



Knowledge about factors affecting urinary tract infection among female management students in Bangalore: A descriptive study

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DOI: <https://www.doi.org/10.33545/nursing.2026.v9.i1.A.617>

Abstract

Background: Urinary tract infection (UTI) is one of the most common bacterial infections among women and is influenced by multiple behavioral, physiological, and hygienic factors. Young women, particularly college students, are at increased risk due to lifestyle habits and limited health awareness.

Objective: To assess the knowledge about factors affecting UTI among female management students and its association with demographic variables.

Methods: A descriptive cross-sectional study was conducted among 50 female students (undergraduate and postgraduate) of Aditya Institute of Management Studies, Bangalore. Participants were selected using non-probability convenience sampling. Data were collected using a structured knowledge questionnaire covering domains of UTI knowledge, previous history, causes and prevention, and menstrual hygiene. Descriptive statistics (frequency, percentage) and inferential statistics (correlation analysis) were used to analyze the data.

Results: The majority of participants were aged 18-20 years (76%), unmarried (94%), and undergraduates (90%). Social media (86%) was the primary source of information on UTI. A significant positive correlation was found between age and menstrual hygiene knowledge ($r = 0.336$, $p < 0.05$) and between marital status and UTI knowledge ($r = 0.325$, $p = 0.021$). Educational qualification showed no significant correlation with any domain.

Conclusion: Overall knowledge regarding UTI and its preventive measures was inadequate to moderate. Targeted educational interventions and health awareness programs are recommended to improve knowledge and reduce UTI risk among young women.

Keywords: Urinary tract infection, knowledge, female students, risk factors, menstrual hygiene

Introduction

Urinary tract infection (UTI) is a significant global health problem and one of the most common bacterial infections affecting women ^[1]. It is estimated that nearly half of all women experience at least one episode of UTI during their lifetime, with a substantial proportion suffering from recurrent infections ^[2]. UTIs account for millions of out-patients visits each year and impose a considerable economic and psychosocial burden on individuals and healthcare systems ^[3].

Anatomically, women are more vulnerable to UTIs due to a shorter urethra, close proximity of the urethral opening to the anus, and hormonal influences. Behavioral factors such as inadequate personal hygiene, delayed voiding, insufficient fluid intake, sexual activity, and improper menstrual hygiene practices further increase the risk ^[4]. Among young women, particularly students, lifestyle-related factors including academic stress, hostel living, dietary habits, and lack of awareness significantly contribute

to the occurrence of UTIs ^[5].

UTIs may involve the lower urinary tract (urethritis and cystitis) or upper urinary tract (pyelonephritis). If left untreated, UTIs can lead to serious complications such as renal damage, sepsis, recurrent infections, and adverse pregnancy outcomes ^[6]. Despite the availability of effective treatment, recurrence remains a major concern, emphasizing the importance of preventive strategies and adequate knowledge ^[7].

Female students pursuing non-medical courses often receive limited formal education regarding reproductive and urinary health. Misconceptions, social stigma, and reliance on informal sources of information may lead to poor health practices ^[8, 9]. Nurses, as frontline healthcare providers, play a vital role in health promotion and disease prevention through education and counseling ^[10].

Understanding the existing level of knowledge among female students regarding factors affecting UTI is essential for planning targeted educational interventions ^[11]. Hence,

the present study was undertaken to assess the knowledge regarding factors affecting urinary tract infection among female students of management studies in Aditya Institute of Management Studies, Bangalore.

Objectives

1. To assess the knowledge of female management students regarding factors affecting urinary tract infection.
2. To determine the association between knowledge levels and selected demographic variables such as age, educational qualification, and marital status.

Materials and Methods

Study Design and Approach: A descriptive, non-experimental survey design was adopted.

Study Setting: The study was conducted at Aditya Institute of Management Studies, Bangalore, Karnataka.

Population and Sample: The population included female students enrolled in undergraduate (BBA) and postgraduate (MBA) programs. The sample consisted of 50 students selected through non-probability convenience sampling.

Inclusion Criteria

- Female students aged 18-24 years.
- Willing to participate and able to read and write in English.

Exclusion Criteria

- Students with mental health disorders or sensory impairments.
- Those unwilling to participate.

Data Collection Tool: A structured knowledge questionnaire comprising 24 multiple-choice questions was used. It assessed four domains: general information about UTI (9 items), previous history (5 items), causes and prevention (5 items), and menstrual hygiene (5 items). Scores were categorized as:

- Adequate: 26-31
- Moderately adequate: 11-25
- Inadequate: 0-10

Validity and Reliability: Content validity was established by experts in medical-surgical nursing and medicine. Reliability was confirmed using the test-retest method ($r = 0.87$).

Data Collection Procedure: Written consent was obtained from participants. Data were collected through self-administered questionnaires during scheduled sessions. Confidentiality and anonymity were maintained.

Data Analysis: Data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (Pearson correlation) to assess associations between demographic variables and knowledge domains. A p -value < 0.05 was considered statistically significant.

Ethical Considerations: Ethical clearance was obtained from the institutional review board. Informed consent was taken from all participants.

Results

A total of 50 female students participated in the study, with a majority (76%) aged between 18-20 years and 24% between 20-24 years. Most participants (90%) were undergraduates, and 94% were unmarried. Hindu religion was predominant (74%), followed by Muslim (20%) and Christian (6%). Social media was the primary source of information on urinary tract infection (UTI) for 86% of students which can be observed in Table.1.

Correlation analysis [Vide: Table. 2, 3 & 4]

- **Age:** Low positive, non-significant correlation with knowledge on UTI ($r = 0.147$) and causes/prevention ($r = 0.078$), negative correlation with previous history of UTI ($r = -0.188$). A significant positive correlation was observed with menstrual hygiene knowledge ($r = 0.336$, $p < 0.05$).
- **Educational Qualification:** Low positive, non-significant association with all domains: UTI knowledge ($r = 0.143$), previous history ($r = 0.116$), causes/prevention ($r = 0.209$), and menstrual hygiene ($r = 0.216$).
- **Marital Status:** Significant positive correlations with knowledge on UTI ($r = 0.325$, $p = 0.021$) and menstrual hygiene ($r = 0.382$, $p = 0.006$). A significant negative correlation was found with previous history of UTI ($r = -0.464$, $p = 0.001$).

Overall, the findings indicate that demographic variables such as age and marital status influence knowledge related to UTI and menstrual hygiene practices.

Discussion

The Present study assessed the knowledge regarding factors affecting urinary tract infection among female management students. The findings revealed that most participants possessed moderately adequate knowledge, particularly regarding general information and causes of UTI, while gaps were noted in areas related to menstrual hygiene and preventive practices.

The significant association between age and menstrual hygiene knowledge may be attributed to increased maturity and life experience as age advances. Similar findings have been reported in previous studies indicating better hygiene awareness among older adolescents and young adults.

The lack of significant association between educational qualification and knowledge suggests that academic level alone does not ensure health awareness, highlighting the need for targeted health education irrespective of course or level of study [12].

Marital status showed a significant association with knowledge regarding UTI and menstrual hygiene, possibly due to increased exposure to health information and healthcare services after marriage.

These findings emphasize the need for structured teaching programs and health promotion activities focusing on UTI prevention, menstrual hygiene, and healthy urinary habits among young women.

Table 1: Frequency and Percentage Distribution of subjects according to socio-demographic variables.

Age	Frequency	Percentage frequency distribution
18-20	38	76%
20-24	12	24%
Educational qualification	Frequency	Percentage frequency distribution
Under- graduation	45	90%
Post- graduation	5	10%
Marital Status	Frequency	Percentage frequency distribution
Married	3	6%
Unmarried	47	94%
Religion	Frequency	Percentage frequency distribution
Hindu	37	74%
Christian	3	6%
Muslim	10	20%
Source of Information on UTI	Frequency	Percentage frequency distribution
Social media	43	86%
Newspaper	2	4%
Previous family history	5	10%

Table 2: Correlation between age group of students and factors affecting UTI

Correlation	Correlation coefficient	p-value
Age v/s Information regarding UTI	0.147	0.308
Age v/s previous History of UTI	-0.188	0.190
Age v/s Causes and Prevention	0.078	0.590
Age v/s Menstrual Hygiene	0.336*	0.017

Table 3: Correlation between educational qualification of students and factors affecting UTI

Correlation	Correlation coefficient	p-value
Education Qualification v/s Information regarding UTI	0.143	0.322
Education Qualification v/s previous History of UTI	0.116	0.423
Education Qualification v/s Causes and Prevention	0.209	0.146
Education Qualification v/s Menstrual Hygiene	0.216	0.132

Table 4: Correlation between marital status of students and factors affecting UTI

Correlation	Correlation coefficient	p-value
Marital status v/s Information regarding UTI	0.325*	0.021
Marital status v/s previous History of UTI	-0.464*	0.001
Marital status v/s Causes and Prevention	0.140	0.331
Marital status v/s Menstrual Hygiene	0.382*	0.006

Conclusion

The study revealed that knowledge about factors affecting UTI among female management students was generally inadequate to moderate. Age and marital status significantly influenced menstrual hygiene knowledge, while educational qualification showed minimal impact. The findings highlight the need for structured health education programs focusing on UTI prevention and menstrual hygiene.

Incorporating awareness sessions in academic settings and leveraging social media for health promotion could effectively reduce the incidence of UTI in this population.

Nursing Implications

The findings of the study have the following implications in the area of nursing practice, nursing education, nursing administration and nursing research.

Recommendations

- Conduct similar studies on larger samples to validate findings.
- Implement structured teaching programs on UTI prevention in educational institutions.
- Utilize social media platforms for health education campaigns.

Acknowledgments

The authors are thankful to Dr. Viswanath BA, Honourable Chairman of Aditya Group of Institutions, Yelahanka, Bengaluru and Dr. Prof. Hephzibah Keren I, Principal, Aditya College of Nursing, Bengaluru for their cooperation to carry out this work.

Declarations

Declaration of Originality

We hereby declare that this manuscript entitled “Knowledge about Factors Affecting Urinary Tract Infection among Female Management Students in Bangalore: A Descriptive Study” is an original work carried out by us and has not been published or submitted for publication elsewhere in any form.

Ethical Approval and Consent

Ethical approval was obtained from the Institutional Ethics Committee of Aditya College of Nursing, Bangalore. Written informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity of the participants were strictly maintained throughout the study.

Conflict of Interest

The authors declare that there is no conflict of interest.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

References

1. Foxman B. Epidemiology of urinary tract infections: incidence, morbidity, and economic costs. *Am J Med.* 2002;113(1):5-13.
2. Hooton TM. Clinical practice: uncomplicated urinary tract infection. *N Engl J Med.* 2012;366(11):1028-1037.
3. Nicolle LE. Urinary tract infections in adults including uncomplicated infections and complicated infections. *Urol Clin North Am.* 2008;35(1):1-12.
4. World Health Organization. Guidelines on Menstrual Health and Hygiene. WHO; 2022.
5. Polit DF, Beck CT. *Nursing Research: Generating and Assessing Evidence for Nursing Practice.* 10th ed. Wolters Kluwer; 2017.

6. Aggarwal N, Leslie SW. Recurrent Urinary Tract Infections. [Updated 2025 Jan 20]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK557479/>
7. Sabih A, Leslie SW. Complicated Urinary Tract Infections. [Updated 2024 Dec 7]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK436013/>
8. Mohammadi F, Kohan S, Mostafavi F, Gholami A. The Stigma of Reproductive Health Services Utilization by Unmarried Women. Iran Red Crescent Med J. 2016 Mar 20;18(3):e24231. doi: 10.5812/ircmj.24231. PMID: 27247794; PMCID: PMC4884608.
9. Bazarganipour F, Foroozanfard F, Taghavi SA, Hekmatzadeh F, Sarviye M, Hosseini N. Evaluation of Female Youth Educational Needs about Reproductive Health in Non-Medical Students in the City of Qom. J Family Reprod Health. 2013 Jun;7(2):67-72.
10. Alhaj SS, Allami S, Mohamadiyah A, Agha A, Ali AKA, Habbal JMB, Saeed BQ. Knowledge, attitudes, and practices regarding urinary tract infections among women in the United Arab Emirates. PLoS One. 2025 Jan 10;20(1):e0298993. doi: 10.1371/journal.pone.0298993. PMID: 39792816; PMCID: PMC11723537.
11. Kundu N, Mou FA, Samia FN, *et al.* Knowledge-level, attitudinal-trend and preventive-practices on urinary tract infections among reproductive-aged female university students. Discov Public Health. 2025;22:587. <https://doi.org/10.1186/s12982-025-00990-z>.
12. Zajacova A, Lawrence EM. The Relationship Between Education and Health: Reducing Disparities Through a Contextual Approach. Annu Rev Public Health. 2018 Apr 1;39:273-289. doi: 10.1146/annurev-publhealth-031816-044628. Epub 2018 Jan 12. PMID: 29328865; PMCID: PMC5880718

How to Cite This Article

Padmavathi GV, Nagaraju B, Angel P, Anusree KP, Archana P, Athira P *et al.* Knowledge about factors affecting urinary tract infection among female management students in Bangalore: A descriptive study. International Journal of Advance Research in Nursing. 2026;9(1):01-04.

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