for screening and treatment of ASB in LMIC*(Lee, A.C et al.,2020).* Indicating that treatment at all levels of health care management of pregnant mothers at risk of UTIs is done empirically including in Uganda.

In a report by *(Sekikubo M,2018),* At Mulago National Referral Hospital, the largest Hospital in Uganda, it was found that 96% of pregnant women with UTI were treated empirically with 18% having extended spectrum ß-lactamases (ESBL) and 36% with multidrug-resistant *Escherichia coli* strains and similarly *(Caneiras C, 2019)* reported that Management of UTI at Mbarara regional referral hospital (MRRH) has been largely empirical without the use of a urine culture and susceptibility testing to guide therapy.

This practice is a risk for the development of antimicrobial resistance among uropathogens. Elsewhere, antimicrobial resistance is a major health problem in the treatment of UTI caused by *Escherichia coli* and *Klebsiella pneumonia,* the dominant uropathogens in pregnant women.

About the above grounds, UTIs posses major health risk among pregnant women however there is a general paucity of data concerning the prevalence of UTIs among pregnant women attending ANC, particularly kasangati health center iv and it's based on this that the researcher aimed at determining the prevalence of urinary tract infections among pregnant women attending ANC at kasangati health center IV

1.1. ***Specific objective***

- To determine the prevalence of urinary tract infection among pregnant women attending ANC at kasangati health center IV
- To find out the age that is most affected by UTI among pregnant women attending ANC at kasangati health center IV
- To determine the risk factors associated with prevalence among pregnant women attending ANC at kasangati health center IV

2. Methodology:

2.1. Study design:

The study employed a descriptive cross-sectional study using both quantitative and qualitative methods. Data was collected using a questionnaire. Cross-sectional survey because the design allows data to be collected on the prevalence of malaria and associated factors simultaneously at a particular point in time.

2.2. Study area:

Kasangati health center IV is a hospital located in Nangabo, Kyadondo, Wakiso district, central region, Uganda. Kasangati health center IV is situated nearby to the town called Gayaza and Bulindo. It's generally a medical facility associated with outpatient and a certain capacity of in-patients. The latitude is 0026'5"N and the longitude is 32036'3" E. The area was selected because it has a high number of susceptible clients an issue that increases the availability of study participants.

2.3. Study population:

The target population was all pregnant women attending ANC during the time of the study

2.4. Eligibility criteria

2.4.1. Inclusion criteria

All Pregnant mothers attending the antenatal clinic at kasangati health center IV.

2.4.2. Exclusion criteria

Pregnant women with a history of diabetes mellitus and those who declined to consent were excluded and replaced

2.5. Sample size determination

The size of voluntary participants to be involved in the study was determined using the Kiesh and Leslie (1965) method of sample size determination

$$N = \frac{Z2PQ}{12}$$

Where;

n= desired sample size

N= the population size, 2500 pregnant per month (extracted from the ANC register)

e = the level of precision, estimated at 10%

$$N = \frac{1.962 \times 0.5 \times 0.5}{0.12}$$

N= 96.04

Therefore, 100 pregnant women were considered as for the study.

2.6. Sampling technique:

Simple Random Sampling was considered since it gave all pregnant women an equal chance of inclusion in the sample. This technique provided an unbiased and better estimate of the parameters if the population homogeneous.

2.7. Sampling procedure:

The researcher was introduced to the in charge of the health center who then introduced him to the staff and the patients. The study was then explained to them to identify those who were eligible for the study. The questionnaires were interpreted by the researcher into local languages especially Luganda since it's the most spoken.

All pregnant women were subjected to the consent and later they were provided with a questionnaire to avail their credentials as they waited for the children to be tested. Results for pregnant women who tested positive were used to determine the prevalence of urinary tract infections and the associated factors among pregnant women. The prevalence was the number of pregnant women who tested positive over the total number of pregnant women who engaged in the study.

2.8. Data collection method:

The study employed quantitative data-collection methods because they relate to evaluating a numerical result and are straightforward. Using this method, researchers ask questions to collect sets of facts and figures. Additionally, data obtained with the quantitative data collection method is more measurable and expressed in numerical form.

2.9. Data collection tools:

Questionnaire: The respondents with inclusive criteria were educated and counseled about the study. Those who accepted to participate consented in writing and proceed to fill up a questionnaire. Using the questionnaire, the researcher recorded the social demographic factors obstetric and medical related as well as lifestyle and hygiene factors.

Urinalysis: was another tool for measuring the prevalence of urinalysis. A midstream sample will be analyzed as per sops (Appendix IV)

2.10. Data collection method:

After approval of the study by the institutional research committee, I was given an introduction letter from the school seeking permission and presented it to the in charge for authorization. After this, a consent letter was presented to the participant. The questionnaire was provided to the participant to obtain their credential as needed by the study and for convenience, all questionnaires were filled following clear guidelines to obtain the information needed. The final data concerning the prevalence of urinary tract infection and associated factors among pregnant women attending ANC at kasangati health center IV was obtained through laboratory diagnosis of midstream urine.

2.11. Study variables

The variables were the dependent and independent variables

2.11.1. Dependent variable

Was the prevalence of Urinary tract infection among pregnant women.

2.11.2. Independent variables:

The independent variables for this study involved social demographic factors, obstetric and medical-related factors, and lifestyle factors;

Social demographic factors: such as gender, age, marital status, family size, occupation, educational level, income level, religion, and location

Obstetric and medical-related factors: HIV status, history of UTI, history of catheterization, parity, and gestational age

Lifestyle and hygiene factors: number of partners, personal hygiene, sexual intercourse, douching habits, and material of underwear

2.12. Quality control:

2.12.1. Pilot study/ Pre-testing:

Before conducting the study, all designed tools, lab investigation forms, and sample logs were made.

2.12.2. SOPs:

were followed about urinalysis to achieve quality results and this will be backed up by the quality Lab practices such as pre-analytical, analytical, and post-analytical stages of quality assurance.

2.12.3. Quality control procedures:

standard colored charts for reference were used to check the specificity of the test method and also internal controls were used to check the procedure and data generated was reviewed by the professional Lab personnel to ensure accuracy before analysis and dissemination.

2.13. Data management:

Data collected from the study was placed in files and checked and all data were kept under lock and key for analysis after which they were kept confidentially for backup.

2.14. Data analysis:

Data was analyzed in Microsoft Excel. The proportion of pregnant mothers with UTI was obtained by the number of mothers diagnosed with UTI divided by the total number of mothers with and without UTIs and multiplied by 100%

2.15. Data presentation:

Data was presented on tables, charts, and graphs after analysis for better statistical presentation

2.16. Ethical considerations:

To make sure that the studies are ethically sound, the researcher fulfilled the following issues

2.17. Institutional consent:

Approval was provided by the research and ethics committee of kasangati health center IV. At the health facility level, permission from the research committee and the hospital in-charge Approval was provided by the research and ethics committee of kasangati health center IV. And then the researcher gained access to allow access to the patients.

2.18. Privacy and confidentiality:

Privacy was ensured by making sure that the information collected does not contain an individual identity. All questionnaires will be coded to ensure confidentiality and information collected that was kept under locks and keys as well as only accessible to the researcher for use.

Participants were interviewed separately from other clients to avoid breaches of privacy and confidentiality.

2.19. Informed consent:

Participation in this study was voluntary. Detailed information about the study was explained to the participants, after which they signed an informed consent.

2.20. Justice:

Every respondent was given an equal opportunity to participate in the study. A simple random sampling method was used to select the participants to ensure that all respondents have an equal chance of being selected for the study.

2.21. Beneficence

The participants who were diagnosed with UTI were prescribed appropriate antibiotics to prevent it from progressing to kidney injury and other complications.

3. Results Analysis:

Prevalence of urinary tract infection among pregnant women attending ANC at Kasangati Health Center IV.

From the table 1; 73/100(73%) pregnant women had UTI and 27/100(27%) pregnant women have never had a UTI. this implied that the prevalence of UTI among the pregnant women was 73%.

Age that is most affected with UTI among pregnant women attending ANC at Kasangati Health Center IV.

Table 2 indicates that data concerning age was divided into different age groups, ranging from 18-22 years to 38-42 years. Out of 73 cases of UTI among pregnant women aged 18-22yrs,23-27yrs,28-32yrs,33-37yrs and 38-42yrs had 16/73 (21.9%) ,27/72 (36.9%) ,24/73 (32.9%), 5/73(%) and 1/73(1.4 %) respectively. The remaining 7/2(25.9%), 7, 11/27(40.9%), 4/27(14.8%), 4/47(14.8%), 1/27(3.7%) respectively never had UTI. From this data, it was observed that the most affected age group in terms of UTIs is the

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Table 1: **Showing the frequency and percentage of UTI among Pregnant Women**

VARIABLE	FREQUENCY(N)			PERCENTAGE (%)		
	Had UTI	**Never had UTI**	**To-tal**	**Had UTI**	**Never had UTI**	**To-tal**
Prevalence of UTI	73	27	100	73	27	100

Source of Data: Primary Data 2023

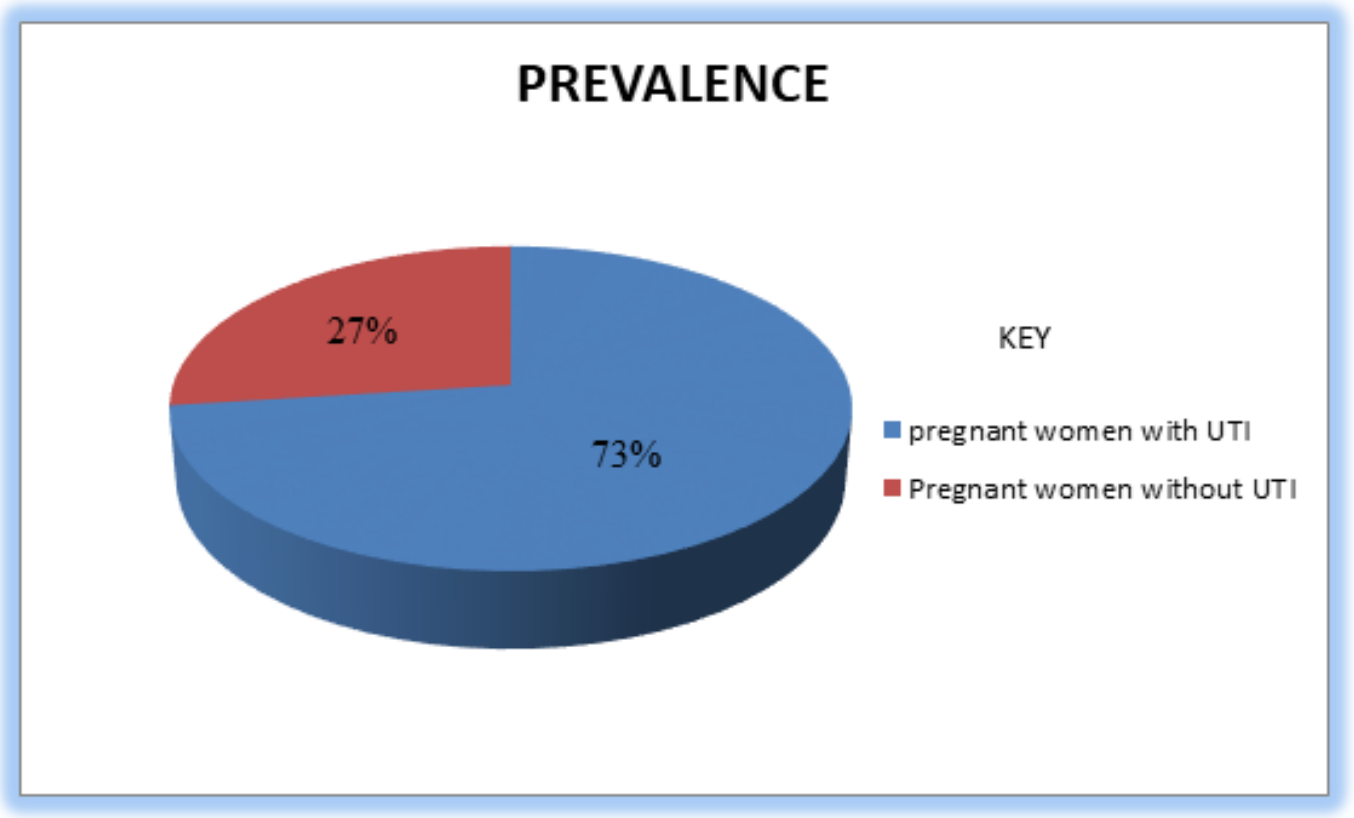

Figure 1: A Pie Chart Showing the Prevalence of UTI among Pregnant Women

Table 2: Showing the frequency and percentage of the age that is most affected with UTI among pregnant women

VARIABLE		FREQUENCY(N)			PERCENTAGE (%)	
		Had UTI	**Never had UTI**	**Total**	**Had UTI**	**Never had UTI**
AGE	18-22yrs	16	7	23	21.9	25.9
	23-27yrs	27	11	38	36.9	40.7
	28-32yrs	24	4	28	32.9	14.8
	33-37yrs	5	4	9	6.8	14.8
	38-42yrs	1	01	02	1.4	3.7
Total		73	27	100	100	100

Source of Data; Primary Data 2023

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23-27 years category, with 36.9% of pregnant women having had UTIs. The 28-32 years category follows closely behind, with 32.9% of pregnant women having UTIs. The other age groups have lower percentages of UTI occurrences.

Risk factors associated with urinary tract infection among pregnant women attending ANC at Kasangati health center IV.

3.1. Demographic factor:

3.1.1. Marital Status:

: Had UTI – 7/8(87.5 %) and 1/8(12.5%) Never had UTI .for those who were married: 66/92(71.7%) Had UTI and 26/92(28.2%) did not have UTI. The data suggested that single individuals had a higher percentage of UTI cases (87.5%) compared to those who are married (71.7%).

3.1.2. About occupation:

22/27(81.5%) housewives had UTI –and 5/27(18.5 %) Never had UTI pregnant women who reported to be farmers, 3/10(30%) had UTI, and 7/10(70%) did not have UTI. Additionally, pregnant women who had other occupations than the two 48/63(71.4 %,) had UTI and 15/63(28.6 %.) never had UTI. This implied that; individuals with the occupation of a housewife have the highest percentage of UTI cases (81.5%), followed by individuals in other occupations (71.4%), and farmers have the lowest percentage of UTI cases (30%).

3.1.3. Residence:

pregnant women lived in urban areas, 58/73() had UTI, and 15/73() did not have UTI and for rural dwellers, 15/27(55.6%) had UTI and 12/27 (44.4%) did not have UTI. Thus pregnant women residing in urban areas had a higher percentage of UTI cases (79.5%) compared to those living in rural areas (55.6%).

3.1.4. Religion:

Among Anglican: 13/20(65%) had UTI individuals and 7/20(35%) never had UTI, for Catholic: 26/35(74.2%) had UTI and 9/35(25.7%) never had UTI. Among Adventist, 17/21(80.9%) had UTI and 4/21(19.4%) Never had UTI, Pentecostal: 10/16(62.5%) had UTI and 6/16(7.5%) never had UTI Muslim: 7/8(87.5%) had UTI and 1/8(12.5%) never had UTI. Individuals belonging to the Muslim religion had the highest percentage of UTI cases (87.5%), followed by Adventists (80.9%) and Catholics (74.2%).

3.1.5. Income:

Among pregnant women who earned <50,000/=: 6/20(42.8%) had UTI and 14/20 (57.2%) never had UTI, for those who earned 50,000/=-100,000/=: 20/50 (66.7%) had UTI and 30/50 (33.3%) never had UTI individuals and remaining who earned >100,000/= 47/56(83.9%) had UTI and 09/56(16.1%) Never had UTI. Individuals with higher incomes (>50,000/=) have a higher percentage of UTI cases (83.9%), while those with lower incomes (<50,000/=) have a lower percentage of UTI cases (42.8%).

3.2. Lifestyle and hygiene-related Factors:

3.2.1. Multiple partners:

30.8% of pregnant women with UTI had multiple partners and 69.2% never had UTI. 79.3% of pregnant women with UTI did not have multiple partners and the remaining 20.7% of these never had UTI. This suggested that having multiple partners may be associated with a higher likelihood of UTI.

3.2.2. Material Undergarment:

71.4% of UTI cases occurred among pregnant women who wore cotton undergarments and 28.6% never had UTI and for those who wore non-cotton undergarments, 75% had UTI, while 25% never had UTI. This indicated that the choice of material for undergarments may not have a significant association with UTI.

3.2.3. Frequency of change of undergarment:

Of those who changed undergarments less than once a day, 36.8% had UTI, while 63.2% never had UTI, those who changed undergarments once a day, 73.1% had UTI, while 26.9% never had UTI, those who changed undergarments twice a

Table 3: **showing frequency and percentage of socio-demographic factors of pregnant women**

VARIABLE	FREQUENCY(N)			PERCENTAGE (%)	
	Had UTI	**Never had UTI**	**Total**	**Had UTI**	**Never had UTI**
Marital status **Single Married**	7 66	01 26	08 92	87.5 71.7	12.5 28.2
Occupation **House wifeFarmer Other**	22 03 48	05 07 15	27 10 63	81.5 30 71.4	18.5 70 23.9
Residence **Urban Rural**	58 15	15 12	73 27	79.5 55.6	20.5 44.4
Religion **Angli-canCatholicAdventistPentecostal Muslim**	13 26 17 10 07	07 09 04 06 01	20 35 21 16 08	65 74.2 80.9 62.5 87.5	35 25.7 19.4 37.5 12.5
Income <**50,000/=50,000/=-100,000/= >100,000/=**	6 20 47	08 10 09	14 30 56	42.8 66.7 83.9	57.1 33.3 16.1

Source of data: Primary data 2023

day, 89.8% had UTI, while 10.2% never had UTI and those who changed undergarments more than twice a day, 50% had UTI, while 50% never had UTI. This indicated that a higher frequency of changing undergarments may be associated with a lower likelihood of UTI.

3.2.4. Knowledge of UTI cases:

Among those who knew of UTI cases, 77.8% had UTI, while 22.2% never had UTI and for those who did not know of UTI cases, 60.7% had UTI, while 39.3% never had UTI. This suggested that having knowledge of UTI cases may be associated with a higher likelihood of UTI.

3.2.5. Knowledge of UTI about sex:

Among those who knew UTI can be from sex, 77.6% had UTI, while 22.3% never had UTI, and those who did not know UTI can be from sex, 63.6% had UTI, while 36.4% never had UTI. This indicated that having knowledge of UTI being related to sex may be associated with a higher likelihood of UTI.

3.2.6. Use of contaminated toilet:

Among those who used contaminated toilets, 80.6% had UTI, while 19.4% never had UTI, and those who did not use contaminated toilets, 53.6% had UTI, while 46.4% never had UTI. This suggested that using contaminated toilets may be associated with a higher likelihood of UTI.

3.2.7. Sharing toilets:

Among those who shared toilets, 68.4% had UTI, while 31.6% never had UTI and for those who did not share toilets, 79.1% had UTI, while 20.9% never had UTI. This indicated that sharing toilets may not have a significant association with UTI.

3.2.8. Douching:

Among those who used soap for douching, 66.7% had UTIs, while 33.3% never had UTIs. Among those who did not use soap for douching, 74.7% had UTIs, while 25.3% never had UTIs. This suggested that the use of soap for douching may not have a significant association with UTI.

3.2.9. Douche after sex:

Among those who douched after sex, 70.9% had UTI, while 29.1% never had UTI. Among those who did not douche after sex, 75.6% had UTI, while 24.4% never had UTI. This indicated that douching after sex may not have a significant association with UTI.

3.2.10. Anal cleaning direction:

Among those who cleaned from backward to forward, 35.3% had UTIs, while 64.7% never had

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Table 4: Showing frequency and percentage of lifestyle and hygiene-related factor associated with UTI among pregnant wome

VARIABLE		FREQUENCY(N)			PERCENTAGE (%)	
		Had UTI	**Never had UTI**	**Total**	**Had UTI**	**Never had UTI**
Multiple partner	Yes	04	09	**13**	30.8	69.2
	No	69	18	**87**	79.3	20.7
Material Undergarment	Cotton	40	16	**56**	71.4	28.6
	Non-cotton	33	11	**44**	75	25
Frequency of changeof under garment	<Once	7	12	**19**	36.8	63.2
	Once	19	07	**26**	73.1	26.9
	Twice	44	05	**49**	89.8	10.2
	>Twice	03	03	**06**	50	50
Know the cases of UTI	Yes	56	16	**72**	77.8	22.2
	No	17	11	**28**	60.7	39.3
Know UTI can be from sex	Yes	52	15	**67**	77.6	22.3
	No	21	12	**33**	63.6	36.4
Use contaminated toilet	Yes	58	14	**72**	80.6	19.4
	No	15	13	**28**	53.6	46.4
Share toilets	Yes	39	18	**57**	68.4	31.6
	No	34	09	**43**	79.1	20.9
Use soap for douching	Yes	14	07	**21**	66.7	33.3
	No	59	20	**79**	74.7	25.3
Douche after sex	Yes	39	16	**55**	70.9	29.1
	No	34	11	**45**	75.6	24.4
Anal cleaning direction	Backward to for-ward	06	11	**17**	35.3	64.7
	Forward to back-ground	67	16	**83**	80.7	19.3
Frequency of bathing	Once	06	06	**12**	50	50
	Twice	59	09	**68**	86.8	13.2
	> Twice	08	12	**20**	40	60
Frequency of weekly sexual intercourse	Once	27	14	**41**	65.9	34.1
	Twice	30	06	**36**	83.3	16.7
	>Twice	16	07	**23**	69.6	30.4

Source of Data: Primary Data 2023

UTIs. Among those who cleaned from forward to backward, 80.7% had UTI, while 19.3% never had UTI. This suggested that cleaning from forward to backward may be associated with a higher likelihood of UTI.

3.2.11. Frequency of bathing:

Among those who bathed once a day, 50% had UTI, while 50% never had UTI. Among those who bathed twice a day, 86.8% had UTI, while 13.2% never had UTI. Among those who bathed more than twice a day, 40% had UTI, while 60% never had UTI. This indicated that the frequency of bathing may not have a significant association with UTI.

3.2.12. Frequency of weekly sexual intercourse:

Among those who had sexual intercourse once a week, 65.9% had UTI, while 34.1% never had UTI. Among those who had sexual intercourse twice a week, 83.3% had UTI, while 16.7% never had UTI. Among those who had sexual intercourse more than twice a week, 69.6% had UTI, while 30.4% never had UTI. This suggested that a higher frequency of weekly sexual intercourse may be associated with a higher likelihood of UTI.

Based on the analysis, factors that seem to be associated with UTI include having multiple partners, frequency of changing undergarments, knowledge of UTI cases and UTI from sex, using contaminated toilets, cleaning direction, and frequency of weekly sexual intercourse.

3.3. Medical and Obstetric related factors:

3.3.1. Gestational Age:

Pregnant women in, 8/17(47.1%) 1st Trimester had UTI and 9/17(52.9%) never had UTI, those in 2nd Trimester39/46(84.8%) had UTI and 7/46(15.2%) never had UTI and among those in 3rd Trimester26/37(70.3%) had UTI and 11/37(29.7%) never had UTI. The data suggested that UTI prevalence is highest during the 2nd trimester (84.8%) compared to the 1st trimester (47.1%) and 3rd trimester (70.3%).

3.3.2. Parity:

Pregnant women with 0 parity 23/30(76.7%) had UTI and 2/30(23.3%) never had UTI ,1 parity 14/20(70%) had UTI and 6/20(30%) never had UTI.2 parity 14/23(60.9%) never had UTI and 9/23(39.1%) never had UTI,3 parity 16/18(88.9%) had UTI and 2/18(11.1%) never had UTI and those with 4 parity 6/9(66.7%) had UTI and 3/9(33.3%) never had UTI. The data suggested that UTI prevalence tends to be higher among women with higher parity (more previous pregnancies), particularly in women with 3 or more previous pregnancies.

3.3.3. History of UTI:

Pregnant women with history of UTI 16/64(71.9%) had UTI and 18/64(28.1%) never had UTI. Among the pregnant women, 27/36(75%) were new UTI cases since they occurred who did not have a history of UTI, and the remaining 9/36(25%) never had UTI. The data suggested that women with a history of UTI have a slightly higher prevalence of UTIs (71.9%) compared to those without a history of UTI (75%). **Have Children:** 35/56(62.5%) of pregnant women with children had UTI and 21/56(37.5%) never had UTI. 38/44(86.4%) of pregnant women without children had UTI and 6/44(13.6%) never had UTI. The data suggested that women who have children have a lower prevalence of UTIs (62.5%) compared to those who do not have children (86.4%).

3.3.4. History of Catheterization:

Pregnant women with a history of catheterization 3/17(71.9%) had UTI and 14/17(82.4%) never had UTI. Among the pregnant women, (75%) were new UTI cases that occurred who did not have a history of UTI and the remaining 9/36(25%) never had UTI. The data suggest that women with a history of catheterization have a higher prevalence of UTIs (17.6%) compared to those without a history of catheterization (85.4%).

3.3.5. History of Premature Birth:

Of pregnant women with a history of premature birth 4/12(33.3%) had UTI and 8/12(66.7%)

Table 5: **Showing the frequency and percentage of medical and obstetric factors associated with UTI among pregnant women.**

VARIABLE		FREQUENCY(N)			PERCENTAGE (%)	
		Had UTI	**Never had UTI**	**Total**	**Had UTI**	**Never had UTI**
Gestational age	1st Trimester	8	09	**17**	47.1	52.9
	2nd Trimester	39	07	**46**	84.8	15.2
	3rd Trimester	26	11	**37**	70.3	29.7
Parity	0	23	07	**30**	76.7	23.3
	1	14	06	**20**	70	30
	2	14	09	**23**	60.9	39.1
	3	16	02	**18**	88.9	11.9
	4	6	03	**09**	66.7	33.3
History of UTI	Yes	46	18	**64**	71.9	28.1
	No	27	09	**36**	75	25
Have children	Yes	35	21	**56**	62.5	37.5
	No	38	06	**44**	86.4	13.6
History of catheterization	Yes	03	14	**17**	17.6	82.4
	No	70	13	**82**	85.4	14.6
Gestational visit	1st visit	10	07	**17**	58.8	41.2
	2nd visit	21	02	**23**	91.3	8.7
	3rd visit	16	05	**21**	76.2	23.8
	4th visit	10	04	**14**	71.4	28.6
	5th visit	16	01	**17**	94.1	5.9
	>5th visit	00	08	**08**	00	100
History of premature birth	Yes	04	08	**12**	33.3	66.7
	No	69	19	**88**	78.4	21.6

Source of Data: Primary Data 2023

never had UTI. Among the pregnant women, 69/88(78.4%) with UTI didn't have a history of UTI, and the remaining 19/88(21.6%) never had UTI**.** The data suggested that women with a history of premature birth have a higher prevalence of UTIs (33.3%) compared to those without a history of premature birth (78.4%).

3.3.6. Gestational Visit:

Among **pregnant women in their** 1st visit 10/17(58.8%) had UTI and 7/17(41.2%) never had UTI, those in 2nd visit 21/23(91.3%) had UTI and 2/23(8.7%) never had UTI, 16/21(76.2%) pregnant women in 3rd visit had UTI and 5/21(23.8%) never had UTI ,10/14(71.4%) of pregnant women in their 4th visit had UTI and 4/14(28.6%) never had UTI,pregnant women in 5th visit 16/17(94.1%) had UTI and 1/17(5.9%) never had UTI. Additionally, among 8(100%) pregnant women in gestational visits>5 no UTI case occurred. The data suggested that women who had their gestational visit during the 5th week had the highest UTI prevalence (94.1%), followed by those in the 2nd week (91.3%), while those who had their visit during the >5th week had no UTI cases

4. Discussion:

The study involved 100 pregnant women and out of the 73/100 were positive giving a prevalence of 735 which is high compared to the study by the global prevalence of UTI among pregnant women which ranges between 13%-33%(Onyango

H.A et al., 2018). This is attributed to the difference in the sample size and the generalization of the global prevalence of UTI among pregnant women.

4.1. Regarding age group;

The most affected age group in terms of UTIs was the 23-27 years category, with 36.9% of pregnant women in this age group having had UTIs. This finding was similar to a study which was carried out by (Yasmin T, Sarwar MY, et al., 2018) mainly because both researchers carried out cross-sectional studies in the same region.

4.2. In relationship to socio-demographic factors;

Pregnant that were single had a higher percentage of UTI cases (87.5%), (81.5%) among housewives, (79.5%) resided in urban areas, (87.5%) among Muslim pregnant women and a higher percentage of UTI cases (83.9%) occurred among those with higher incomes (>50,000/=). These findings were similar to the finding from a study and ((the studies were carried out in resource-limited areas where the diagnosis of Shaheen HM et al., 2016) and (Younis, M et al., 2019). This is attributed to the fact that UTI is done empirically without culture and sensitivity tests.

4.3. Concerning lifestyle and hygiene factors;

Pregnant women with multiple partners, changing undergarments once a day, knowledge about UTI cases and UTIs from sex, using contaminated toilets, cleaning directions, and frequency of weekly sexual intercourse. Were the most important factors related to UTI among pregnant women.

4.4. Concerning medical and obstetric factors;

UTI prevalence was highest during the 2nd trimester (84.8%), higher among women with higher parity (more previous pregnancies), particularly in women with 3 or more previous pregnancies, women with a history of UTI had a slightly higher prevalence of UTIs (71.9%) and also among women who do not have children (86.4%), history of catheterization had a higher prevalence of UTIs (17.6%) and pregnant in a gestational visit during the 5th week had the highest UTI prevalence (94.1%)and those with a history of premature birth had a higher prevalence of UTIs (33.3%). However, there is no clear data currently that is similar or in contrast with this data, mainly because this study had an extensive interest in several lifestyle and hygiene factors.

5. Study limitations:

The duration of study was insufficient, and financial implications, limited time for data collectionand biased information from the participant

6. Conclusion:

The prevalence of UTI among pregnant women was alarmingly high since the prevalence was 73% in pregnant women in the age group of 23-27yrs were the most affected. The risk fac- tors associated with this were being single, being housewives residing in urban areas, being Muslim pregnant women, and having higher incomes (>100,000/=). As well as Pregnant women with multiple partners, changing undergarments once a day, knowledge about UTI cases and UTI from sex, using contaminated toilets, cleaning direction, and frequency of weekly sexual intercourse being in 2nd trimester (84.8%), higher parity history of UTI history of catheterization pregnant in a gestational visit during the 5th-week history of premature birth were the major factors that were associated with the prevalence of UTI among pregnant women attending kasangati health center IV.

7. Recommendation:

The study recorded a higher prevalence of UTI in pregnancy than in all the studies. Therefore it's recommended that routine UTIs screening of pregnant women should be considered, and introduction of culture and sensitivity for every pregnant woman especially those with a history of UTI

should be considered as well as made available at least at health center IV hospitals since it acts as a referral point to several pregnant women

Additionally, Empirical treatment of UTI should be minimized as sensitivity varies for each organism, for each drug, and over time as well the services should be offered at affordable prices.

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9. List of Abbreviation and Acronyms

ANC: Antenatal Clinic
ASB: Asymptomatic Bacteremia
AST: Antimicrobial Susceptibility Testing
ESBL: Extended Spectrum ß-Lactamases
HIV: Human Immune Virus
LMIC: Low- And Middle-Income Countries
MRRH: Mbarara regional referral hospital
UTI: Urinary Tract Infection
WHO: World Health Organization's

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