

KNOWLEDGE, ATTITUDE AND PRACTICES TOWARDS THE PREVENTION OF URINARY TRACT INFECTIONS AMONG FEMALE STUDENTS AT KAMPALA SCHOOL OF HEALTH SCIENCES, WAKISO. A CROSS-SECTIONAL STUDY.

Render Nalwadda*, Amiri Were.
Kampala school of health sciences

Abstract

Background

According to the CDC, UTIs are common infections that happen when bacteria often from the skin or rectum enter the urethra and affect the different parts of the urinary tract. The study aims to assess the Knowledge attitudes and practices toward the prevention of urinary tract infections among female students.

Methodology

A descriptive cross-sectional study using a random sampling method until 50 respondents were obtained. Students at Kampala School of Health Sciences were selected by convenient sampling. Data was collected through face-to-face interviews using interview guides and pre-tested semi-structured questionnaires.

Results

Majority of the respondents were aged 21-23years (50%) and 5(10%) were above 26year. (96%) were single and (4%) were married. (72%) gave the meaning of UTIs as the inflammation of both the urethra and the urinary bladder and the least (8%) defined UTI as the inflammation of the vagina and (20%) defined it as inflammation of the urethra, urinary bladder, and vagina. The majority (80%) strongly agreed that early diagnosis and treatment of UTIs can reduce their complications and (4%) disagreed. (70%) strongly agreed that UTIs are common and (10%) disagreed. (70%) cleaned their perineum from front to back after a bowel movement whereas (30%) didn't. (64%) always emptied their bladder frequently while (36%) emptied their bladder sometimes meaning held urine for a long time.

Conclusion

Participants had adequate knowledge and reasonable attitude towards UTIs prevention with Most Participants maintaining good hygiene practices that greatly helped in reducing the risk of transmission of Urinary tract infections.

Recommendation

The administrators of Kampala School of Health Sciences should organize training about UTI prevention for female students such that they improve their knowledge of how to manage UTIs in case they are infected.

Keywords: Urinary tract infections, Hygiene practices, Kampala School of Health Sciences.

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Corresponding Author: Render Nalwadda*

Email: rendernalwadda@gmail.com

Kampala school of health sciences

Background

According to the CDC, UTIs are common infections that happen when bacteria often from the skin or rectum enter the urethra and affect the different parts of the urinary tract. UTIs and their associated complications are the cause of nearly 150 million deaths per year worldwide to the International Research Journal of Public and Environmental Health, 2019. There is a link between the prevalence of UTI among female students and the level of personal hygiene or the state of toilet facilities in hostels and sexual activity. UTIs are mostly caused by *E. coli*. UTIs are a major source of morbidity in young women and generate substantial healthcare costs. Several recommendations could help women avoid UTIs and the most popular ways include wiping in the correct direction, increasing water consumption, emptying the bladder, and

preventing the use of spermicidal jelly. UTIs are also classified as uncomplicated or complicated (depending on the trigger factors of the infection) or they can be primary or recurrent (depending on the nature of occurrence) and they can also be community-associated (CAUTI) or healthcare-associated (HAUTI).

UTIs are caused by both gram-positive and gram-negative bacteria. A recent study carried out in the Bushenyi district in Uganda showed that the prevalence of UTIs was 22.3% with *Escherichia coli* being the most prevalent bacteria uropathogenic at 61.19% followed by *Staphylococcus aureus* at 14.93%, *Klebsiella pneumoniae* 5.6%, *E. fecalis* 5.6%, *M. morgani* 4.8%, *Citrobacter species* 2.99%, *Acinetobacter* 1(1.49%), *Enterobacter species1* (1.49%), and *P. aeruginosa*(1.49%)(Martin Odoki, 2019). Untreated

UTI is associated with complications like pyelonephritis, severe sepsis and septic shock, acute and chronic renal failure, cystitis, and urine incontinence. In a study carried out among female students about the assessment of knowledge and prevention practices of urinary tract infections among female students residing in the University of Jos, the findings revealed that the majority (82.2%) of respondents know UTI. Respondents knew that cleaning the perineum from front to back, keeping the genital area clean and dry, avoiding fluids that irritate the bladder such as alcohol, and emptying the bladder frequently when full, 69.7% are aware that cleaning the perineum from front to back helps in prevention of UTI. 82.2% know that keeping the genital area clean and dry helps in the prevention of UTI. 53.9% know that avoiding fluids that irritate the bladder aids in UTI prevention. In comparison, 71.1% know that emptying the bladder frequently when full helps in the prevention of UTI, (Mafuyai Joseph Mangai, 2019).

In Malaysia regarding awareness, knowledge, and attitude on urinary tract infection among Government Secondary School Students in Shah Alam Malaysia, it showed that the total positive attitude was 80% while less than 20% had a negative attitude. Globally, despite the efforts and services from governments and non-government organizations more than 404.6 million individuals presented with UTIs and nearly 236,786 people died of the infections as well as their complications. Approximately 3-5% of girls have UTIs. Symptomatic UTI cases reported among school-going adolescents are 7.8% (Xiao, et al., 2022) 40-50% of females have a UTI at least once a lifetime and 20-30% relapse within 1-2 years (Geerlings, M & Kligman, 2014) 40-50% of females have a UTI at least once a lifetime and 20-30% relapse within 1-2 years. In Sub-Saharan Africa, 32.12% is the prevalence of 67.6% was recorded in South Africa, followed by Nigeria at 43.65% and Zambia at 38.25% with an overall among female students at 10.05% prevalence. In East African countries, research has shown that the prevalence of UTIs is roughly 9% in developed countries and 45% in developing countries among children seeking medical attention for any cause. The few studies done in Tanzania have shown a prevalence range from 16.7% to 39.7% and the overall prevalence rate of UTIs in Kenya is 27.6% with women's prevalence rate being significantly high with a percentage of 80.7%. In Uganda, researchers have shown that 37.5% of women are suffering from a UTI whereas 41.9% are cases caused by Escherichia Coli. 9% of the females relapse of the infection per year (G& Turyatuga, 2021). At Kampala School of Health Sciences, 100 students reported to the sickbay of the school in November with different issues. 80 students (80%) happened to be of the female gender. Of the 80%, 35 students (44%) presented with symptoms of different UTIs and they were all diagnosed with UTIs. The study aims to assess the Knowledge attitude and practices toward the prevention of urinary tract infections

among female students at Kampala School of Health Sciences, Wakiso.

Methodology

Study design

The study design used was a descriptive cross-sectional study using a random sampling method until 50 respondents were obtained. Questionnaires were used for data collection. Students at Kampala School of Health Sciences were selected by convenient sampling. Data was collected through face-to-face interviews using interview guides and pre-tested semi-structured questionnaires.

Study area

This research was carried out in Kampala School of Health Sciences, Buloba in Busiro East constituency, Busiro County, Wakiso District, in Central Uganda Region and is approximately 26km by road west of Kampala (Uganda's capital and largest city).

Study population

The targeted population for the study were the female students of Kampala School of Health Sciences, Buloba who agreed and consented to participate in the study.

Study tools

Questionnaires were designed and distributed among female students of Kampala School of Health Sciences, Buloba.

sample size determination

The sample size was determined using Burton's formula (1952) as below;

$S=2(QR) O$ WHERE;

S=required sample size

Number of days the researcher takes to collect data

R=Maximum number of people per day

Maximum time the interviewer spends on each participant

$S=(10 \times 5) \times 1$ hour

S=50 respondents

Therefore, 50 respondents were used for the study.

Study variables

Dependent variable

The dependent variable in this study was female students.

Independent variable

The independent variables were knowledge attitude and practices towards the prevention of Urinary Tract Infections.

Study frame

This was from the list of names of female students of Kampala School of Health Sciences Buloba campus obtained as a study frame.

Sampling technique

A convenient sampling technique was used to select study participants from the study population. This is because this technique was easy to administer for a large population and it gave equal chances for all study participants to be enrolled in the study.

Sampling procedure

A convenient sampling procedure was employed to select the participants of the study. All female students who were present and consented were sampled.

Data collection

Data was collected using a closed-ended questionnaire which was used to interview the respondents thus obtaining qualitative data.

Data management

Questionnaires were kept out of reach of other people in a double-locked cupboard, the soft copy was protected by a password.

Quality control

The quality of data was enhanced by using questionnaires and a trained research assistant. I ensured that questionnaires were filled correctly by allowing enough time to fill them. I explained technical terms to the

participants. Questionnaires were printed and pretested before administrating them in a full study to guarantee reliability and validity.

Ethical considerations

A letter of introduction was obtained from the Kampala School of Health Sciences Ethics Committee after approval of the research proposal. Informed consent was obtained from the respondents after explaining the nature and purpose of the study. It was emphasized that participation is voluntary and that they can withdraw from the study at any time without penalty.

The interviews were conducted privately and the respondents were assured that their information would be treated as being strictly confidential. The principle of autonomy was practiced where all participants will receive enough information about the study and this enabled them to exercise their rights during decision making whether to participate or not. Students (respondents) were thanked for their contribution.

Results

Socio-demographic characteristics

The questionnaire contained questions on social and demographic characteristics including age, religion, marital status, and nationality.

Table 1: Showing socio-demographic characteristics of respondents.

Variables	Frequency (N=50)	Percentage (%)
AGE (years)		
18 – 20	5	10
21 – 23	25	50
24 -26	15	30
Above 26	5	10
RELIGION		
Born again	10	20
Protestant	8	16
Catholic	18	36
Muslim	10	20
Adventist	4	8
Others	0	0
MARITAL STATUS		
Single	48	96
Married	2	4
Divorced	0	0
NATIONALITY		
Ugandan	50	100

Table 1, the majority of the respondents were aged 21-23 years (50%) and the least were above 26year 5(10%).

Many of them were Catholic (36%) and the least were Adventists (8%) Most of the respondents were single

(96%) and (4%) were married. All the respondents were Ugandans by Nationality

Knowledge of female students towards UTI prevention

Figure 1: Shows the distribution of respondents who were aware of UTIs.

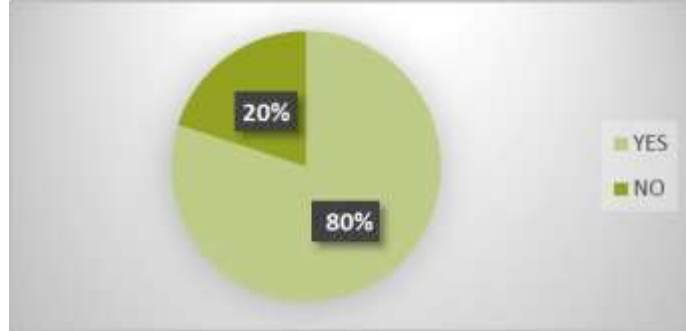


Figure 1 the majority of the respondents (80%) were aware of urinary tract infections and (20%) weren't aware of urinary tract infections.

Figure 2: Distribution of students who knew the meaning of urinary tract infections.

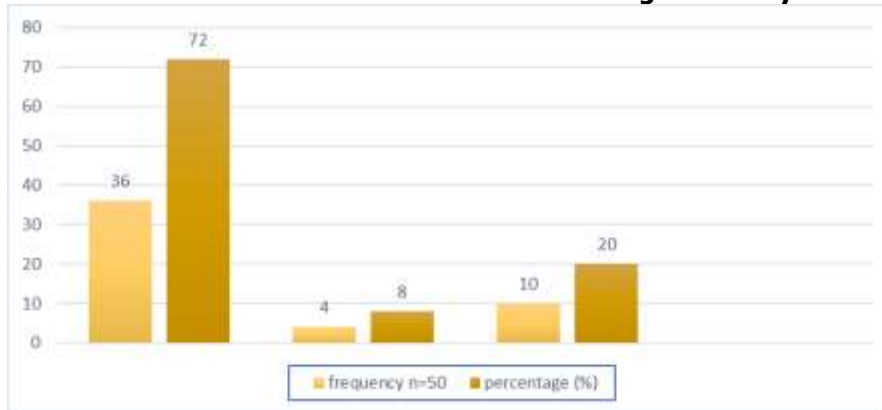


Figure 2, Majority of the respondents (72%) gave the meaning of UTIs as the inflammation of both the urethra and the urinary bladder and the least (8%) defined UTI as

the inflammation of the vagina. And then (20%) of respondents defined it as inflammation of the urethra, urinary bladder and vagina.

Figure 3: Distribution of respondents' views on common causes of UTIs.

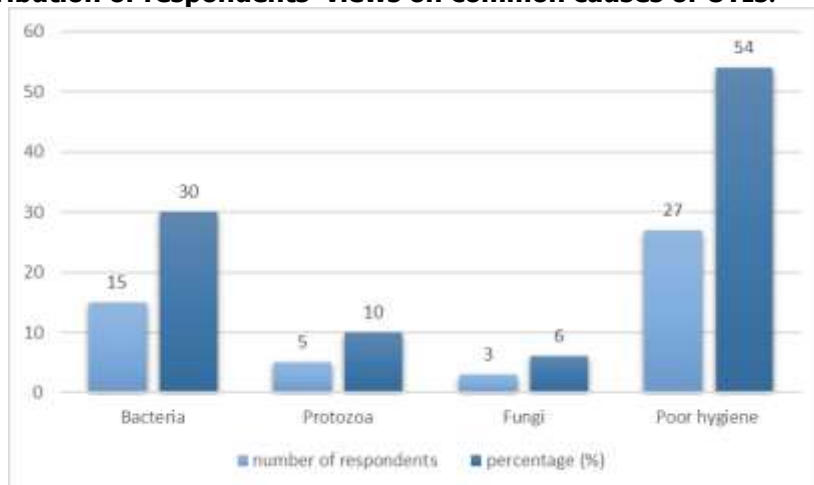


Figure 3 The majority of the respondents (54%) gave poor hygiene as the most common cause of UTIs whereas the minority (6%) answered protozoa was a common cause of UTIs.

Table 2: Shows the number of students who suffered from UTIs and the relapses

RESPONSES		FREQUENCY n=50		PERCENTAGE (%)
<u>Have you ever</u>				
<u>suffered from UTI</u>				
YES		35		70
NO		15		30
<u>Did it reoccur?</u>				
		n=35		
YES		23		46
NO		12		24

Table 2 the majority (70%) of the respondents have ever suffered from these infections and (30%) of the respondents had never suffered from urinary tract infections. However, (46%) of those who suffered from UTIs suffered from reoccurrences, and (24%) didn't suffer from reoccurrence.

The attitude of female students towards UTI prevention.
Figure 4: Shows the distribution of respondents if they believed that UTIs are preventable

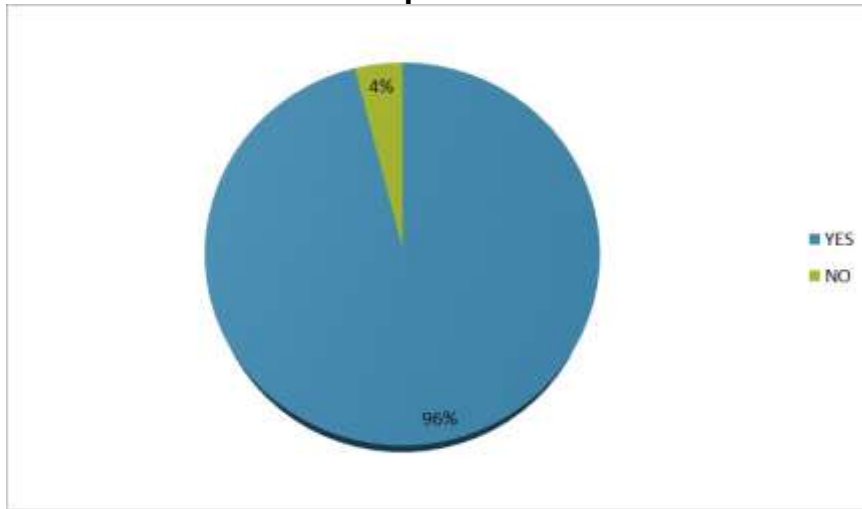


Figure 4 shows that the majority of the respondents (96%) believed that UTIs are preventable whereas the least of the respondents (4%) remaining didn't believe whether UTIs can be prevented or not.

Table 3: Showing distribution of respondents according to who believed that drinking plenty of water regularly reduces the risk of getting UTIs.

RESPONSES	FREQUENCY	PERCENTAGE (%)
Agree	30	60
Disagree	15	30
Sometimes	5	10
Total	50	100

Results in Table 3, showed that a moderate number of the respondents (60%) agreed that drinking plenty of water regularly reduces the risk of getting UTIs whereas the least number of respondents (10%) believed that

sometimes drinking plenty of water can reduce the risks of getting UTIs. However, (30%) of the respondents disagreed.

Figure 5: Showing the distribution of respondents according to who agreed that early diagnosis and treatment of UTI can reduce its complications

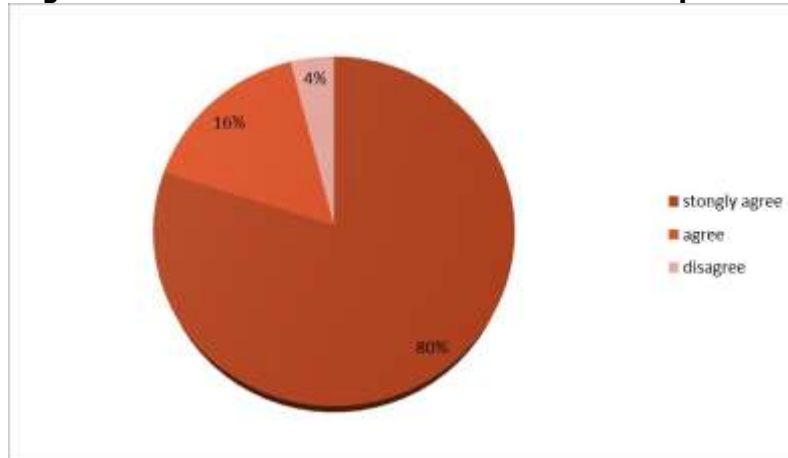
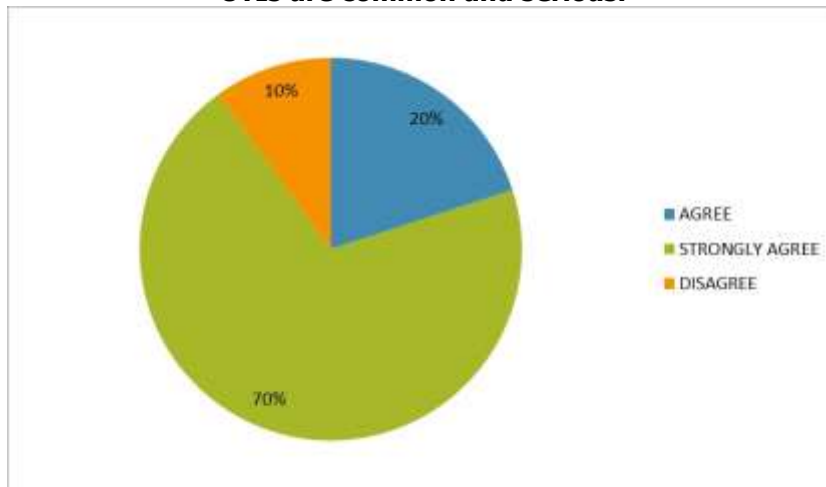


Figure 5, the majority (80%) of respondents strongly agreed that early diagnosis and treatment of UTIs can reduce its complications and yet a small number (4%) disagreed.

Figure 6: Shows the distribution of respondents according to those who believed that UTIs are common and serious.



The results show that (70%) of the respondents strongly agreed that UTIs are common and serious whereas the least number of respondents (10%) disagreed.

Practices of female students towards UTI prevention.

Figure 7: Showing the distribution of the respondents according to who cleaned their perineum from front to back after a bowel movement.

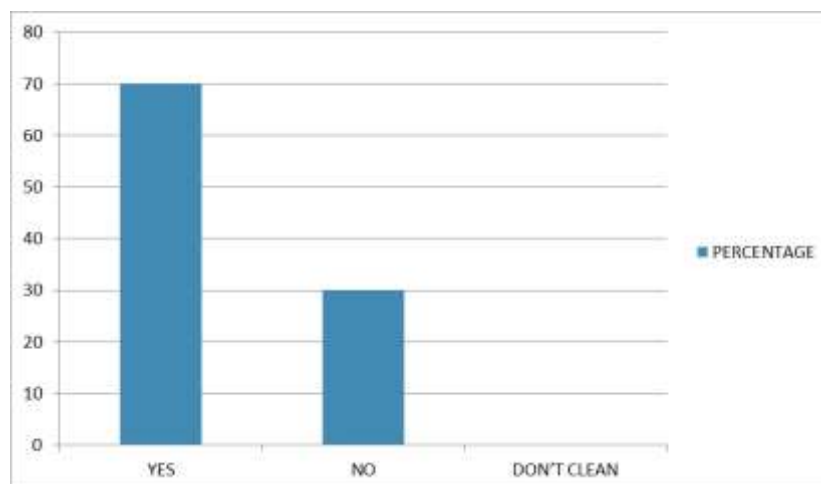
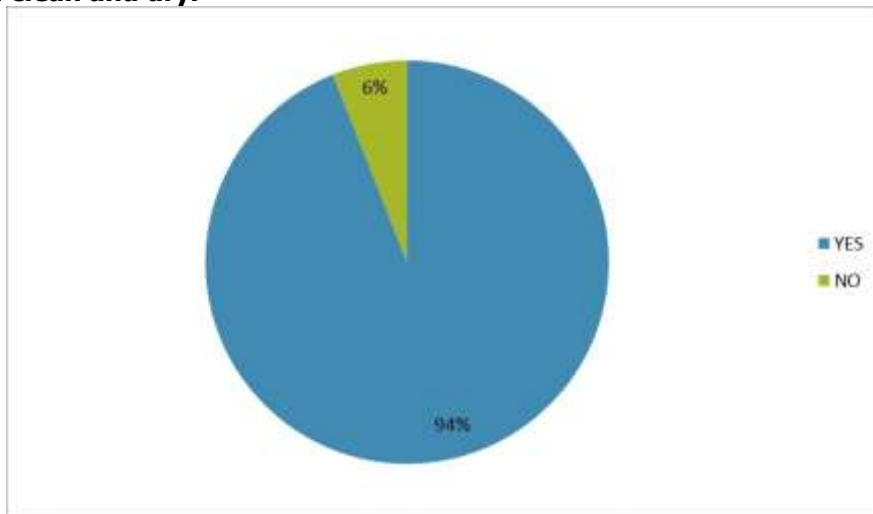


Figure 7 shows that the majority of respondents (70%) cleaned their perineum from front to back after a bowel movement whereas (30%) respondents didn't clean their perineum from front to back after a bowel movement.

Figure 8: Shows the distribution of respondents according to whether they kept their genital area clean and dry.



The figure shows an overwhelming number of the respondents (94%) who keep their genital area clean and dry whereas a small number of the respondents (6%) don't keep their genital area clean and dry.

Figure 9: Shows the distribution of respondents on how they emptied their bladder frequently and did not hold urine for long.

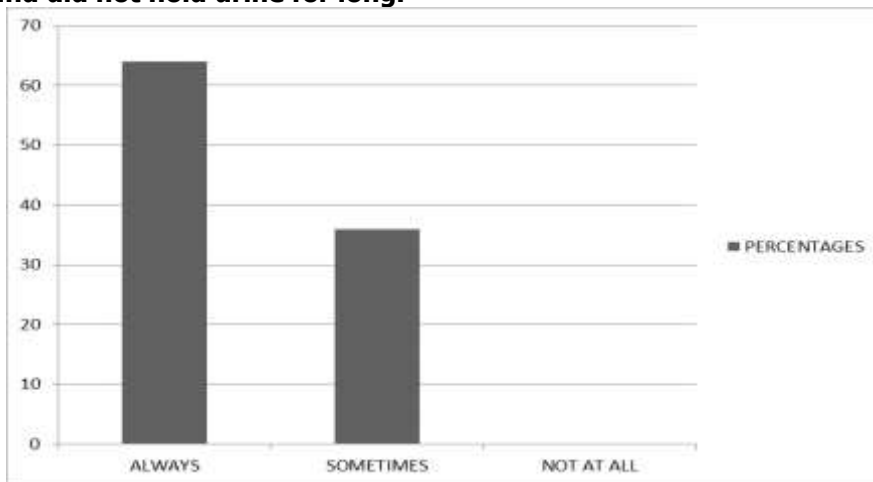


Figure 9, shows a moderate number of respondents (64%) always emptied their bladder frequently and they didn't hold urine for a long time while the least of the respondents (36%) emptied their bladder sometimes meaning held urine for a long time.

Figure 10: Shows the distribution of respondents and how often they drank water.

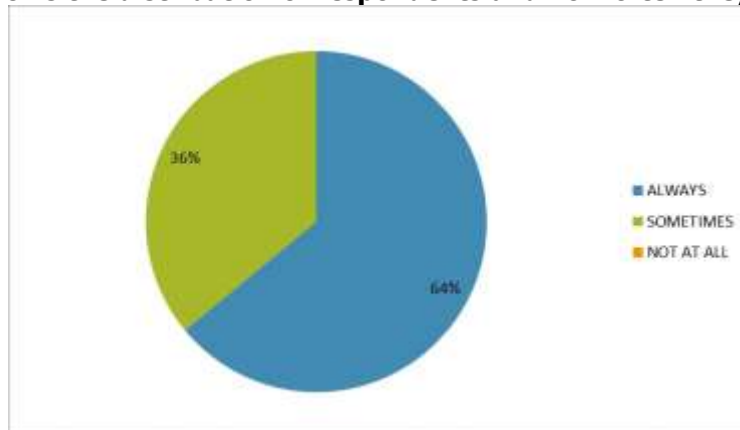


Figure 10, shows that many (64%) respondents always drank water while the least respondents (36%) drank water sometimes, meaning they don't often drink water.

Discussion

Knowledge towards the prevention of UTI among female students at Kampala School of Health Sciences.

Findings found from the current study from a sample of 50 respondents showed that 80% were aware of UTIs. This means respondents were knowledgeable about UTIs. The current study results were in line with (Mafuyai, et al., 2019) who reported that 82.2% of the respondents were aware of UTIs therefore they were knowledgeable. Additionally, many of the respondents gave the right meaning of UTIs as the inflammation of both the urethra and the urinary bladder implying that they were aware of UTIs. The results were in agreement with (Mona Alshahrani MD, et al., 2022) whereby the results showed that 74.3% defined UTIs as the inflammation of the bladder urethra and the kidneys.

The majority of respondents 54% correctly reported poor hygiene as the most common cause of UTIs which implies that they are knowledgeable about the causes of UTIs. The study findings were in disagreement (Mona Alshahrani MD, et al., 2022) where results in his research showed that 73.3% reported bacteria being the most common cause and 12.6% correctly reported personal hygiene.

The study discovered that the majority of the respondents 78% had ever suffered from UTIs.

Attitude towards the prevention of UTIs among female students at Kampala School of Health Sciences.

Based on the study findings, the majority of the respondents 96% believed that UTIs are preventable. This implies that most of the respondents had a positive attitude that UTIs can be preventable. The current results were consistent with a study that was done by (N Selamat et al., 2020) where findings showed that 95.6% had a favorable attitude that UTIs can be prevented.

A moderate number of respondents 60% agreed that drinking plenty of water regularly reduces the risk of getting UTIs. Such perception clearly shows that a significant number of study participants had a favorable attitude towards drinking plenty of water to prevent UTIs. This is in disagreement with the study that was done by (Sonam Zangmu Sherpa, et al., 2022) where a moderate number of respondents 63% had an unfavorable attitude towards drinking plenty of water to prevent UTIs.

The study discovered that the majority of the respondents 705 strongly agreed that UTIs are common and serious this showed that the majority of respondents had a positive attitude towards UTIs being a common and serious infection. This was in agreement with the study that was done by (Gondwe, Hazwell, Matafwali & schema 2020) which showed that 70.6% of the respondents had a positive attitude because they agreed to a statement that said: "I think that UTIs are serious and life-threatening infection".

Given the study findings, 80% strongly agreed that early diagnosis and treatment of UTIs can reduce its

complications, therefore these results showed that respondents had a positive attitude towards early diagnosis and treatment. The results were consistent with (Pandian, et al., 2021) where results in his study showed that about 83% of the subjects accepted that screening to rule out asymptomatic UTIs would minimize the occurrence of UTIs.

Practices towards the prevention of UTIs among female students at Kampala School of Health Sciences.

From the study findings, the majority i.e. 70% cleaned their perineum from front to back after a bowel movement when cleaning their genital area. This signified good practice towards the prevention of UTIs. The study results were consistent with the research done by (Sanjeev Kumar Shah, et al., 2019) where 51.3% of the respondents used front-to-back directions when cleaning their genital area.

The majority of the respondents 94% kept the genital area clean and dry. This indicated good practice done by the respondents toward the prevention of UTIs. The study results weren't in line with (Sanjeev Kumar Shah, et al., 2019) which showed that only 30% of the participants had a habit of regularly cleaning the genital area.

Given the study, a moderate number of respondents 64% always emptied their bladder frequently and didn't hold urine for a long time. This signified good practice towards the prevention of UTIs. The study was in line with one carried out by (Sonia KareN Liz Sequera1, et al., 2021) where results revealed that 53.3% emptied their bladder when full.

The study revealed that 64% of respondents always drank water which indicated good practice toward the prevention of UTIs. This was in agreement with research that was done by (Sonia KareN Liz Sequera1, et al., 2021) which showed that 70% drank a minimum (of 7) glasses of water per day.

Conclusion

Participants had adequate knowledge reasonable attitude towards UTIs prevention because the majority 80% of them were aware of UTIs Most Participants maintained good hygiene practices that greatly helped in reducing the risk of transmission of Urinary tract infections.

Recommendation

The administrators of Kampala School of Health Sciences should organize training about UTI prevention for female students such that they improve their knowledge of how to manage UTIs in case they are infected.

The Ministry of Health should make sure that there are UTI prevention guidelines that will help in the diagnosis and treatment of UTIs thus preventing re-occurrence.

The tutors of Kampala School of Health Sciences should teach the female students what practices they should do to prevent themselves from UTIs.

Acknowledgment

My most sincere and heartfelt gratitude goes to the almighty God who has always been faithful and gracious

to me and has granted me success in everything I do. To him be the Glory and honor now and forever, Amen.

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I would also like to acknowledge the female students of Kampala School of Health Sciences who helped me to obtain all this information.

Thanks to my friends, may the almighty God bless you.

List of Abbreviations

CDC: Center for Disease Control

HAUTI: Health care Associated Urinary Tract Infections

UTIs: Urinary Tract Infections

Source of funding

The study was not funded

Conflict of interest

The author did not declare any conflict of interest

Author Biography

Render Nalwadda is a student of Clinical medicine and community health at Kampala School of Health Sciences. Amiri Were is a tutor at the Kampala School of Health Sciences.

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