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Research Article

A Study to Assess the Effectiveness of Structured Teaching Programme Regarding Knowledge of Urinary Tract Infection Among 1st Year Girls

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A B S T R A C T

Introduction: Urinary Tract Infection (UTI) as an infection affecting the urinary system, including the kidneys, ureters, bladder, or urethra. UTIs are among the most common bacterial infections, particularly in women, because of the shorter female urethra and its close proximity to the anal region.

Aim: The aim of the study is to assess and impart knowledge on UTI among college students. In spite of good knowledge, due to a change in the lifestyle and poor health status, it can lead to a sudden urinary tract infection, which requires immediate intervention.

Result: Level of pre-test knowledge regarding UTI among 1st-year girls: (70%) of the respondents have a moderate level of pre-test of the respondents, (21%) of the respondents have a high level of pre-test of the respondents, and (8.3%) of the respondents have a low level of pre-test of the respondents. Effect of structured teaching program on knowledge regarding UTI: 46.7% of the respondents have a moderate level of post-test of the respondents, 31.6% of the respondents have a high level of post-test of the respondents, and 21.7% of the respondents have a low level of post-test of the respondents. This study shows an association between demographic data of the respondents and their level of pre-test. It is concluded that there is a significant association between age, any medical illness, and dietary pattern. Other demographic data are religion, dietary pattern, and sanitary lifestyle. There is no significant association because the chi-square value is lower than the table value.

Conclusion: the findings of the present study showed that the structured teaching program was effective in increasing the knowledge regarding the prevention of urinary tract infection among girls.

Keywords: Assess, Effectiveness, Structured Teaching Program, Knowledge, Urinary Tract Infection, 1st-Year Girls

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Introduction

A urinary tract infection (UTI) is an infection caused by microorganisms, most commonly bacteria that affect any part of the urinary system, including the urethra, bladder, ureters, or kidneys. UTIs are among the most common bacterial infections in humans and occur more frequently in women than in men. The majority of UTIs are caused by bacteria originating from the gastrointestinal tract, with Escherichia coli (E. coli) being the most common causative organism.[1]

UTIs are generally classified as lower urinary tract infections, such as cystitis and urethritis, or upper urinary tract infections, such as pyelonephritis. Common symptoms include burning or pain during urination, increased urinary frequency and urgency, lower abdominal discomfort, and cloudy or strong-smelling urine. In upper urinary tract infection, fever, chills, nausea, vomiting, and flank pain may occur. If left untreated, a UTI can progress to more serious complications, including kidney infection and, in severe cases, sepsis.[2]

Urinary tract infection is very common among females in all age groups. During adolescence, hormonal changes favor vaginal colonization by nephritogenic strains of bacteria, which can migrate to the periurethral area and cause urinary tract infection. It is associated with poor self-esteem, impaired quality of life, social isolation, and depression. Many factors, like low water intake, infrequent voiding, and poor menstrual and sexual hygiene, have been implicated in UTI during adolescence.[3]

Need of study

Urinary Tract Infections (UTIs) are among the most common bacterial infections globally, affecting individuals across all age groups, with a particularly high prevalence among women, children, and the elderly. Despite being generally treatable, UTIs can lead to serious complications such as pyelonephritis, sepsis, and kidney damage if not diagnosed and managed promptly.

P.Jasmine Sharmila 2025 conducted a descriptive study to assess knowledge on UTI prevention among adolescent girls in Nanchiyapalayam, Dhalapuram, Tamil Nadu. A non-experimental, descriptive design was used, with a purposive sample of 30 adolescent girls meeting the inclusion criteria. Data were collected using a structured questionnaire and analyzed with descriptive and inferential statistics. Findings revealed that 53% were aged 15–16, 44% were Hindus, and 36% of fathers were coolie workers. About 33% had completed primary education, and 50% received UTI-related information from health personnel. Notably, 53% had adequate knowledge of UTI prevention. A significant association was found between knowledge level and age at the 0.05 significance level.[4]

Daniel Arun Kumar K. (2024) conducted a quantitative descriptive study in December 2024 to assess the knowledge and practices regarding urinary tract infections (UTIs) and their prevention among 100 second-year B.Sc. Nursing students at PES College of Nursing, Kuppam, Chittoor District. Using convenient sampling, informed consent was obtained, and knowledge was assessed with a self-administered questionnaire. The results showed that most participants (98%) were aged 19-21 years, 83% were hostellers, and 96% were unmarried. 76% had no previous history of UTI, and 55% were Hindu. Regarding knowledge, 46% had moderate knowledge, while 63% exhibited adequate practices. A moderate positive correlation ($r=0.414$, $p<0.01$) was found between knowledge and practices on UTI prevention. Demographic variables such as age, residential status, marital status, previous UTI history, and religion did not significantly affect knowledge or practices.

Objectives

The objectives of the study were

- To assess the pre-test knowledge regarding the prevention of UTI among first-year nursing students.
- To assess the post-test knowledge regarding the prevention of UTI after the structured teaching program.
- To evaluate the effectiveness of the structured teaching program by comparing the pre-test and post-test knowledge scores.
- To find out the association between knowledge regarding UTI and their selected demographic variables.

Methodology

A quantitative research approach and research design used in the study was a pre-experimental one-group pre-test and post-test design. Two types of variables were used in this study; they are study variables and sociodemographic variables. Dependent Variable: Knowledge of nursing students regarding urinary tract infection. Independent variable: Structure teaching program on UTI. The socio-demographic variables considered for this study were age, religion, medical illness, level of education, family type, dietary pattern, income of the family, sanitary latrine, etc. The study was conducted among the nursing students at Mother Teresa College of Nursing, Bangalore. The setting was chosen on the basis of feasibility in terms of availability of the nursing students. The population of the study includes the 1st-year girls at Mother Teresa College of Nursing Bangalore. In the present study the sample consists of 60 students from 1st year girls who meet the inclusion criteria. In this study 60 samples from 1st-year girls were selected by the purposive sampling technique. A structured questionnaire was used as the tool to assess

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the knowledge of students regarding urinary tract infection. The tool was developed by the investigators. The developed tool was validated by subject experts, guides, and co-guides. Written permission was taken from the principal of Mother Teresa College of Nursing, Bangalore. Informed verbal consent was taken from student samples. After getting permission from our principal, I approached the principal of Mother Teresa College of Nursing to get permission for conducting the study. The data collection process began from 11/5/2025 to 15/5/2025. The researcher met the 1st-year girls of Mother Teresa College of Nursing. An introduction was given, and their cooperation was obtained. The study was conducted after winning the confidence of the students; using the questionnaire schedule, a pre-test was conducted for the selected nursing students. After the pre-test, the next day a structured teaching program was given regarding UTI. The post test was conducted after 1 week of teaching. The analysis of the data was done in accordance with objectives. The investigator adopted descriptive and inferential statistics to analyze the data. The demographic variables were analyzed by using frequency distribution and percentage. Comparison of pre-test and post-test scores was computed on the basis of scores.

Result

- Distribution of sample based on age showed that the highest percentage, 37 (61.7%), of the subjects were in the age group of 17-19 yrs; 14 (23.3%) of the subjects were in the age group of 20-22 yrs; 5 (8.3%) of the subjects were in the age group of 23-25 yrs; and 4 (6.7%) of the subjects were in the age group of 26-28 yrs.
- Distribution of sample based on religion showed that 30 (50%) of the samples were Hindu, 29 (48.3%) of the samples were Christian, and 1 (1.7%) of the samples were others.
- Distribution of sample based on any medical illness showed that 46 (76.7%) of the samples were having other illnesses, 5 (8.3%) of the samples are having kidney stones, and 4 (6.7%) of the samples are having diabetic mellitus.
- Distribution of sample based on level of education showed that 31 (51.7%) of the samples are completed secondary education, 15 (25%) of the samples are completed graduation, 7 (11.7%) of the samples are completed primary education, and 7 (11.7%) of the samples are illiterate.
- Distribution of sample based on family type showed that 39 (65%) of the samples belonged to the nuclear family, 17 (28.3%) of the samples belonged to the joint family, and 4 (6.7%) of the samples belonged to the single-parent family.
- Distribution of sample based on income showed that 27 (45%) of the samples› income is 11000-15000, 20 (33.3%) of the samples› income is 5000-10000, 7 (11.7%) of the samples› income is 16000-20000, and 6 (10%) of the samples› income is 21000-25000.
- Distribution of sample based on dietary pattern showed that 48 (80%) of the sample were mixed pattern, 10 (16.7%) of the samples were non-vegetarian, and 2 (3.3%) of the samples were vegetarian.
- Distribution of sample based on sanitary latrine showed that 22 (36.7%) of the samples were using attached latrine, 21 (35%) of the samples were using non-attached latrine, and 17 (28.3%) of the samples were using public toilets.

Description of sample characteristics:

The purposive sampling technique was used to select 60 students with UTI knowledge. The frequency and the percentage of the sample by their demographic characteristics are presented in Table 1.

Table 1.Frequency and percentage distribution of demographic variables

N=60

Serial No	Sample Characteristics	Frequency	Percentage
1	AGE: 17-19yrs 20-22yrs 23-25yrs 26-28yrs	 37 14 5 4	 61.7 23.3 8.3 6.7
2	RELIGION: HINDU CHRISTIAN OTHERS	 30 29 1	 50.0 48.3 1.7

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3	MEDICAL ILLNESSL: DIABETIC MELLITUS KIDNEY STONE HYPERTENSION OTHERS	 4 5 5 46	 6.7 8.3 8.3 76.7
4	LEVEL OF EDUCATION: PRIMARY SECONDARY GRADUATE ILLITERATE	 7 7 31 15	 11.7 11.7 51.7 25.0
5	TYPE OF FAMILY: JOINT FAMILY NUCLEAR FAMILY SINGLE PARENT	 17 39 4	 28.3 65.0 6.7
6	INCOME: 5000-10000 11000-15000 16000-20000 21000-25000	 20 27 7 6	 33.3 45.0 11.7 10.0
7	DIETARY PATTERN: VEGETARIAN NON VAGETARIAN MIXED	 2 10 48	 3.3 16.7 80.0
8	SANITARY LATRINE: ATTACHED NON-ATTACHED PUBLIC TOILET	 22 21 17	 36.7 35.0 28.3

Table 2.Distribution of the respondents by level of pre-test

S.No	Level of pre-test knowledge regarding prevention of UTI	No. of respondents	Percentage (%)
1	High	13	21.7
2	Moderate	42	70.0
3	Low	5	8.3
TOTAL	60		100

Table 3.Distribution of the Respondents by Level of Post-Test

S.No	Level of post-test knowledge regarding prevention of UTI	No. of respondents	Percentage (%)
1	High	19	31.6
2	Moderate	28	46.7
3	Low	13	21.7
TOTAL	60		100

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Table 4.Association Between Demographic Data of the Respondents and Their Level of Pre-Test

Variables	Statistical tool	Value	Result
Age	Chi-Square Tests	CV = 16.159, DF= 6, Sig= 0.06	Significant
Religion	Chi-Square Tests	CV = 3.863, DF=4, Sig= .425	Not -Significant
Any medical illness	Chi-Square Tests	CV = 2.993, DF= 6, Sig=.810	Not- Significant
Level of education	Chi-Square Tests	CV = 16.542, DF=6, Sig= 0.38	Significant
Family type	Chi-Square Tests	CV = 12.108, DF= 4, Sig.016	Significant
Income	Chi-Square Tests	CV = 18.625, DF= 6, Sig.016	Significant
Dietary Pattern	Chi-Square Tests	CV = 3.706, DF=4, Sig= .447	Not-Significant
Sanitary latrine	Chi-Square Tests	CV = 3.330, DF=4, Sig= .504	Not-Significant

Table 5.Association Between Demographic Data of the Respondents and Their Level of Post-Test

Variables	Statistical tool	Value	Result
Age	Chi-Square Tests	CV = 3.345, DF= 6, Sig=.764	Not-Significant
Religion	Chi-Square Tests	CV = 12.618, DF=2, Sig= .024	Significant
Any medical illness	Chi-Square Tests	CV = 18.495, DF= 6, Sig.007	Significant
Level of education	Chi-Square Tests	CV = 19.144, DF=6, Sig= .001	Significant
Family type	Chi-Square Tests	CV = 14.606, DF= 4, Sig.330	Significant
Income	Chi-Square Tests	CV = 18.896, DF= 8, Sig.009	Significant
Dietary Pattern	Chi-Square Tests	CV = 3.376, DF=4, Sig= .497	Not-Significant
Sanitary latrine	Chi-Square Tests	CV = 3.533, DF=4, Sig= 0.473	Not-Significant

Table 6.Difference Between Demographic Data of the Respondents and Their Level of Post-Test

Variables	Statistical tool	Value	Result
Age	ANOVA	F= 13.165, P<0.05	Significant
Religion	t-test	t = .225, P>0.05	Not- Significant
Any medical illness	ANOVA	F= 12.158, P<0.05	Significant
Level of education	ANOVA	F = 10.868, P< 0.05	Significant
Family type	ANOVA	F = .448, P> 0.05	Not Significant
Income	ANOVA	F = 7.123, P>0.05	Not-Significant
Dietary Pattern	t-test	t= 14.740, P<0.05	Significant
Sanitary latrine	t-test	t =12 .125, P<0.05	Significant

Discussion

This chapter deals with the detailed discussion of the findings of the study interpreted from statistical analysis. The findings are discussed in relation to the objectives.

Level of knowledge regarding UTI and its prevention among 1st-year girls. The study reflected that, in the pre-test, 13 (21.1%) of the samples had a high level of knowledge, 42 (70%) of the samples had moderate knowledge, and 5 (8.3%) of the samples had a low level of knowledge on urinary tract infection (UTI).

Effect of structured teaching program on knowledge regarding UTI among 1st-year girls. The post-test score of 19 (31.6%) of the samples having a high level of knowledge regarding UTI. 28 (46.7%) of the samples have moderate knowledge and 13 (21.7%) of the samples have a low level of knowledge regarding UTI. Which shows that there is significant improvement in the level of knowledge regarding urinary tract infection (UTI) among the samples after the structured teaching program (STP).

Association between level of knowledge on UTI and selected sociodemographic variables.

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This study shows that level of knowledge on UTI is significantly associated with some selected socio-demographic variables, such as age and dietary pattern, but sanitary latrine is not associated with demographic variables.

Difference between level of knowledge on UTI and selected sociodemographic variables.

The table indicates that the post-test scores differed significantly according to age, medical illness, educational level, dietary pattern, and availability of a sanitary latrine, as their respective p-values were below 0.05. In contrast, religion, family type, and income did not show statistically significant differences in post-test scores, as their p-values were above 0.05. Overall the findings suggest that selected demographic and health-related characteristics were associated with variations in respondents' post-test performance, while other characteristics did not demonstrate a significant association.

Conclusion

The purpose of the study is to assess and impart knowledge on UTI among college students. In spite of good knowledge, due to a change in the lifestyle and poor health status, it can lead to a sudden urinary tract infection, which requires immediate intervention. Therefore, it is the responsibility of the health care system to create awareness about UTIs among students.

Based on the study, it is evident that the programs implemented so far by the health care system have proven to be effective in creating awareness regarding the UTI among nursing students. So therefore, this type of study is needed to improve the knowledge of the population regarding the health care system.

Recommendation

Based on the findings of the study, the following recommendations are offered: -

- The study can be replicated on a large sample to validate and generalize findings.
- A quasi-experimental study can be conducted to assess the knowledge regarding UTI.
- A cross-sectional study can be conducted to know the effectiveness of STP on UTI.

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