

A study to assess knowledge and attitude regarding urinary tract infection (UTI) and its prevention among female students

Neenu Baby¹, Sherin C¹, Ahina Shajiner², Anusha Shabu², Aysha Rania², Helna Shaji², Mubeena S², Nandhana B²

¹ Lecturer, N.S. Memorial College of Nursing, Kollam, Kerala, India

² N.S Memorial College of Nursing, Kollam, Kerala, India

DOI: <https://doi.org/10.66856/ijnhr.2026.8.3.8070>

Abstract

The study aimed to assess the knowledge and attitude regarding Urinary tract infection (UTI) and its prevention among female students in selected college of Kollam district.

The research design used for this study was descriptive research design. The setting of the study was SN women's College in Kollam district. A convenient sampling technique is used to select the subjects. The sample size was 100 female students. The present study assessed the knowledge and attitude of female students regarding UTI and its prevention. The result revealed that among 100 female students 23% (23) of them had good knowledge, 68% (68) of them had average knowledge and 9% (9) of them had poor knowledge also among 100 female students, 94 % (94) of them had a positive attitude and 6% (6) them had a neutral attitude.

In demographic variables, there is a significant association between knowledge and age ($\chi^2= 48.574$, p value =0.007), habit of holding urine for long duration ($\chi^2= 21.552$, p value= 0.010), previous information regarding UTI ($\chi^2=17.329$, p value=0.044) also there is a significant association between attitude and frequency of changing menstrual absorbent ($\chi^2=63.612$, p value = 0.006) and practice of genital hygiene after urination($\chi^2=45.795$, p value = 0.001) and there is no association between attitude and other socio-demographic variables.

Keywords: Urinary tract infection (UTI), knowledge, attitude, prevention and female students

Introduction

Urinary tract infection (UTI) is one of the most common bacterial infections affecting women worldwide and remains a significant public health problem. It contributes substantially to physical discomfort, psychological stress, reduced quality of life, absenteeism from academic activities, and increased healthcare expenditure ^[1]. Adolescent girls and young adult women are particularly susceptible to urinary tract infections due to biological and behavioral factors, thereby making female college students a significant population for preventive health assessment and intervention ^[2]. The increased susceptibility of females to urinary tract infection is mainly due to anatomical and physiological factors, which facilitates the easy entry of pathogenic microorganisms into the urinary tract.

The most common causative organism is *Escherichia coli*, followed by *Klebsiella*, *Proteus*, *Staphylococcus saprophyticus*, and *Enterococcus* species ^[3]. Female students spend a major part of their daily routine within school or college environments, where access to toilets, hygiene facilities, and privacy varies widely. In such settings, awareness of proper toilet and menstrual hygiene, personal cleanliness, and healthy hydration practices becomes vital ^[4]. By assessing the existing level of knowledge and attitude among female students, health educators and researchers can identify the specific areas requiring improvement. Such understanding helps in designing effective interventions that promote hygienic practices, early symptom recognition, and timely seeking of medical care ^[5].

Statement of the Problem

A study to assess the knowledge and attitude regarding urinary tract infection (UTI) and its prevention among female students in a selected colleges of Kollam district.

Objectives

1. Assess the level of knowledge regarding urinary tract infection and its prevention among female students.
2. Assess the attitude towards urinary tract infection and its prevention among female students.
3. Determine the association between the level of knowledge and selected socio-demographic variables.
4. Evaluate the association between attitude and selected socio-demographic variables.

Hypothesis

H1: There is a significant association between the level of knowledge regarding UTI and selected socio-demographic variables.

H2: There is a significant association between the attitude regarding UTI and its prevention and selected socio-demographic variables.

Operational Definition

Urinary Tract Infection (UTI): In this study, UTI refers to an infection of any part of the urinary system, identified by symptoms such as burning sensation during urination, frequent urination, and lower abdominal pain, as understood by the study participants.

Prevention of UTI: In this study, prevention of UTI refers to measures such as maintaining personal hygiene, adequate fluid intake, regular bladder emptying, and seeking timely medical care.

Knowledge: In this study, knowledge refers to the level of understanding of participants regarding UTI and its prevention, measured using a structured knowledge questionnaire.

Attitude: In this study, attitude refers to the participants' feelings, beliefs, and opinions regarding UTI and its prevention, assessed using a 5-point Likert attitude scale.

Students: In this study, students refer to female students who are enrolled in the selected Arts and Science College.

Methodology

Population

The target population of the present study is female students from SN women's college in Kollam district.

Sample and Sample Size

A sample is a subset of the population selected for the study. It represents the population and is used for data collection and analysis. In this study sample include 100 female students from SN women's college in Kollam district.

Sampling Technique

A non probability sampling technique in which convenient sampling technique was used for the selection.

Criteria for Sample Selection

- **Inclusion criteria:** Female students who are,
 1. Aged between 17-20 years.
 2. Willing to participate in the study.
 3. Available at the time of data collection.
- **Exclusion criteria:** Female students who are,
 1. Absent during data collection.
 2. Having chronic medical condition (HIV or AIDS, autoimmune diseases, diabetic mellitus, chronic kidney diseases, renal stone etc..)
 3. Studying in medical field.

Result

Objective: Assess the level of knowledge regarding urinary tract infection and its prevention among female students, among 100 female students 23% (23) of them had good knowledge, 68% (68) of them had average knowledge and 19% (19) of them had poor knowledge. Mean, $M=9.570$ with standard deviation, $SD=2.475$.

Table 1: level of knowledge regarding urinary tract infection and its prevention.

Knowledge	Frequency	Percentage
Good knowledge	23	23%
Average knowledge	68	68%
Poor knowledge	9	9%

Table 2: Mean and standard deviation of knowledge

Variable	Mean	Standard Deviation
Knowledge	9.570	2.475

Assess the attitude towards urinary tract infection and its prevention among female students, among 100 female students, 94 % (94) of them had a positive attitude and 6% (6) them had a neutral attitude. Mean attitude score was $M=43.390$ with standard deviation $SD=5.173$.

Table 3: Level of attitude towards urinary tract infection and its prevention.

Attitude	Frequency	Percentage
Positive attitude	94	94%
Neutral attitude	6	6%
Negative attitude	0	0%

Table 4: Mean and standard deviation of attitude score.

Variable	Mean	Standard Deviation
Attitude	43.390	5.173

Table 5: Association between knowledge regarding urinary tract infection and its prevention and selected socio-demographic variables.

SL No	Demographic Variables	df	Chi square (χ^2)	P value
1	Age	6	48.574	0.007*
2	Subject	4	1.859	0.762
3	Religion	4	1.641	0.801
4	Annual family income	6	12.252	0.057
5	Type of residence	4	3.024	0.554
6	Menstrual status	4	1.374	0.849
7	Type of menstrual absorbent used	4	3.383	0.496
8	Frequency of changing menstrual absorbent	4	3.383	0.496
9	Daily water intake	4	3.761	0.439
10	History of UTI	4	1.700	0.791
11	History of hospitalization due to UTI	2	0.482	0.786
12	Clean toilet at college	4	5.755	0.218
13	Clean toilet facility at place of residence	2	1.838	0.399
14	Habit of holding urine for long duration	9	21.552	0.010*
15	Practice of genital hygiene after urination	2	1.837	0.399
16	History of constipation	6	18.486	0.724
17	Previous information regarding UTI	9	17.329	0.044*

Significance at $p < 0.05$

Table 5 shows, determine the association between the level of knowledge and selected socio-demographic variables. There is a significant association between knowledge and age ($\chi^2 = 48.574$, p value = 0.007), habit of holding urine for long duration ($\chi^2 = 21.552$, p value = 0.010), previous information regarding UTI ($\chi^2 = 17.329$, p value = 0.044) and there is no significant association between other socio-demographic variables

Table 6: Association between attitude regarding UTI and its prevention and selected socio-demographic variables.

Sl no	Demographic Variables	df	Chi-Square (χ^2)	p-value
1	Age	3	3.027	0.387
2	Subject	2	0.908	0.635
3	Religion	2	2.128	0.345
4	Annual family income	3	1.982	0.576
5	Type of residence	2	0.555	0.758
6	Menstrual status	2	0.709	0.701
7	Type of menstrual absorbent used	2	0.407	0.816
8	Frequency of changing menstrual absorbent	2	63.612	0.006*
9	Daily water intake	2	0.537	0.764
10	History of UTI	2	1.307	0.520
11	History of hospitalization due to UTI	1	0.870	0.351
12	Clean toilet facility at college	2	3.780	0.828
13	Clean toilet facility at place of residence	1	1.288	0.256
14	Holding urine for long duration	1	0.008	0.930
15	Practice of genital hygiene after urination	1	45.795	0.001*
16	History of constipation	3	1.069	0.785
17	Previous information regarding UTI	1	0.038	0.846

Significance at $p < 0.05$

Table 6 shows, to evaluate the association between attitude and selected socio-demographic variables. There is a significant association between attitude and frequency of changing menstrual absorbent ($\chi^2 = 63.612$, p value = 0.006) and practice of genital hygiene after urination ($\chi^2 = 45.795$, p value = 0.001) and there is no association between attitude and other socio-demographic variables.

Discussion

The present study was conducted to assess the knowledge and attitude regarding urinary tract infection and its prevention among female students in a selected college in Kollam. The major findings of the study were compared with similar studies conducted by other researchers.

To assess the knowledge regarding UTI and its prevention among female students

The present study demonstrates that among 100 female students 9% (9) had poor knowledge, 68% (68) had average knowledge and 23% (23) had good level of knowledge. finding are supported by a study conducted by Egbochuku and Atedhor among 234 female undergraduate students at the University of Benin, Nigeria. Their study indicated that 37.6% of participants had poor knowledge, 46.2% had moderate knowledge, and 16.2% had good knowledge regarding urinary tract infection^[4].

To assess the attitude towards UTI and its prevention among female students

In the present study revealed that, among 100 female students 94 % (94) of them had positive attitude and 6% (6) them had neutral attitude. Similarly, a study by Sanjana *et al.* (2026)^[9] evaluated knowledge, attitude and awareness

regarding urinary tract infection among college students in the Tumkur region. The findings revealed that out of 265 students 53.96% exhibited good attitude, 20% showed average attitude and 26.03% demonstrated poor attitude towards UTI prevention^[9].

Determine the association between knowledge regarding UTI and its prevention and selected demographic variables among female students

A recent cross-sectional study by Kundu *et al.* (2025)^[8] among female university students assessed knowledge, attitude, and preventive practices related to UTIs, and found significant links between hygiene behaviors, fluid intake, delayed voiding behavior, and UTI prevalence. However, unlike the present study, which observed significant associations between age, prior information, and knowledge level, Kundu *et al.* did not find significant associations between general sociodemographic variables and knowledge levels. This contrast suggests that sociodemographic determinants of UTI knowledge may vary across population groups and contexts^[8].

Evaluate the Association between attitude regarding UTI and its prevention revention and selected demographic variables among female students

A recent study conducted among female university students (Kundu *et al.*, 2025) examined the knowledge, attitudes, and preventive practices regarding urinary tract infections. The study explored the relationship between participants' attitudes toward UTI prevention and their demographic and behavioral factors. The researchers found that although general sociodemographic variables such as age, year of study, and residence did not show strong or consistent associations with attitude levels

Findings

In this study, major findings are the female students who participated in the study belongs to the age group of 17-20 years. Most of the female students (76%) were studying in History department. The family incomes of 75% of students were below one lakh. Nearly half of female students (46%) changed menstrual absorbent at the frequency of 4hrs. Nearly half of female students (47%) takes daily w a t e r I n t a k e less than 1.5 litre. Majority of students (83%) had no history of UTI. More than half of female students (74%) had good toilet facility at their college and place of residence. Majority of female students (86%) had no previous information regarding UTI. Among 100 female students 23% (23) had good knowledge, 68 % (68) had average knowledge and 9% (9) had poor knowledge. Majority of female students had positive attitude (94%) and (6%) had neutral attitude.

Nursing Implications

The present study has implications in college health programs, nursing education, and nursing research. College Health Programs incorporate the importance of prevention of UTI and healthy hygienic practices into college health education programs, collaborate with college authorities to promote awareness campaigns on UTI prevention. Develop tailored programs addressing specific knowledge gaps and misconceptions related to UTI and its prevention.

Nursing Education

Integrate comprehensive education on UTI, including causes, risk factors, prevention, and myths, into the nursing curriculum. Emphasize evidence-based practices in UTI prevention and management. Teach nursing students to promote healthy behaviours such as personal hygiene, adequate hydration, and early reporting of symptoms. Focus on developing effective communication skills to address. Students' concerns and misconceptions regarding UTI.

Nursing Research

Conduct studies to evaluate the effectiveness of educational interventions on UTI knowledge and attitudes among college students. Investigate long-term outcomes of UTI prevention programs. Compare knowledge and attitudes towards UTI and its prevention among different populations of college students. Explore experiences and perspectives of college students regarding UTI and its prevention practices.

Suggestions

A similar study can be conducted in different settings with a larger population for broader generalization. A similar study can be conducted among different age groups or among school students. Health education programmes should be organized to improve knowledge regarding UTI and its prevention among students. Further research can be conducted to evaluate the effectiveness of educational ntin knowledge and attitude regarding UTI.

Conclusion

The following conclusions were made based on the study findings. The study concluded that most of the college students had moderate knowledge regarding UTI and its prevention and negative attitude towards preventive practices. The majority of the students had 23% (23) of them had good knowledge, 68% (68) of them had moderate knowledge and 19% (19) of them have poor knowledge regarding UTI and its prevention. 94 % (94) of them had positive attitude and 6% (6) them had neutral attitude regarding UTI and its prevention. After the data collection and analysis, only 23% of participants had good knowledge regarding UTI and its prevention so, we conducted a teaching programme on the topic UTI and its preventive measures.

Declaration by Authors

Ethical Approval: Approved

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

References

1. World Health Organization. Urinary tract infections: Global epidemiology and prevention. Geneva: World Health Organization, 2023.
2. Foxman B. Urinary tract infection syndromes: Occurrence, recurrence, bacteriology, risk factors. *Infect Dis Clin North Am*,2014;28(1):1-13.

3. Sharma P, Gupta A, Verma R. Bacteriological profile of urinary tract infections in Uttar Pradesh. *Indian J Pathol Res*, 2022.
4. Egbochuku E, Atedhor G. Knowledge gaps and preventive strategies among female undergraduates regarding urinary tract infection. *Univ Benin J Health*, 2025.
5. Nair NR, Varghese J, Joshi P, *et al*. Effectiveness of teaching programme on urinary tract infection prevention among adolescent girls. *Gujarat Nurs J*, 2023.
6. Singh R, Kaur M, Sood P. Effect of educational intervention on attitude toward UTI prevention: a quasi-experimental study. *Journal of Nursing and Midwifery*, 2022.
7. Fatima H, Qureshi N, Saleem A. Risk factors and preventive practices regarding urinary tract infection among adolescent girls. *Journal of Adolescent Health and Hygiene*, 2022.
8. Kundu N, Mou FA, Samia FN, Urmi CY, Hossain MS, Ahmad T. Knowledge and practices regarding UTI among female university students in Bangladesh. *Bangladesh J Health Sci*, 2025.
9. Sanjana BS, Shekar PN, Shwetha JH. Knowledge and attitude on UTI among college students in Tumkur. *Indian J Community Practice*, 2026.
10. Rani K, Thomas A, John S. Knowledge and practices regarding UTI prevention among schoolgirls. *Journal of School Health Nursing*, 2019.