



## Awareness of Students On Environmental Hygiene and Health Consequences of Urinary Tract Infection (UTI) At Islamic University in Uganda

A. I. Sidi<sup>\*1</sup>, H. I. Sidi<sup>\*2</sup>, S. A. Yarima<sup>\*3</sup>

<sup>\*1</sup>Department of Environmental Science, IUIU, Mbale, Uganda

<sup>2</sup>Department of Science Education, Abubakar Tafawa Balewa, Bauchi, Nigeria

<sup>3</sup>Department of Biology, Shehu Shagari College of Education, Sokoto, Nigeria

\*Corresponding author: S. A. Yarima, Ph: +234 (0) 8032304044, E-mail: [yarimausman@gmail.com](mailto:yarimausman@gmail.com)

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### ABSTRACT

Urinary tract infection (UTI) is an infection in the urinary tract and caused by bacteria such as *Escherichia coli*. The objective of the study was to assess the level of awareness and health consequences of UTI the students at the Islamic University in Uganda (IUIU). The study used a cross-sectional research design in which a quantitative statistical technique was adopted. In pursuit of this study, two hundred and fifty (250) questionnaires were administered randomly to students in both male and female hostels. Statistical techniques (frequencies and percentages, t-test and chi-square) were used to analyze data collected using the statistical package for social sciences (SPSS) software and EXCEL. The findings of the study established that there is a low level of awareness of students on environmental hygiene but a high level of awareness of the consequences of UTI especially when not treated. The study, therefore, recommends that the University management should improve the orientation programs given to students on issues of environmental hygiene.

**Keyword:** *Cereal; Herbicide Selectivity and Weeds*

### INTRODUCTION

Urinary Tract Infection (UTI) is an infection caused by the presence and growth of microorganism anywhere in the urinary tract and is perhaps the single commonest bacterial infection of mankind (Morgan and McKenzie, 1993; Ebie *et al.*, 2001). According to Amali *et al.*, (2008), the rate of urinary tract infection among both male and female students on campus is becoming rampant and this is due to poor environmental hygiene and management. Ojo and Anibijuwoni (2010), concluded that there is an evident relation of UTI's among students and the practices of personal hygiene or the level of toilet sanitation in their residences, especially in facilities where the students have complained about the hygiene state of their residence toilets as unsatisfactory.

According to Zalina *et al.*, (2011) the occurrence of UTI among nulliparous students is in relation to their personal hygiene. Maintenance of hygiene in Institutions in Uganda is still a challenge. Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases. Preventing the spread of diseases means breaking the chain of infection transmission and the simple principle is, if the chain of infection is broken, the infection cannot spread. In the case of UTIs, the nature of the toilet, hygiene of the toilets and bathrooms and proper toilet practices are important in breaking the transmission chain. Toilet facilities are important tools integrated into health in the general population especially in the transmission of diseases (Litvinov, Sugathan and Cohen 2010; Vernon, Lundblad and Hellstrom, 2003). Especially when not cleaned in a routine periodical manner these are a major source of microbial transmission and act as a hidden source for infections (Bäckhed *et al.*, 2002). The ability to transmit infection is relatively related to the structure of toilets. Those toilets that are more difficult to be washed and cleaned, are more possible to aid transmission of infections (Farrell 1980). Squat toilets are an example of this matter. These toilets are not deep enough and the infectious droplets may reflect subjects' bodies. These toilets also have many inaccessible sites that may not be washed easily and this would result in a higher risk for infection transmission compared with sitting toilets (Bloomfield, Stanwell-Smith and Crevel RW

2006, Rusin, Orosz-Coughlin and Gerba 1998). In IUIU, most of these factors are not taken care of in the maintenance of hygiene in toilets and bathrooms in the students' hostels and may be contributing to the spread and transmission of UTIs

According to Bäckhed *et al.*, (2002), urinary tract infections are the second most common type of infection in the body, accounting for about 8.1 million patient visits to health care providers in the United States each year. On a gender basis, females tend to have UTIs more often than males except at the extremes of age (Kolawole *et al.*, 2009, Ebie *et al.*, 2001). Women are especially prone to UTIs for anatomical reasons more than men particularly those below 50 years of age. One factor is that a woman's urethra is shorter, allowing bacteria quick access to the bladder. Also, a woman's urethral opening is near sources of bacteria from the anus and vagina. For women, the life span risk of having a UTI is greater than that of men. Other factors predisposing females to bacteria are pregnancy and sexual intercourse (Tibaldi *et al.*, 2009). UTIs in men are not as common as in women but can be serious when they occur. In men, the longer urethra makes UTI's less common, but they do occur. Bacteria are usually flushed out of the urethra with urination before they have a chance to cause infection. Because UTIs are rare in men, the occurrence of even one UTI may be a signal that there is an underlying problem predisposing them to develop a UTI (Widerström *et al.*, 2007).

Hygiene is an old concept related to medicine awareness to personal and professional care practices related to most aspects of living. Inadequate sanitary conditions and poor hygiene practices play major roles in the increased burden of communicable disease within the developing countries. Improvements in hygiene at the individual and community level such as sanitary living conditions and practices, potable water facilities, have had a major role in reducing morbidity and mortality from infections, particularly those transmitted by the fecal-oral and direct contact routes. For example, studies have indicated that children with proper hand washing practices are less likely to report gastrointestinal and respiratory symptoms (Ojo and Anbijuwoni, 2010).

A study by Amali *et al.*, (2008) seemed to indicate that there is

little knowledge among students regarding dangers of poor disposal of fecal material because about one-third of the students interviewed in that study reported that they urinate/defecate outside school toilet. This was however more predominant from students whose schools had bucket latrine, dirty toilets, and those where toilets had no doors. According to Bäckhed *et al.*, (2002), chronic urinary tract infections (UTIs) are infections of the urinary tract that do not respond to treatment. In their study, they found out that students were not aware of UTI and how it spreads. The students were not also aware of the consequences of having UTI. Knowledge of UTIs among students is very vital in the management of their prevalence. Thus knowledge levels of the resident student had to be established for appropriate actions to be undertaken to curb the rise in the UTIs. The main objective of the study was to establish the students' knowledge on the UTI at IUIU main campus.

## METHODOLOGY

In the months of October and November 2014, information on student's knowledge on UTI was collected using pre-tested questionnaires.

Cluster and simple random samplings were used to select samples of students from the hostels. Self-structured questionnaire was administered to collect data on the level of student's awareness on environmental hygiene and consequences of UTI. Two hundred and fifty questionnaires (250) were administered to one hundred and fifty (150) males and one hundred (100) females in the entire hostels to assess the awareness of students on environmental hygiene and consequences of UTI in IUIU main campus, Mbale.

Data entry was done using Microsoft Excel and analyzed using SPSS version 22.0 (Cohen *et al.*, 2002; and George and Mallery, 2010). Before analysis, the data sets were checked for errors and edited. An independent student T-test was used to test for differences between genders.

## RESULTS

Results in Table 1 showed that 10.4% of the students are aware of how UTI affects the kidney, 20.4% are aware of the effect of UTI on the male sperm count, 9.6% are aware of how UTI causes weak bladder and 12.4% of students are aware of how UTI cause a blood infection. However, it's just 9.2% of students that are aware of how UTI causes cervical cancer in females. These findings is contrary to that of Santoso *et al.*, (2018) and it entails that awareness of the consequences of having UTI amongst the students is low.

Table 1. Responses on untreated UTI Infections and their related diseases

Attribute	Percentage
Knowledge on consequences of UTI infection	
Kidney failure	10.4
Low sperm count in men	20.4
Weak bladder	9.6
Blood infection	12.4
Cervical cancer	9.2
Gender distribution of knowledge UTI	
Male	58.8
Female	41.2

Purpose of bathrooms to students	
Bathing only	70.8
Both urine and bathing	24.0

The result also indicated that 58.8% and 41.2% male and female students respectively are aware of environmental hygiene. This implies that male students are likely to be more aware of environmental hygiene and how it can help in controlling UTI than female students. These findings correlates with that of Amali *et al.*, (2008) which indicated that there is little knowledge among students regarding the dangers of poor disposal of fecal material.

Table 2. Chi-Square test results for untreated UTI Infections and their related diseases

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	37.752	4	.000
Likelihood Ratio	42.488	4	.000
Linear-by-Linear Association	6.048	1	.014
<b>N of Valid Cases</b>	<b>155</b>		

Results presented in table 2 showed the  $\chi^2$  value for the untreated UTI Infections and its related diseases as  $\chi^2 = 37.752$  ( $P < 0.05$ ), indicating that the result is statistically significant. Hence, we concluded that there was a significant difference between the occurrence of UTI and the consequences of UTI with respect to diseases highlighted. 5.2% of the students used the bathroom for urine only, 70% of students used the bathroom for bathing only while 24% used it for the purpose of both bathing and urinating. This means that some students use the bathroom to urinate which can expose the body to bacteria passed out from the body. Nonetheless, 26.0% used it daily and however, 16.8% never used it at all. The study shows that the pit latrine is more contaminated with the bacteria and the students used it more than the toilet, therefore, they become more exposed to the bacteria. The poor hygiene of the latrines, toilets, and bathrooms at IUIU main campus, Mbale, coupled with toilet practices that involve hand contacts with the anus for washing the fecal matter from it and rubbing in a forward direction could be responsible for transmission of UTIs, especially in women.

The cleaning methods used by the staff were not satisfactory and the cleaning materials not adequate. The study also revealed that the hygiene and/or sanitary practices of the students were questionable and significantly contributed to the occurrence of UTI's in the hostels. The results gathered here are extremely useful: occurrence of UTI in the hostels of IUIU main campus, Mbale; a high occurrence in female students than male students and a low level of awareness among the students.

## CONCLUSION

The study focused on the level of awareness of students on environmental hygiene and health consequences of UTI in students' hostels in IUIU main campus, Mbale, Uganda. There is limited awareness on environmental hygiene but high-level awareness on the consequences of UTI. Based on the findings of this study, there's a need for the IUIU management to always organize for the new students' orientation and awareness on the environmental hygiene and its effects when not observed in relation to urinary tract infection (UTI). The same should also be

done for the continuing student.

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