Study on Effectiveness of Planned Teaching Programme on Knowledge and Practice Regarding Prevention of Urinary Tract Infection among Adolescent Girls at Selected Schools in Udaipur (Rajasthan)

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Abstract

Background: Urinary tract infection is one of the most common types of infection, accounting 25% of all infection. UTIs are much more common in women than in men. Urinary tract infection during adolescence is related to many factors like low water intake, infrequent voiding and poor menstrual and sexual hygiene.

Aim: The aim of the study was to determine the effectiveness of planned teaching programme on knowledge and practices regarding prevention of UTI

Material and Method: A true-experimental design is undertaken to evaluate the effectiveness planned teaching programme on knowledge and practice regarding prevention of UTI. The study consisted of 100 adolescent girls, 50 in each experimental and control group who were selected with two stage cluster sampling technique. The structured knowledge questionnaire and structured practices questionnaire were used to collect data. Both descriptive and inferential statistics were used for data analysis.

Findings: The findings reveal that majority of adolescent girls (49%) belonged to the age group of 15-16 years and were Hindu (50%). The mean pre-test knowledge score was in experimental group 12.04±3.29 and control group 11.38±3.28 respectively while the mean pre-test practice score was in experimental group 12.94±2.85 and control group 11.82±2.48 respectively. The level of knowledge and practice regarding prevention of UTI of subjects who were exposed to PTP was significantly better than that of the control group at 0.05 level of significance. However, there is positive correlation between pretest knowledge and practice scores of adolescent girls in both groups. Pretest level of knowledge of adolescent girls and place of residence whereas, practice and educational status of parents was significantly associated.

Conclusion: The results of the study concluded that the knowledge and practice of adolescent girls could be improved by providing PTP.

Keywords: Planned Teaching Programme, Effectiveness, Knowledge, Practice, Urinary Tract Infection and Adolescent Girls
Introduction

Urinary tract infection is common disease affecting all age groups, from newborn to old age. The prevalence of UTI is higher during adolescence because of hormonal changes that favour vaginal colonization by nephritogenic strains of bacteria, which can reach to periurethral area and cause UTI. Urinary tract infection is associated with many factors like social isolation, poor self esteem, impaired quality of life, depression poor menstrual and sexual hygiene. Among adolescent girls acute uncomplicated urinary tract infection is more prevalent. This is fourth main reason for OPD visit among adolescent girls.

According to National Ambulatory Medical Care Survey and National Hospital Ambulatory Medical Care Survey Within their lifetime, one in three women will experience a urinary tract infection and 50% experience at least one UTI during their lifetime. It is also common for this infection to recur. If predisposing factors are not identified and remove, UTI can lead to more serious consequences, in particular kidney damage and renal failures.

Recent statistics reveals that, symptomatic urinary tract infection will be present in 8% girls during their childhood. National Family Health Survey reported that, in India 16.1% of adolescent girls (15-19) presented with symptoms of urinary tract infection.

One can prevent the urinary tract infections by practicing the proper health habits like good personal hygiene, drinking plenty of water, emptying bladder completely, changing sanitary pads, ect.

Urinary tract infection occurs, when parts of the urinary tract become inflamed/ contaminated. UTI includes cystitis, urethritis and pyelonephritis. 80% of the urinary tract infection is caused by E.Coli, a gram negative bacteria.

Material and Methods

A true-experimental research was conducted to determine the effectiveness of planned teaching programmed on knowledge and practices regarding prevention of UTI among 100 adolescent girls 50 in each experimental and control group studying in selected schools who were selected with two stage cluster sampling technique. To collect data, the structured knowledge questionnaire and structured practices questionnaire were developed. Structured knowledge questionnaire consisted of two parts. Part-I included information related to demographic data and, in Part-II, there were 30 questions under four main categories and structured practice questionnaire consisted 26 items. Data were collected during period of 1 month (Month of September).

A planned teaching programme on prevention of urinary tract infection was developed that included the preparation of the first draft, content validity and preparation of the final draft of the PTP for adolescent girls and it was administered to the experimental group only after pretest.

Content validity was obtained by giving it to seven experts from the field of gynaecology and medical-surgical nursing. Reliability of the structured knowledge questionnaire was established by test-retest method and by using coefficient correlation, which was found 0.89 and for structured practice questionnaire it was 0.91. Hence, the tools were found reliable.

Data were collected after obtaining formal permission from administrative officers and principals of schools. A written consent was obtained from the study participants after explanation about the purpose and usefulness of the study and assurance about the confidentiality of their responses. From day 1-7 the investigator pretested the knowledge and practice of adolescent girls and on day 8th PTP was given to experimental group. On day 9-15 and 22-30 first and second posttest was administered by using same questionnaire for the experimental and control group.

The data were analyzed by descriptive and inferential statistics using Microsoft excel sheet and EP-Info. Descriptive statistics were used to describe the characteristics of study sample in terms of frequency and percentage. Mean, median, standard deviation and range were used to assess the knowledge and practice of adolescent girls on prevention of urinary tract infection.

Inferential statistics were also used to compare the significant difference of knowledge and practice by using paired and independent ‘t’ test among same group and different group. Correlation was also calculated to identify the relationship between knowledge and practice while association was computed to find out the association of adolescent girls knowledge and practice scores with their selected personal variables.
Table 1. Frequency and percentage distribution of subjects according to their demographic characteristics and Chi-square values between experimental and control group

| Sample characteristics          | Experimental Group n =50 | Control Group n =50 | Total N=100 | Chi-square value | df | Level of significance |
|--------------------------------|--------------------------|---------------------|-------------|------------------|----|-----------------------|
|                                | f                        | %                   | f           | %                |    |                       |
|                                |                          |                     |             |                  |    |                       |
| Age in years                   |                          |                     |             |                  |    |                       |
| 15-16                          | 28                       | 56                  | 21          | 52               | 4.76 | 2 | NS                    |
| 16-17                          | 19                       | 38                  | 19          | 38               | 38  | 33.6                  | 2 | S                     |
| 17-18                          | 3                        | 6                   | 10          | 20               | 13  |                       |   |                       |
| Religion                       |                          |                     |             |                  |    |                       |
| Hindu                          | 39                       | 78                  | 11          | 22               | 50  | 33.6                  | 2 | S                     |
| Muslim                         | 7                        | 14                  | 26          | 52               | 33  |                       |   |                       |
| Christian                      | 4                        | 8                   | 13          | 26               | 17  |                       |   |                       |
| Occupation of Parents          |                          |                     |             |                  |    |                       |
| Agriculture                    | 3                        | 6                   | 8           | 16               | 11  | 6.775                 | 4 | NS                    |
| Business                       | 25                       | 50                  | 19          | 38               | 44  |                       |   |                       |
| Health Sectors                 | 2                        | 4                   | 2           | 4                | 4   |                       |   |                       |
| Coolie                         | 2                        | 4                   | 16          | 32               | 18  |                       |   |                       |
| Others                         | 18                       | 36                  | 5           | 10               | 23  |                       |   |                       |
| Education of Father            |                          |                     |             |                  |    |                       |
| < Lower primary                | 2                        | 4                   | 20          | 40               | 22  | 38.4                  | 3 | S                     |
| Secondary                      | 12                       | 24                  | 17          | 34               | 29  |                       |   |                       |
| Sr. Secondary                  | 2                        | 4                   | 7           | 14               | 9   |                       |   |                       |
| > Diploma or Degree            | 34                       | 68                  | 6           | 12               | 40  |                       |   |                       |
| EDUCATION OF MOTHER            |                          |                     |             |                  |    |                       |
| < Lower primary                | 1                        | 2                   | 20          | 40               | 21  | 39.36                 | 3 | S                     |
| Secondary                      | 16                       | 32                  | 24          | 48               | 40  |                       |   |                       |
| Sr. Secondary                  | 13                       | 26                  | 5           | 10               | 18  |                       |   |                       |
| > Diploma or Degree            | 20                       | 40                  | 1           | 2                | 21  |                       |   |                       |
| Place of Residence             |                          |                     |             |                  |    |                       |
| Rural                          | 7                        | 14                  | 10          | 20               | 17  | 0.826                 | 2 | NS                    |
| Semi Urban                     | 15                       | 30                  | 16          | 32               | 31  |                       |   |                       |
| Urban                          | 28                       | 56                  | 24          | 48               | 52  |                       |   |                       |
| Parents Income/ Month          |                          |                     |             |                  |    |                       |
| Below 10000                    | 2                        | 4                   | 21          | 42               | 23  | 2.012                 | 3 | NS                    |
| 2. 10001-15000                 | 10                       | 20                  | 23          | 46               | 33  |                       |   |                       |
| 15001-20000                    | 21                       | 42                  | 4           | 8                | 25  |                       |   |                       |
| 20001 & Above                  | 17                       | 34                  | 2           | 4                | 19  |                       |   |                       |
| Previously Suffered From UTI   |                          |                     |             |                  |    |                       |
| Yes                            | 10                       | 20                  | 13          | 26               | 23  | 1.081                 | 1 | NS                    |
| No                             | 40                       | 80                  | 37          | 74               | 77  |                       |   |                       |

NS= Not Significant; S= Significant; *= Yates correction done
The data presented in Table 2 shows that the mean pre-test knowledge score is 12.04 with S.D ±3.29 in experimental group and 11.38 with S.D. ±3.28 in control group. The mean post-test –I knowledge score and posttest –II knowledge scores is 23.52 with standard deviation ±3.64 and 23.4 with standard deviation ±3.62 respectively in experimental group and 11.42 with standard deviation ±3.32 and 11.24 with standard deviation ±3.23 in control group.

| Group     | Pre-test | Post-test-I | Paired 't' test | Post-test-II | Paired 't' test |
|-----------|----------|-------------|-----------------|--------------|----------------|
|           | Mean     | SD          | Median          | Mean         | SD            | Median          | Mean             | SD            | Median        | Mean             | SD            | Median        |
| Experimental | 12.04 ±3.29 | 12 | 23.52 ±3.64 | 24 | 27.12 | 23.4 ±3.62 | 24 | 26.43 |
| Control    | 11.38 ±3.28 | 11 | 11.42 ±3.32 | 12 | 0.971 | 11.24 ±3.23 | 11 | 0.907 |

Table 3. Mean pretest, mean posttest-I, mean gain, 't' value, mean posttest-II, mean gain and 't' value of knowledge scores of adolescent girls among experimental and control group on prevention of urinary tract infection

| Group     | Mean pretest | Mean posttest-I | Mean gain | Independent 't' test | Mean posttest-II | Mean gain | Independent 't' test |
|-----------|--------------|-----------------|-----------|----------------------|-----------------|-----------|----------------------|
| Experimental | 12.04 | 23.58 | 11.48 | 17.18 | 23.4 | 11.36 | 17.62 |
| Control    | 11.38 | 11.42 | 0.04 | 0.942 | 11.84 | 0.08 | 0.912 |

The data presented in Table 3 shows that mean gain in posttest knowledge scores of adolescent girls in experimental group is significantly higher than the control group as evident from ‘t’ value of 17.18 with posttest-I and 17.62 with posttest-II df t (98) at 0.05 level of significance.

The data presented in Table 4 shows that the mean pre-test practice score is 12.94 with S.D ±2.85 in experimental group and 11.82 with S.D. ±2.48 in control group. The mean post-test –I practice score and posttest –II practice scores is 17.94 with standard deviation ±1.54 and 17.82 with standard deviation ±1.67 respectively in experimental group and 11.84 with standard deviation ±2.27 and 11.9 with standard deviation ±2.31 in control group.

| Group     | Mean pretest | Mean posttest-I | Mean gain | Independent 't' test | Mean posttest-II | Mean gain | Independent 't' test |
|-----------|--------------|-----------------|-----------|----------------------|-----------------|-----------|----------------------|
| Experimental | 12.94 | 17.94 | 5 | 15.60 | 17.82 | 4.88 | 13.83 |
| Control    | 11.82 | 11.84 | 0.02 | 11.82 | 11.9 | 0.08 | 13.83 |

The data presented in Table 5 shows that mean gain in posttest practice scores of adolescent girls in experimental group is significantly higher than the control group as evident from ‘t’ value of 15.60 with posttest-I and 13.83 with posttest-II df t (98) at 0.05 level of significance.
Table 6. Correlation coefficient of pretest knowledge and practice scores of adolescent girls in experimental group and control group

| Scores                | Experimental Group | Control Group |
|-----------------------|--------------------|---------------|
|                       | Mean score         | Correlation coefficient | Mean score | Correlation coefficient |
| Pretest knowledge scores | 12.04              | 0.76           | 11.38      | 0.75                   |
| Pretest practice scores | 12.94              |                | 11.82      |                        |

Presented data in table 6 reveals that there is positive correlation between pretest knowledge and practice scores of adolescent girls both in experimental and control group.

Discussion

The major findings of the present study have been discussed with reference of the objectives and hypotheses stated and with findings of other related studies for the possible explanation. Maximum numbers of adolescent girls (49%) belonged to the age group of 15-16 years and were Hindu (50%). Majority of adolescents girls (44%) and (52%) parent’s occupation was business and residing in urban area respectively. Little less than one fourth of sample (23%) had experience of urinary tract infection previously. Though no related literature could be retrieved for comparison but some other studies 11,12,13 shows that 66.7% females aged 7-15 years had urinary tract infection and 13.1% female had symptoms related to urinary tract infection.

With regards to the findings related to effectiveness of PTP revealed that the mean posttest knowledge and practice scores of adolescent girls who have attended PTP was significantly higher than their mean pretest practice scores as evident from ‘t’ value of 17.18 with posttest I and 17.62 with posttest II for knowledge while it was 15.60 with posttest I and 13.83 with posttest II at 0.05 level of significance whereas, there was no significant difference between mean pretest and posttest knowledge and practice scores of control group ‘t’ (49) =0.954 at 0.05 level of significance. The mean gain in posttest knowledge and practice scores of adolescent girls was significantly higher than the control group as evident from ‘t’ value of at 0.05 level of significance. Hence, PTP was found to be an effective strategy to improve the knowledge and practice of adolescent girls regarding prevention of urinary tract infection. Results of other studies 10,11 conducted to assess the effectiveness of health education programme on prevention and management of urinary tract infection shows the improvement in the practice of adolescent girls on prevention of UTI, which is consistent with the findings of this study.

Both in experimental and control group, coefficient correlation value between pretest knowledge and practice scores was found significant but no related studies are available for comparison of these findings.

There is no significant association between pretest level of knowledge of adolescent girls and their selected personal variables except for place of residence whereas, practice was only associated with educational status of parents. No similar study could be found to compare these findings, but findings of other studies 14,15 shows positive association between urinary tract infection and improper perineal washing technique, use of unsanitary pads during menstruation, malnutrition, vaginal discharge and pinworm infestation.

Conclusion

The analysis of findings concluded that PTP is an effective method to increase the knowledge and practice of adolescent girls regarding prevention of urinary tract infection as the computed ‘t’ test was significant at 0.05 level of significance. Coefficient correlation value between pretest knowledge and practice scores was found significant. It also concluded that knowledge was associated with place of residence and practice with educational status of parents.

Conflict of Interest: None

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