

**PREVALANCE AND FACTORS OF URINARY TRACT INFECTION AMONG ADOLESCENT STUDENTS OF WAMATOVU MUSLIM SEED SECONDARY SCHOOL IN MPINGI DISTRICT. A CROSS-SECTIONAL STUDY.**

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## Abstract

### Background

Urinary tract infection is the inflammatory condition of the urinary system produced by a range of microbes such as *Escherichia coli*, *Klebsiella*, and many others. The study aimed to determine the prevalence of urinary tract infection among adolescent students of Wamatovu Muslim Seed Secondary School in Mpingi District.

### Methodology

In a cross-sectional descriptive study design with a quantitative approach, the study population was based on all adolescent students of Wamatovu Muslim Seed secondary school in the Mpingi district.

### Results

Majority of the respondents 75(75%) were female and 25(25%) were males. 85 (85%) have never suffered from UTI and only 15 (15%) have ever suffered from UTI. 60 (60%) had knowledge on UTI while 40(40%) didn't have knowledge on UTI. 38(38%) reported poor personal hygiene as the pre-disposing factor to UTIs, 22 (22%) reported multiple sexual partners, 20(20%) didn't know any, 16(16%) reported all the above and 4(4%) believed witchcraft factor. 30(30%) mentioned good personal hygiene, 25(25%) mentioned being with one sexual partner and 10 (10%) mentioned that taking water is a way of managing UTI. 50(50%) said they clean their toilet and bathrooms twice daily and at least 5(5%) said they never clean. 60 (60%) reported that they keep their underwear under the bed after washing, and the least 10 (10%) said they put it under the sun.

### Conclusion

The prevalence of UTI infection was 15%, and the respondents had knowledge and preventive measures of Urinary tract infections.

### Recommendation

Schools to improve the hygiene and add more water sources for students to access them easily. The government through the local health facilities sensitive women about the importance of personal hygiene and increased water intake in the reduction of urinary tract infection.

**Keywords:** Prevalence and factors, Urinary Tract Infection, Adolescentstudents, Wamatovu Muslim seed secondary school.

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## Background

Urinary tract infection is the inflammatory condition of the urinary system produced by a range of microbes such as *Escherichia coli*, *Klebsiella*, and many others. Clinical symptoms of UTI may include painful urination, pain above pubic bone, cloudy urine, increased pressure in the suprapubic area or unpleasantness, abdominal discomfort, burning sensation during urination, foul smell of urine, fever, urgency and frequency of urination increased back pain, vomit, Infection, immediacy, cold sweats, and other clinical manifestations of a urinary tract infection can usually happen (Rani Kandula et al., 2022).

UTI is the major cause of morbidity in hospital and community settings, and it occurs in all age groups and both genders. It is one of the most common infections to plague man worldwide and causes serious health problems affecting millions of people each year (Sd, 2021). UTI is the typical type of infectious disease, which can occur for all groups of populations. However, some groups of people are more prone to UTIs than others, such as females are at a higher risk compared to males due to their shorter urethra, which is continually contaminated with pathogens from the vagina and rectum (Bokolia, 2016). Urinary tract infection is the second most common infectious disease affecting more than 150 million people

globally annually Uropathogenic E.coli (UPEC), the predominant cause of UTI, can occur as a biofilm associated with antimicrobial resistance (Mlugu, 2023). The prevalence of community-associated UTI is 0.7% and the main risk factors are age, history of UTI, sexual activity, and diabetes whereas healthcare-associated UTI frequency is 12.9%,19.6%, and 24% in the United States, Europe, and developing countries respectively while in Urology department, the prevalence is 5.1% (Tandogdu,2016). In East Africa, it was reported that the prevalence of UTI among women presenting with lower abdominal pain was found to be 26.7%. UTI is the most common bacterial infection in pregnancy as it occurs more frequently in developing countries with low socio-economic populations (Nabbugodi, 2017). In Uganda, the prevalence of UTI in females was found to be 14.6% and had a 20-60% drug resistance rate among women in Mulago Hospital (Fred, 2015). The study aimed to determine the prevalence of urinary tract infection among adolescent students of Wamatovu Muslim Seed Secondary School in Mpingi District.

## **Methodology**

### **Study design**

The study used was a cross-sectional descriptive study design with a quantitative approach. The design was chosen because it enabled the researcher to conduct the study at one point in time.

### **Study area.**

The study was carried out at Wamatovu Muslim Seed Secondary School in the Mpingi district from July 2023 to August 2023.

### **Study population.**

All adolescent students of Wamatovu Muslim Seed Secondary School in Mpingi district

### **Sample size determination**

The study sample size will be calculated using statistical formulae for sample size estimation by Kish Leslie, (1965) as shown below:

1965) which states that:

Where: N=sample size required

Z=confidence interval

P=prevalence

q =1-P

d =sampling error

Therefore N=

N= 100 respondents

Hence our sample size will be 100 students.

### **Sampling technique.**

The selection of respondents to be interviewed was by simple random probability sampling.

### **Sampling procedure.**

The population targeted was identified, the sample size to be used was decided, the sample was randomly selected, and the data was then collected from the sample.

### **Data collecting Method.**

Data was collected using questionnaires.

### **Data collection tools**

The researcher used an interview administered semi-structured, a questionnaire, pens, a notebook, and a ruler for data collection.

### **Data collection procedure.**

The researcher used an interview schedule designed in English, a pen, and a notebook for data collection. Each respondent was told the purpose of the study and questions were explained for easy understanding and the interview was carried out on every respondent.

## **Study variables**

### **Dependent variable**

The prevalence of urinary tract infection among adolescent students

### **Independent variable.**

The knowledge and preventive measures of UTI infection among adolescent students

### **Quality control.**

This section was divided into two subsections; validity and reliability of the research instruments.

### **Validity of the study.**

Validity refers to how well a test or research instrument measures what was supposed to measure. The researcher pre-tested the instruments to determine the content validity of the items. To establish the validity, the questionnaire was subjected to scrutiny by the supervisor who evaluated the relevance of the items in the instruments to the objectives. The supervisor rated each item on a scale and recommendations were used to finally modify questions and the format of the tools that could solicit the expected data.

### **Reliability of the Study.**

The questions in the questionnaire were designed to take into consideration the issues related to the problem and goals of the study. Reliability determines whether the research instrument is reliable and therefore be adopted for collecting data. The reliability of the questionnaire was done through a pilot study instrument. Data collected from a sample of respondents was analyzed and computed using SPSS (Statistical Package for the Social Sciences) software.

**Inclusive criteria.**

All students between 13 and 19 years old at Wamatovu Muslim Seed Secondary School in Mpingi district, who fully consented and completed their questionnaires.

**Exclusive criteria.**

All students below 13 years and above 19 years, those who didn't consent, and those who consented but didn't fill out the questionnaires were not included in the study

**Ethical considerations.**

An introductory letter was obtained from the school authority and introduced the researcher to the Headteacher of Wamatovu Muslim Seed Secondary School. The permission to carry out the study will be obtained from the school administrators in charge and other concerned committees of the school. An informed consent was sought and respondents were assured the confidentiality of the information.

**Data analysis and presentation**

Data collected was analyzed using Microsoft Excel SPSS software version and data presentation was in the form of pie chart, frequency, Bar graphs, and distribution table.

**Results**

**Socio-demographic data**

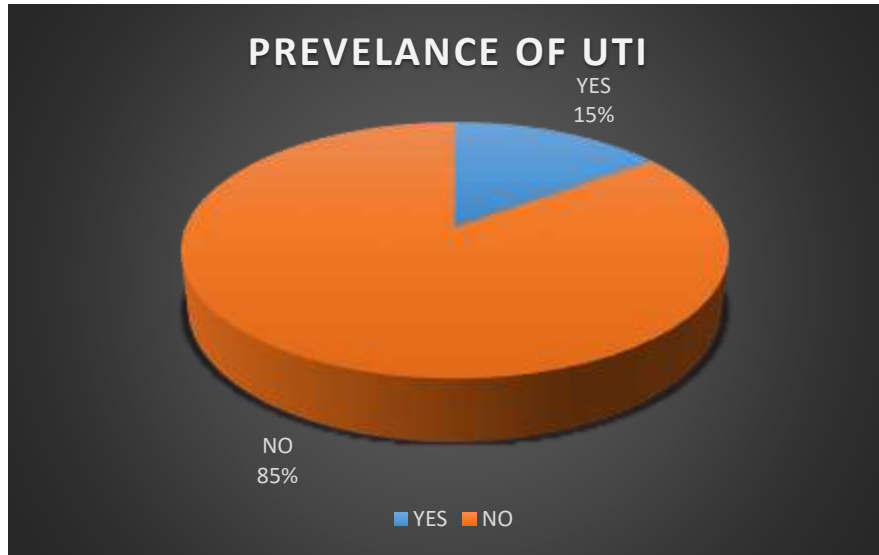
**Table 1: Showing the Sociodemographic data of respondents N= 100**

DEMOGRAPHIC DATA	VARIABLES	FREQUENCY
<b>AGE</b>	13-14	10
	15-16	30
	17-18	45
	19	15
<b>TOTAL</b>		<b>100</b>
<b>GENDER</b>	Female	75
	Male	25
<b>TOTAL</b>		<b>100</b>
<b>RELIGIOUS AFFILIATION</b>	Catholic	15
	Muslims	60
	Anglican	10
	Born again	5
	Others	10
<b>TOTAL</b>		<b>100</b>
<b>CLASS</b>	Sn1- Sn 2	20
	Sn3-Sn4	35
	Sn5-Sn6	45
<b>TOTAL</b>		<b>100</b>

*Source: Primary Data 2023*

**PREVALENCE OF URINARY TRACT INFECTION**

**Figure 1: Shows the respondents that have ever suffered from Urinary Tract Infection N=100**



Source: Primary Data 2023

Figure 1, shows that the majority 85 (85%) have never suffered from UTI and only 15 (15%) have ever suffered from UTI.

**Table 2: shows the sex and frequency of respondents that have ever suffered from UTI infection N=15**

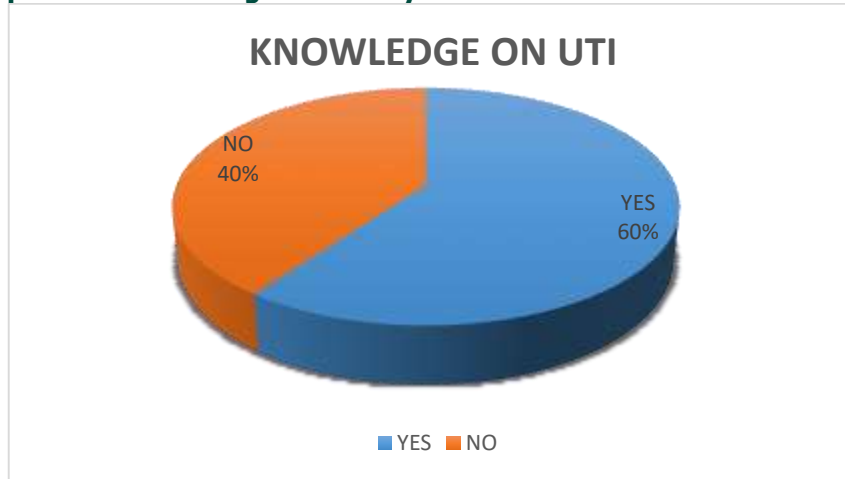
RESPONSE	VARIABLE	NUMBER	PERCENTAGE
EVER SUFFERED FROM UTI	Female	11	73%
	Male	4	27%
FREQUENCY OF INFECTION	1 time	12	80%
	2 times	2	13%
	more than 3 times	1	7%

Source: Primary Data 2023

Table 2 shows that the majority that have suffered from UTI were females 11(73%) with only 4(27%) males. Most of the respondents handle the infections only once 12(80%) with 2(13%) twice and only 1 (7%) three times.

## KNOWLEDGE OF URINARY TRACT INFECTION

**Figure 2: Response to knowledge of Urinary Tract Infection N=100**



Source: Primary Data 2023

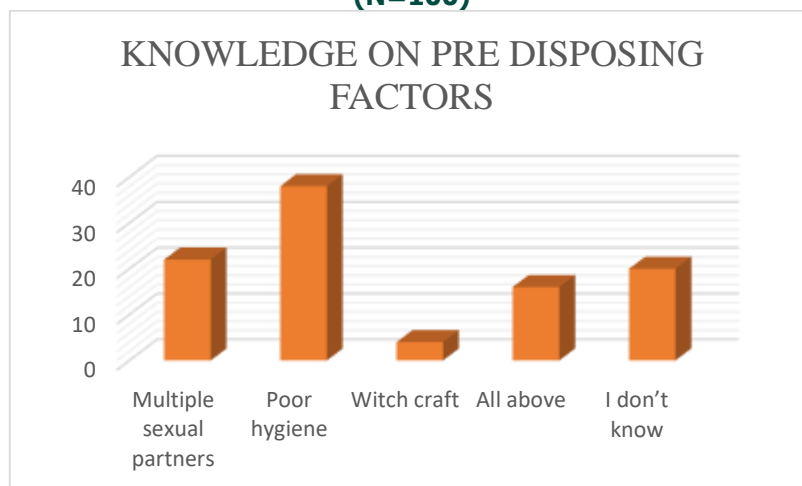
Figure 2, shows majority 60 (60%) of the respondents knew about UTIs while 40(40%) didn't know about UTIs

**Table 3: respondents' knowledge about the pre-disposing factors of UTI and beliefs (N=100)**

PREDISPOSING FACTORS	FREQUENCY	PERCENTAGE %
Multiple sexual partners	22	22
Witchcraft	04	04
Poor hygiene	38	38
All above	16	16
I don't know	20	20

Source: Primary Data 2023

**Figure 3: respondents' knowledge about the pre-disposing factors and beliefs of UTI (N=100)**

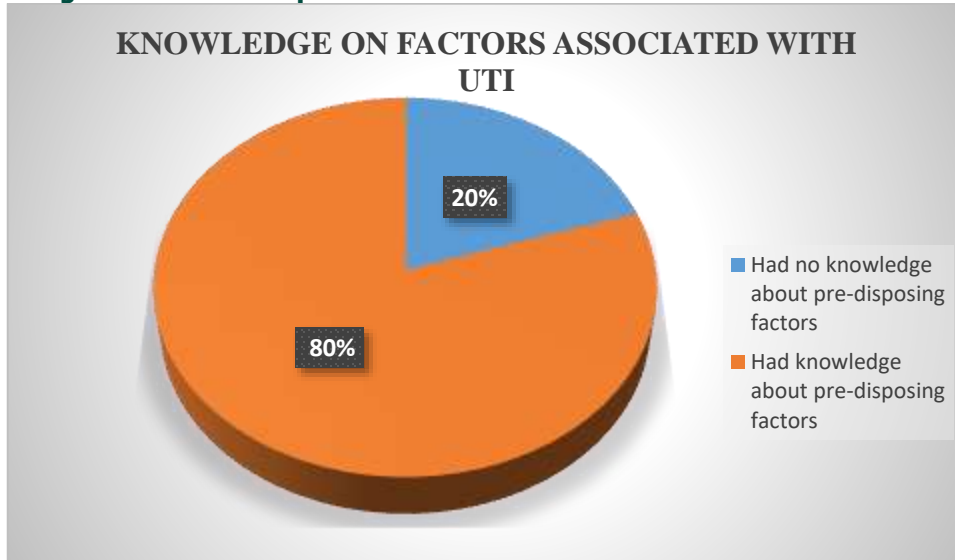


Source: Primary Data 2023

Table 3 and Figure 3, show that most of the respondents 38(38%) reported poor personal hygiene as the pre-disposing factor to UTIs, 22 (22%) reported multiple

sexual partners, 20(20%) didn't know any, 16(16%) reported all the above and 4(4%) believed witchcraft as the pre-disposing factor.

**Figure 4: shows respondents on factors associated with UTI N=100**



Source: Primary Data 2023

Figure 4, shows most of the respondents 80(80%) knew about the pre-disposing factors and 20 (20%) didn't know about the pre-disposing factors.

**Table 4: Respondents knowledge about the way of managing UTI (n=100)**

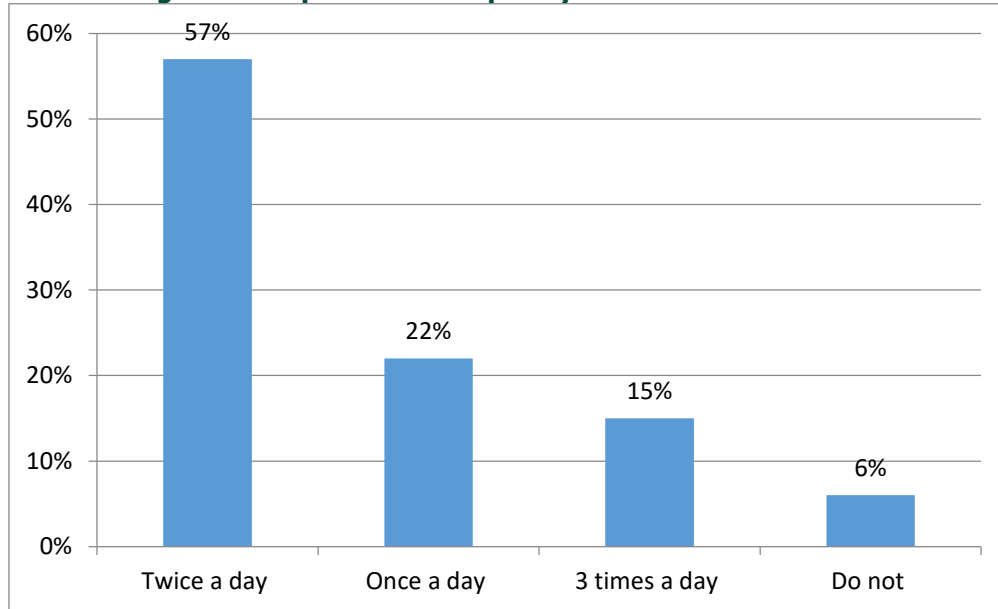
WAY OF MANAGING UTI	FREQUENCY	PERCENTAGE
Good personal hygiene	30	30
One sexual partner	25	25
Taking water	10	10
I don't know	35	35

Source: Primary Data 2023

Table 4 shows that most of the respondents 35(35%) didn't know any way of managing UTI and 65 (65%) knew ways of managing UTI. Out of the 65%, 30(30%) mentioned good personal hygiene, 25(25%) mentioned being with one sexual partner and 10 (10%) mentioned that taking water is a way of managing UTI

## PREVENTION MEASURES OF UTI

**Figure 5: respondent's frequency of water intake N=100**



Source: Primary Data 2023

Figure 5, the majority of the respondents 57% mentioned that they take water twice a day, 22% take water once a day, 15% take water 'three times a day, and 6% do not

take water. However, they also mentioned that they take water based on weather conditions where in cold weather less water.

**Table 5: respondent's frequency of cleaning the washroom and personal hygiene of underwear. N =100**

characteristics	variables	Frequency N= 100
Cleaning of Toilets and bathroom	Once day	5
	Twice	50
	Three-time	10
	Regular	30
	Never	5
Personal hygiene of underwear's.	Under the sun	10
	Bathroom	30
	Under the bed	60

Source: Primary Data 2023

Table 5, most respondents said they clean their toilets and bathrooms twice daily 50(50%) and at least 5(5%) said they never clean. Most of the respondents also reported that they keep their underwear under the bed after washing 60 (60%) and only 10 (10%) said they put it under the sun.

## Discussion

### Prevalence of urinary tract infection

According to the study, the prevalence of UTI infection was 15%. This could be because of their age group and is similar to a study in Nigeria among adolescents aged 10-19 years. They found that the prevalence of UTI was 9.4%, the prevalence of UTI was higher among adolescents who had a history of UTI, those who had early

onset sexual activity, and those who had poor hygiene practices (Odubamowo et al, 2018)

The study findings showed that the majority of the respondents that had ever suffered from UTI were females 11(11%) and only 4(4%) were males. This could have been because of poor menstrual hygiene practices, early onset of sexual activity, urinary habits, and short urethra that predispose females to UTI. This is in line with a study carried out in Nepal among adolescents aged 13-19 years that found that the overall prevalence of UTI was 8.6%, with females being more affected than males 11.7%, 1.4% respectively and factors such as poor genital hygiene, history of UTI, and early onset of sexual activity were the risk factors associated with UTI. (Shrestha et al, 2021).

The study findings are also similar to those found in a study carried out in India that showed the prevalence of UTI as 14.2%, with females being more affected than males 17.9% vs. 6.8%. (Rani et al, 2020)

### Knowledge of urinary tract infection

The study shows that the majority 60 (60%) of the respondents knew about UTI while 40(40%) didn't know about UTI. This could have been due to the good health education at schools. This is in line with a study done in India that found that 202 (65.79%) did not know about UTIs whereas 105 (34.21%), due to history, knew UTIs..(Bokolia, 2016)

Results also showed respondents reported the predisposing factor to UTIs as poor personal hygiene at 38%, multiple sexual partners at 22%, 4% reported witchcraft, 16% reported all of the above and 20% didn't know any. This is in line with a study carried out in Gitwe Hospital Rwanda that showed causes of UTI as lack of hygiene (20.9%), unprotected sexual intercourse with infected persons (26.4%), lack of underwear contact with sunlight (23.1%), no urination after intercourse (16.55%), like insufficient water (13.2%) (Bikorimana, 2018)

### Prevention measures

The study findings revealed preventive measures for UTIs as follows,57% mentioned that they take water twice a day, 22% take water once a day, 15% take water 'three times a day, and others 6% do not take water. This is in agreement with results from the (Women's Health Guide, 2017), which reported that drinking plenty of water and releasing yourself often is the simplest way to prevent UTI as it helps to flush out bacteria from the bladder. They also said wiping from front to back, especially after a bowel movement, washing up after sex and urinating after it, steering clear of irritating feminine products, and rethinking your birth control can help in preventing and controlling UTI/ bacterial growth.

Results also revealed that most respondents said they clean their toilets and bathrooms twice daily 50(50%) and at least 5(5%) said they never clean. Most of the respondents also reported that they keep their underwear under the bed after washing 60 (60%) and only 10 (10%) said they put it under the sun. this could be because of embracement and shame among students to leave their underwear in the open This is in line with the study done by (Trace,2018) taking showers instead of baths as showers prevent bacteria from entering the urethra while baths don't. She also suggested that women should avoid douching as douches can irritate the urethra and possibly lead to UTI as well as vagina irritation plus wearing cotton underwear to ease moisture escape and avoid vaginal dryness. She suggested that all these practices could help prevent the transmission of UTIs

### Conclusion

The prevalence of UTI infection was 15%, and the respondents had knowledge and preventive measures of Urinary tract infections.

### Recommendations

Schools to improve on the hygiene and add more water sources for students to access them easily

The government through the local health facilities sensitive women about the importance of personal hygiene and increased water intake in the reduction of urinary tract infection.

### List of Abbreviations

**UTI:** Urinary Tract Infection

### Source of funding

Had no source of funding.

### Conflict of interest

There's no conflict of interest.

### Author Biography

Sharifah Nanyiti, is a student at Medicare Health Professionals College, pursuing a diploma course in Clinical Medicine and Community Health.

Daisy Kiyingi. N is a tutor at Medicare Health Professionals' College.

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