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# A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Urinary Tract Infection among Adolescent Girls in Junior College, Nagpur

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**Abstract**: ***Aim of the study: The study aims to find the effectiveness of structured teaching programme on Knowledge regarding urinary tract infection among adolescent girls in selected junior college. Objectives: 1) To assess the pre-test knowledge of urinary tract infection. 2) To assess the post-test knowledge of urinary tract infection. 3) To compare the pre-test knowledge score and post-knowledge score of urinary tractinfection. 4) To find out the association between knowledge score with selected demographic variables. Methodology: True experimental pre test post test design was used and quantitative approach was carried out on 30 samples with the age group of adolescent girls (16-19 years of age) selected by simple random sampling to test the effectiveness of structured teaching programme. The data was collected by using structured questionnaire consist of 30 items. Results: The present study evaluates that Pre test minimum score is 3 and maximum score is 11 and mean score is 6.1 and percentage was 20.33%. Post test minimum score is 4 and maximum score is 17 and mean score is 10.86 and percentage was 36.2%. Mean difference is 142. And hence H1is accepted. Interpretation and conclusion: H1 is accepted because there is a mean difference between pre test and the post test score.***

**Keywords:** Assess, Effectiveness, Structured teaching, Urinary tract, infection, Adolescent

## 1. Introduction

Urinary tract infection are the second most common bacterial disease and the most common bacterial infection in women, with at least one third of women developing a UTI before the age of 24. During their lifetime, more than half of women will have a UTI, and up to 50% of these will have another infection within UTIs. UTIs complicate up to 20% of pregnancies and are responsible for 10% of all ante partum admission. More than 15% of patient who developed gram negative bacteraemia die, and one third of these cases are caused by bacterial infection originating in the urinary tract. Inflammation of the urinary tract may be attributable to a variety of disorder, but bacterial infection is by far the most common. The bladder and its contents are free from bacteria in the majority of healthy person.[1]

Urinary tract infection involves any part of urinary tract and can be acquired through the blood or lymph or may enter through the urethra. Infections are called ascending when pathogen moves from urethra to the bladder and descending when pathogen travels from the kidney to the bladder. Most of UTIs are bacterial, but they can be caused by viruses, yeasts and fungi. It is important to treat UTI to prevent renal scarring that can lead to failure.[2]

## 2. Need of the Study

Urinary tract infection (UTI) is an infection that affects part of the urinary tract. When the lower urinary tract is known as a bladder infection (cystitis) and when it affects the upper urinary tract it is known as kidney infection (pyelonephritis). Symptoms from a lower urinary tract include pain with urination, frequent urination, and feeling the need to urinate despite
Having an empty bladder. Symptom of a kidney infection includes fever and flank pain usually in additional to the symptoms to the symptoms of a lower UTI. Rarely the urine may appear bloody. In the very old and the very young, symptoms may be vague or non-specific.[3]Community –associated UTI (CAUTI) prevalence is o.7% and the main risk factors are age, history of UTI, sexual activity and diabetes. The most common pathogen is Escherichia coli and resistance rates to common antibiotics depend very much on the geographical location. The lowest observed resistance was for fosfomycin (range: 0-2.9%), nitrofurantoin (range: 0-4.4%) and mecillinam (range: 0- 4%). Healthcare-associated UTI (HAUTI) frequency among HCAIs is 12.9 (confidence interval: 10.2- 16%), 19.6 and 24% in the United States, Europe and developing countries, respectively. In urology department, the prevalence is 5.1 %. Resistance to almost all antibiotics in HAUTIs is above 20% and there is a significant geographical variation. Community onset HAUTIs bacterial spectrum is similar to hospital onset HAUTIs and different from CAUTIs. It is challenging to provide with to exact frequency of UTIs. Both CAUTI and HAUTI frequency, pathogen spectrum and resistance rates vary according to geographical setting.[4]

## 3. Review of Literature

A cross-sectional observational study, conducted at the Department of Nephrology, Army Hospital Research and Referral, Delhi, India. Two hundred and ten renal transplant recipients were studied over one year. Out of 210 transplant recipients, 69 (32.86%) had UTI. Majority (59/69) had undergone live renal transplantation and 10 cases had received cadaveric grafts. Forty-nine patients had primary infection while 20 patients had recurrences. The mean age of patients with UTI was 38.63 • } 10 years. The incidence of UTI was higher in females (42.25%) than males (28.06%, P = 0.038). Majority of patients in younger age group (age <30 years) were female (58.82%). Males were predominantly affected in

higher (>30 years) age group (61.54%). Most common causative agent was Escherichia coli (72.46%). Gramnegative bacilli accounted for 94.20% (65/69) while Gram-positive cocci for 5.8% (4/69) of positive cultures. Multidrug resistance was highest in Klebsiella pneumoniae (100%). Fifteen cases with UTI were detected to have underlying urinary tract abnormalities, most common being urethral stricture (60%). One patient was detected to have broken double J stent in the renal pelvis which led to recurrent E. coli infection. Forty-eight patients (69.57%) developed acute graft dysfunction secondary to UTI. Female sex (P = 0.038), urinary tract abnormality (P <0.01), prolonged Foley's catheterization (P <0.01), prolonged hospitalization after transplantation (P <0.01), new-onset diabetes after transplantation (P <0.01), and coexisting hepatitis C infection (P = 0.012) were statistically significant predisposing factors for UTI in renal transplant recipients.[5]

**Assumptions**

1) Adolescent girls may have some knowledge regarding UTI.
2) There may be relationship between knowledge score and adolescent selected demographic variables.

**Limitations**

The study is limited to adolescent girls population.
The study is limited to the girl's age group 16-19.
The sample size is limited to 30.

**Hypothesis**

H 0: - There is no significant difference between the pre test and post test knowledge
H1: - There is a significant difference between the pre test and post test knowledge
H2: - There will be association between knowledge score with selected demographic variables.

**Methodology**
**Research approach**: In this study, quantitative approach is used
**Research design**: True experimental pre test post test design.

**Variables under study**

In this study the independent variable was planned teaching about the UTI.

In this study the dependent variables was knowledge regarding UTI.

**Setting**

This study was conducted in selected junior college. The selection was based on easy geographical accessibility, co-operation and availability of samples

**Population**

**Target population**: In this study, it includes the adolescent girls (16 to 19).

**Accessible population**: The accessible population for this study was the adolescent girls (16-19year) in the selected junior college.

**Sample and sampling technique**

**Sample**: In this study samples were adolescent girls in a selected junior college who were fulfilling the inclusion criteria.
**Sample size:** The total sample size is 30
**Sampling technique**: The sampling technique used in the study was non probability convenient sampling.

**Inclusion criteria**: Adolescent girls between the age 16-19 yr.

- Adolescent girls who are willing to participate
- Adolescent girls who are available during the data collection
- Adolescent girls who are able to read and write English and Marathi
- Adolescent girls who are studying in selected junior college

**Exclusion criteria:** Adolescent girls who are not willing to participate

- Adolescent girls who belongs to other faculties except comers

**Conceptual framework:**

**Tool preparation:** Tool used for research study was structured knowledge questionnaire regarding UTI. Tool was prepared after extensive review of literature search, consultation with experts and based on past experience of investigator.

**Development of tool**: The research instrument consist of two sections

**Section 1:** This section includes 6 items seeking information on demographics profile of sample.

It includes age, branch of studying, residence, type of family, religion, and awareness regarding UTI.

**Section 2:** This section includes 20 items and each items was multiple choices with 4 responses.

The score of section 2 are measured based on the worth of correct answers where correct response are given a score of 1and incorrect 0.

**Preparation of STP:** STP was developed on based of review of related literature and the objectives stated for knowledge. The title of the lesson plan was "urinary tract infection assessment".

**Validation of tool:** The validity was establishment by expert from different specialties. The experts were selected based on their clinical expertise, experience and interest in the problem being studied. They were requested to give there valid suggestion on the appropriateness and relevance of the items in the tools. As a whole and valid suggestions and comments of experts included grammatical correction of sentence .else the tool was found to be relevant. The necessary modification has been done as per the experts' advice .after validation of the content, an expert in Marathi translated tool from English to Marathi.

**Reliability**: Karl person correlation coefficient formula was used for reliability. The reliability of tool was 0.8

**Feasibility of the study:** This study was feasible from the point of view of researcher and conducted pilot study.

**Pilot study:** Pilot study was conducted from date 20 /11/2018 to 27/11 / 2018 A sample of 3 adolescent girls of selected junior colleges who fulfill the inclusion criteria. It was answered and solved by adolescent girls and the duration of 15 - 20 min was given to each sample. Researcher observed the responses and recorded on observation checklist. Health education was given on the same day and post-test was conducted on seventh day.

**Data collection procedure:** A formal permission was obtained from the authorities of the selected college. The data was collected from 24 / 11 / 18 to 1 /12 / 18. 30 sample are collected on the basis of criteria for the study .sample are selected junior college. After selection of the sample on the basis of inclusion criteria, researchers has introduced self to adolescent girls and explain the purpose of study and clarified their doubts with details about study and obtains a written consent from the sample. The sample was details about study and obtains a written consent from the sample. A structured questionnaire was given to the sample, they were also interview and were explained about the questionnaires, to assess the knowledge about urinary tract infection it was filled by sample and the duration of 15 – 20 minute was given to each sample. The responses of each sample were recorded on the checklist, health education was given on the same day and post test was conducted on the seventh day. This procedure was continued till reaches achieved sample. At the end of the study, researcher thanked the sample and authorities who helped in the study. Data collection was completed on 1 / 12 / 18.

**Plan for data analysis**: description of demographic characteristics of the sample was computed by frequency and percentage. Mean, Mode, Median and Standard Deviation was used. "t" test, karl pearson correlation coefficient and chi square was used.
**Scoring mode:** score 1 was given to every correct answer and 0 for wrong answer. Based on percentage of scores, level of knowledge was graded as Poor 0 -5, Average 6 – 10, Good 11 – 15, very good -16-20

## 4. Results

**Organization of the data:** The collected data is tabulated, analysed, organized and presented under the following sections.

**Section A**: Distribution of adolescent girls with regards to demographic variables.

| Demographic variable | Categories | Frequency | Percentages |
|---|---|---|---|
| Age | a) 15-16 year | 15 | 50 |
| | b) 17-18 year | 14 | 46.6 |
| | c) 19-20 year | 0 | 0 |
| | d) 20 above | 1 | 3.3 |
| Branch | a) Commerce | 30 | 100 |
| | b) Arts | 0 | 0 |
| | c) Science | 0 | 0 |
| | d) B Sc plane | 0 | 0 |
| Residence | a) Rural | 15 | 50 |
| | b) Urban | 15 | 50 |
| Family | a) Nuclear family | 4 | 13.3 |
| | b) Joint family | 18 | 60 |
| | c) Extended family | 0 | 0 |
| | d)Single parent | 8 | 26 |
| Religion | a) Hindu | 24 | 80 |
| | b) Muslim | 3 | 10 |
| | c) Christian | 1 | 3.3 |
| | d) Other…. | 2 | 6.6 |

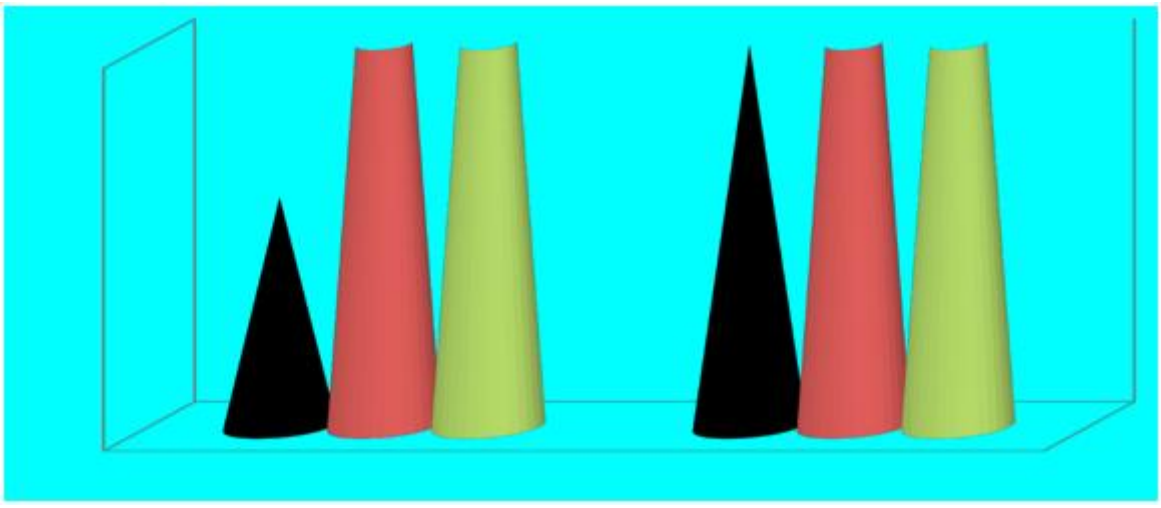
**Section B:** Assessment of knowledge regarding urinary tract infection in adolescent girl in selected junior college. (pre-test)

| Level of knowledge score | Score range | Frequency (f) | Pre – test Knowledge score Percentage (%) |
|---|---|---|---|
| Poor | 0-5 | 13 | 43.33 |
| Average | 6-10 | 16 | 53.33 |
| Good | 11-15 | 1 | 3.33 |
| Very good | 16-20 | 0 | 0 |
| Minimum score | 3 | | |
| Maximum score | 11 | | |
| Mean score | 6.1 | | |
| Mean % | 20.33 | | |

**Section C**: Assessment of knowledge regarding urinary tract infection among adolescent girls in selected junior college. (post-test)

| Level of knowledge score | Score range | Frequency (f) | Post-test Knowledge score Percentage (%) |
|---|---|---|---|
| Poor | 0-5 | 2 | 6.67 |
| Average | 6-10 | 13 | 43.33 |
| Good | 11-15 | 13 | 43.33 |
| Very good | 16-20 | 2 | 6.67 |
| Minimum score | 4 | | |
| Maximum score | 17 | | |
| Mean score | 10.86 | | |
| Mean % | 36.2 | | |

**Section D**: Comparison of knowledge score related to urinary tract infection among adolescent girls in selected junior college. (pre + post test comparison)



**Section E**: Association between post-test knowledge score and selected demographic data.

| Sr. no | Demographical Variables | Post test level of knowledge: Poor f | Poor % | Average F | Average % | Good F | Good % | Very good f | Very good % | Chi-square $(x)^2$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Age** | | | | | | | | | |
| a. | 15-16yr | 0 | 0 | 9 | 30 | 5 | 16 | 1 | 3.3 | |
| b. | 17-18yr | 1 | 3.3 | 5 | 16 | 7 | 23 | 1 | 3.3 | NS* |
| c. | 19-20yr | 0 | 0 | 0 | 0 | 1 | 3.3 | 0 | 0 | $X^2$=12.59 df =6 |
| d. | 20 above | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2 | **Branch** | | | | | | | | | |
| a. | Commerce | 1 | 3.3 | 14 | 46.6 | 13 | 43 | 2 | 6.6 | |
| b. | Arts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NS* |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| c. | Science | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $X^2$=9.7 |
| d. | BSC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | df=0 |
| 3 | **Residence** | | | | | | | | | |
| a. | Rural | 1 | 3.3 | 10 | 33.3 | 4 | 13.3 | 0 | 0 | NS* |
| b. | Urban | 0 | 0 | 4 | 13.3 | 9 | 30 | 2 | 6.6 | $X^2$=6.98 df=3 |
| 4 | **Family** | | | | | | | | | |
| a. | Nuclear family | 0 | 0 | 1 | 3.3 | 3 | 10 | 0 | 0 | |
| b. | Joint family | 0 | 0 | 8 | 26.6 | 8 | 26.6 | 2 | 6.6 | NS* |
| c. | Extended | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $X^2$=4.66 |
| d. | Single parent family | 1 | 3.3 | 5 | 16.6 | 2 | 6.6 | 0 | 0 | df=6 |
| 5 | **Religion** | | | | | | | | | |
| a. | Hindu | 1 | 3.3 | 10 | 33.3 | 12 | 40 | 1 | 3.3 | NS* |
| B | Muslim | 0 | 0 | 2 | 6.6 | 0 | 0 | 1 | 3.3 | $X^2$=6.69 df=9 |
| c. | Christian | 0 | 0 | 1 | 3.3 | 0 | 0 | 0 | 0 | |

**Testing of hypothesis:** H1 is accepted because there is a mean difference between pre test and the post test score.

**Summary:** Majority of sample belongs to 17-18 years of age group.100% of sample belongs to commerce faculty of education. 50% of sample belongs to urban area and 50% of sample belongs to rural area. Majority of samples belongs to joint family. Majority of samples are Hindu. Pre test minimum score is 3 and maximum score is 11 and mean score is 6.1 and percentage was 20.33%. Post test minimum score is 4 and maximum score is 17 and mean score is 10.86 and percentage was 36.2%. Mean difference is 142

## 5. Conclusion

H1 is accepted because there is a mean difference between pre test and the post test score.

## 6. Recommendations

- A similar study can be conducted on a large population for wider generalization.
- A similar study can be conducted by using descriptive method on urinary tract infection.
- A similar study can be conducted to evaluate the efficiency of various teaching strategies like information leaflets, chart, pamphlets and computer assisted instruction on urinary tract infection.
- A similar study can be conducted in married and unmarried women to know their practices about urinary tract infection.
- Mass media and educational programme should be arranged to educate the girls and women regarding urinary tract infection.

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