



International Journal of Research In Paediatric Nursing

E-ISSN: 2664-1305
P-ISSN: 2664-1291
www.paediatricnursing.net
IJRPN 2024; 6(1): 12-18
Received: 11-11-2023
Accepted: 13-12-2023

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A study to assess the effectiveness of self-instructional module on knowledge regarding prevention of urinary tract infection among adolescent girls in selected higher secondary school, Kerala

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DOI: <https://doi.org/10.33545/26641291.2024.v6.i1a.147>

Abstract

Background: Urinary tract infection is the bacterial infections, most often caused by an ascending infection starting at the external urinary meatus and progressing towards the urinary bladder and kidneys. It is highly prevalent among adolescent girls with a 3.5% incidence rate. Worldwide prevalence rate of urinary tract infection was estimated to be around 150 million per year.

Objectives: To assess the existing level of knowledge regarding prevention of urinary tract infection among adolescent girls, to evaluate the effectiveness of self-instructional module on knowledge regarding prevention of urinary tract infection among adolescent girls and to find out the association between the existing levels of knowledge with selected demographic variables.

Methods: The research design adopted was pre-experimental one group pre-test and post-test design. The study was conducted in St. Mary's Higher Secondary School, Adoor. By using purposive sampling technique, 45 adolescent girls who have met the inclusion criteria were selected as samples. Data were collected by structured knowledge questionnaire to assess the existing level of knowledge of adolescent girls regarding prevention of urinary tract infection, followed by administration of self-instructional module, after 5 days post-test was conducted by using same knowledge questionnaire.

Results and Discussion: The present study results revealed that 't' value was significant. Among the samples mean post-test scores on knowledge regarding prevention of urinary tract infection among adolescent girls (20.3) was more than that of the mean pre-test scores (12.9). This implies that the knowledge level had improved after the administration of self-instructional module.

Conclusion: The findings of the study revealed that administration of self-instructional module on prevention of urinary tract infection helped to improve the level of knowledge among adolescent girls.

Keywords: Assess, knowledge, effectiveness, self-instructional module, prevention of urinary tract infection and adolescent girls.

Introduction

Urinary tract infection, is the second most common bacterial disease and the most common bacterial infection in women. Urinary tract infection is the most common of all in affecting humans throughout their lifespan. It occurs in all population from neonates to geriatrics. Urinary tract infection is the bacterial infections, most often caused by an ascending infection starting at the external urinary meatus and progressing towards the urinary bladder and kidneys.

Women are more susceptible to all than men because of the short length of the female urethra and its proximity to the anus and vagina. In early adolescent; the occurrence of urinary tract infection is due to lack of personal hygiene and short length of urethra; in pregnancy it is due to the bacterial infection and heat production. In aged women; increased incidence of urinary tract infection is due to increased immune dysfunction or neurogenic bladder. Urinary tract infection is the most common cause of acute bacterial sepsis, in patients over 65 years of age.

Adolescents belong to a very vital age group because they are the "entrant population" to parenthood. Adolescence is an extremely enthusiastic, energetic, joyous and fun-loving period. But the beauty of this phase is marked by emotion, myths, insecurities, apprehension, misbelief which are the direct result of lack of knowledge and information.

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Need and significance of the study

As per WHO, it is estimated that one billion women around the world suffer from non-sexually transmitted urogenital infection, including bacterial vaginitis, yeast vaginitis, and urinary tract infection. Adolescents contribute about one fifth of population. Therefore, it can be considered as a huge segment of population. Urinary tract infection is highly prevalent among adolescent girls with a 3.5% incidence rate. Worldwide prevalence rate of urinary tract infection was estimated to be around 150 million per year. One woman in five times develops urinary tract infection during her lifetime.

Urinary tract infection is the second most common infection in the body. Among adolescent girls acute uncomplicated urinary tract infection is more prevalent. This is the fourth main reason for outpatient visit among adolescent girls. An analytical study on urinary tract infection among adolescent girls which shows result of 60% girls (between 10-19 years of age who attended gynae OPD) attended the study with presence of urinary tract infection. It concluded that urinary tract infection is a common problem of adolescence; causing much discomfort and loss of school. The need is to educate our girls regarding good hydration and hygiene.

Among bacterial infection, urinary tract infection is the second most common infection which is seen by health care providers. This infection is affecting more than 8 million people per year. In 1997, National Ambulatory Medical Survey reported that, 7 million office visits as well as 1 million emergency room visit and 100,000 hospitalizations occur due to urinary tract infection.

The study also identified that knowledge of the students was average and signifies the need and importance of implementing various programme for adolescent girls on various topics as it would help to improve knowledge and healthy practices; through which the children can build up a healthy nation.

Nurses being a part of the health team have responsibility to educate the adolescent girls and show correct pathway to prevent urinary tract infection. Hence, the above-mentioned factors motivated the investigators to undertake this study.

Objectives

1. To assess the existing level of knowledge regarding prevention of urinary tract infection among adolescent girls.
2. To evaluate the effectiveness of self-instructional module on knowledge regarding prevention of urinary tract infection among adolescent girls.

Research Hypotheses

H₀: There is no significant difference between pre and post-test knowledge score regarding prevention of urinary tract infection among adolescent girls in selected higher secondary school, Kerala.

H₁: There is a significant difference between pre and post-test knowledge score regarding prevention of urinary tract infection among adolescent girls in selected higher secondary school, Kerala.

Research Methodology

In this study quantitative research approach is used, and the research design is used pre-experimental one group pre-test, post- test design.

The present study was carried out at St Mary's Higher Secondary School, Adoor, Pathanamthitta. In the present study, population selected was adolescent girls between the age group of 15 to 17 years. In this study the sample was adolescent girls between the age group of 15 to 17 years studying in St. Mary's higher secondary school, Adoor who fulfils the inclusion and exclusion criteria. The sample size was 45. Inclusion Criteria, the students who are studying in XI standard at St. Mary's higher secondary school Adoor. The students who are present at the time of data collection. Exclusion Criteria the students who have undergone previous awareness programs or classes on prevention of urinary tract infection.

Tool / Instruments

For the present study the investigator developed tool, which consists of 2 sections.

Section-A: Demographic proforma consists of 11 questions, which includes the area of residence, religion, educational qualification of mother, monthly income, amount of water consumption per day, number of voiding during class hours, symptoms of urinary tract infection, previous knowledge regarding urinary tract infection, previous experience of urinary tract infection, family history of urinary tract infection, experience of urinary tract infection during menstrual period.

Section-B: A structured knowledge questionnaire comprising of 25 knowledge questionnaire which are used to assess the knowledge of adolescent girls regarding prevention of urinary tract infection. Each question has 4 options, the respondent need to choose an answer from the choices. Each right answer carries one mark and each wrong and unanswered carry zero mark.

The maximum score in the test is 25. According to the score obtained from the questionnaire the samples will be grouped in 3 ranks. Time limit given was 30 minutes.

Distribution of score and ranking

Score	Ranking
0-12	Inadequate knowledge
13-18	Moderately adequate knowledge
19-25	Adequate knowledge

Data Collection Process

Pre-test was conducted by using structured knowledge questionnaire regarding prevention of urinary tract infection, followed by administering self-instructional module with the duration of 30 minutes. Post-test was conducted after 5 days with the same knowledge questionnaire.

Data was analyzed by using descriptive and inferential statistics.

- Demographic variables by frequency and percentage.
- Pre-test and post-test score by frequency and percentage.
- Effectiveness of self-instructional module by paired 't' Test.

The association between the existing level of knowledge of adolescent girls regarding prevention of urinary tract infection and selected socio- demographic variables was determined by 'chi' square test.

Results

Table 2: Distribution of frequency and percentage of samples based on residential area

Variable	Characteristics	Frequency (F)	Percentage (%)
Area of residence	Urban	10	22
	Rural	35	78

Table 2 reveals that more than three-fourth (78%) lives in rural area and only less than one-fourth (22%) lives in urban area.

Table 3: Distribution of frequency and percentage of samples based on religion, N=45

Variables	Characteristics	Frequency (F)	Percentage (%)
Religion	1. Hindu	19	42
	2. Christian	20	45
	3. Muslim	6	13
	4. Others	0	0

Table 3 depicts that, among the 45 adolescent girls, 19 (42%) are Hindus, 20 (45%) are Christians and 6 (13%) are Muslims.

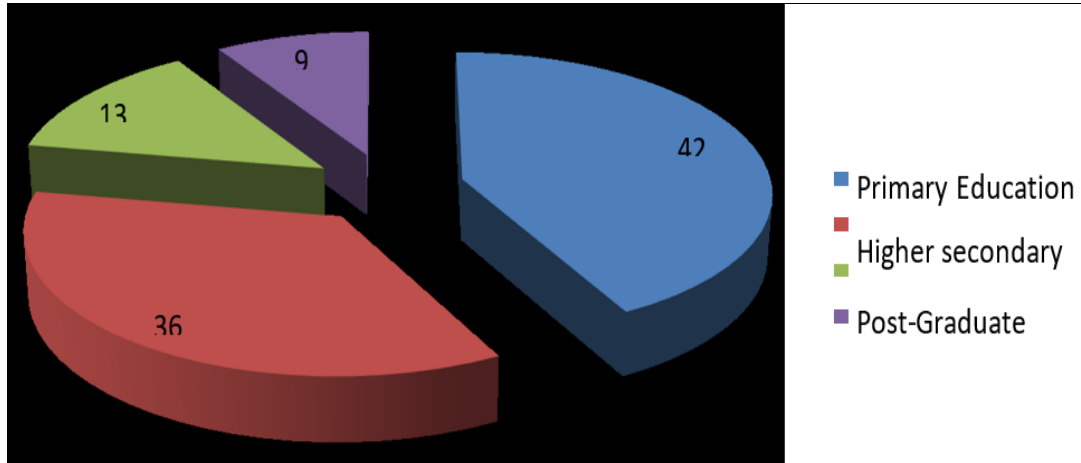


Fig 3: Distribution of frequency and percentage of samples according to Educational status of Mother

Figure 3 illustrates that, 19 (42%) of subject’s mothers have primary education, 16 (35%) are having Higher secondary

education, 6 (13%) are having Undergraduate education, and 4 (10%) has post graduate education.

Table 4: Distribution of frequency and percentage of samples based on occupation of mother, (N=45)

Variables	Characteristics	Frequency (F)	Percentage (%)
Occupation	Private	8	17
Government		8	17
Unemployed		17	38
Self-employed		12	28

Table 4 shows that, 8 (17%) mothers are having Private Job, 8 (17%) has Government job, 17 (38%) are unemployed and

12 (28%) are self-employed.

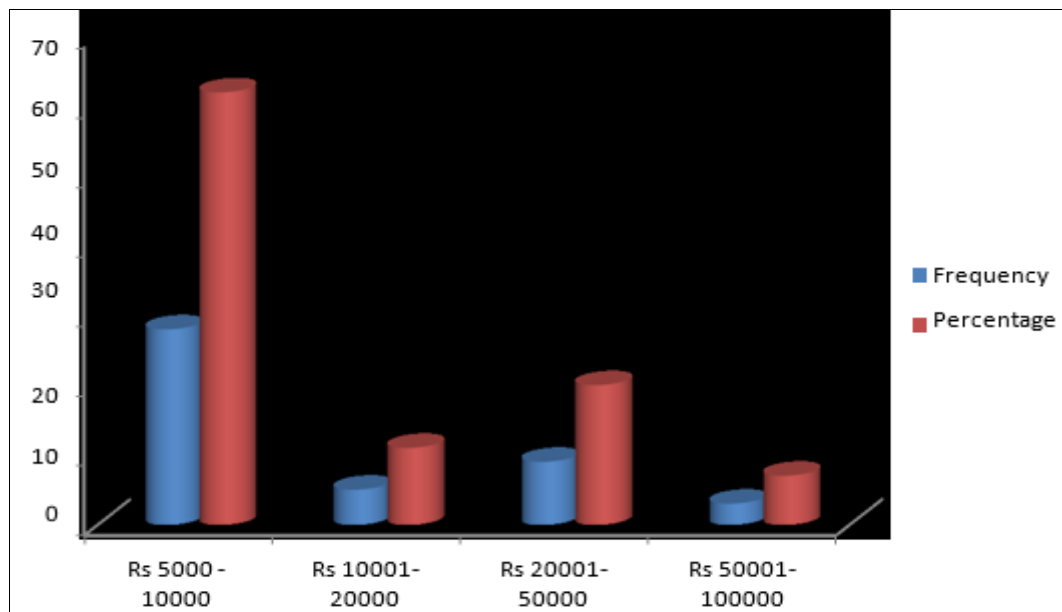


Fig 4: Distribution of frequency and percentage of samples according to income, N=45

Table 5: Distribution of percentage and frequency of samples according to amount of water consumption per day, N=45

Variables	Characteristics	Frequency (F)	Percentage (%)
Amount of water consumption per day	6 glasses	23	51
	2 glasses	7	16
	3 glasses	7	16
	8 glasses	8	7

Table 5 shows that 23(51%) consumes 6 glasses, 7 (16%) consumes 2 glasses, 7 (16%) consumes 3 glasses, and only 8 (7%) consumes 8 glasses of water per day.

Table 6: Distribution of frequency and percentage of samples based on number of voiding during school hours, N=45

Variables	Characteristics	Frequency (F)	Percentage (%)
Number of voiding during school hours	1 Time	19	42.2
	2 Time	14	31.1
	3 Time	9	20.1
	Never	3	6.6

Table 6 presents that 19(42.2%) students voids 1 time during school hours, 14 (31.1%) voids 2 times, 9 (20.1%) voids 3 times and 3(6.6%) never voids during school hours.

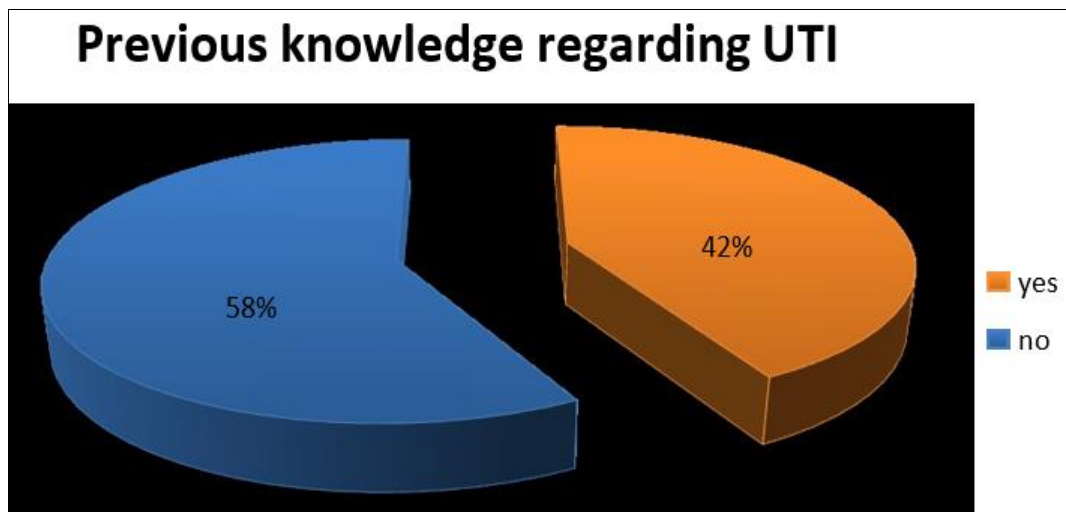


Fig 5: Distribution of frequency and percentage of samples according to previous knowledge regarding urinary tract infection

Figure 5 reveals that more than half 26(58%) of adolescent girls do not have previous knowledge regarding Urinary Tract Infection and more than one third 19(42%) has previous knowledge regarding Urinary Tract Infection.

Figure 6 Distribution of frequency and percentage of samples present with the symptoms of Urinary Tract Infection.

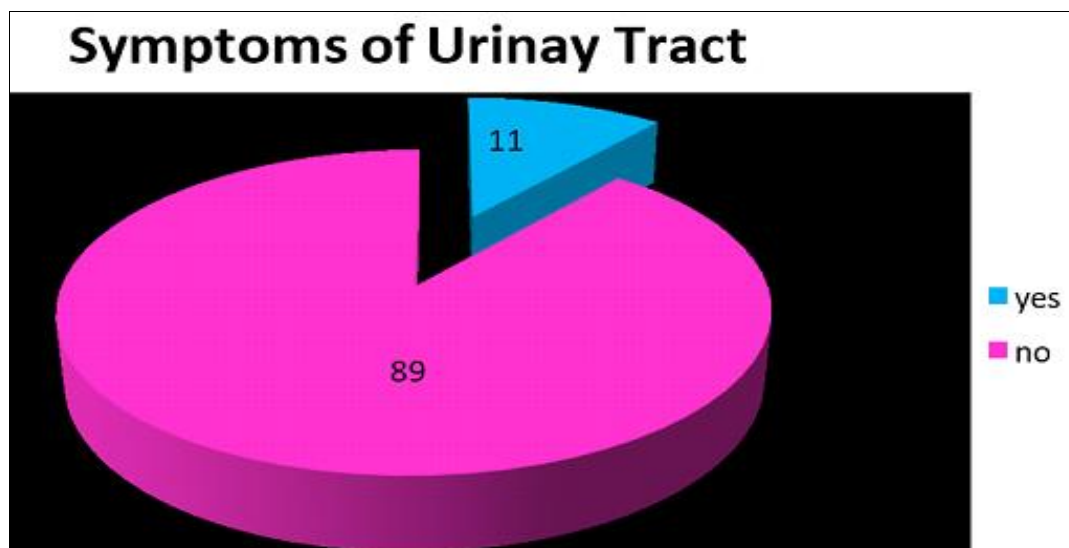


Fig 6: Reveals more than three fourth 40 (89%) are not experiencing any symptoms of Urinary tract Infection, only 5(11%) adolescent girls are experiencing symptoms of urinary Tract Infection.

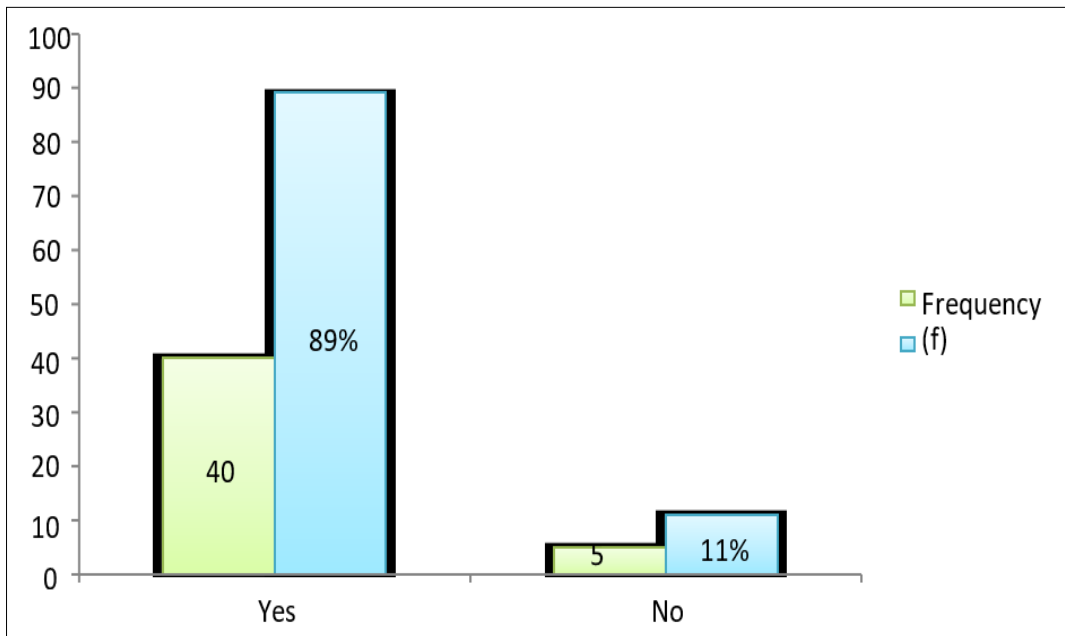


Fig 7: Distribution of frequency and percentage of samples with incidence of Urinary Tract Infection among family members

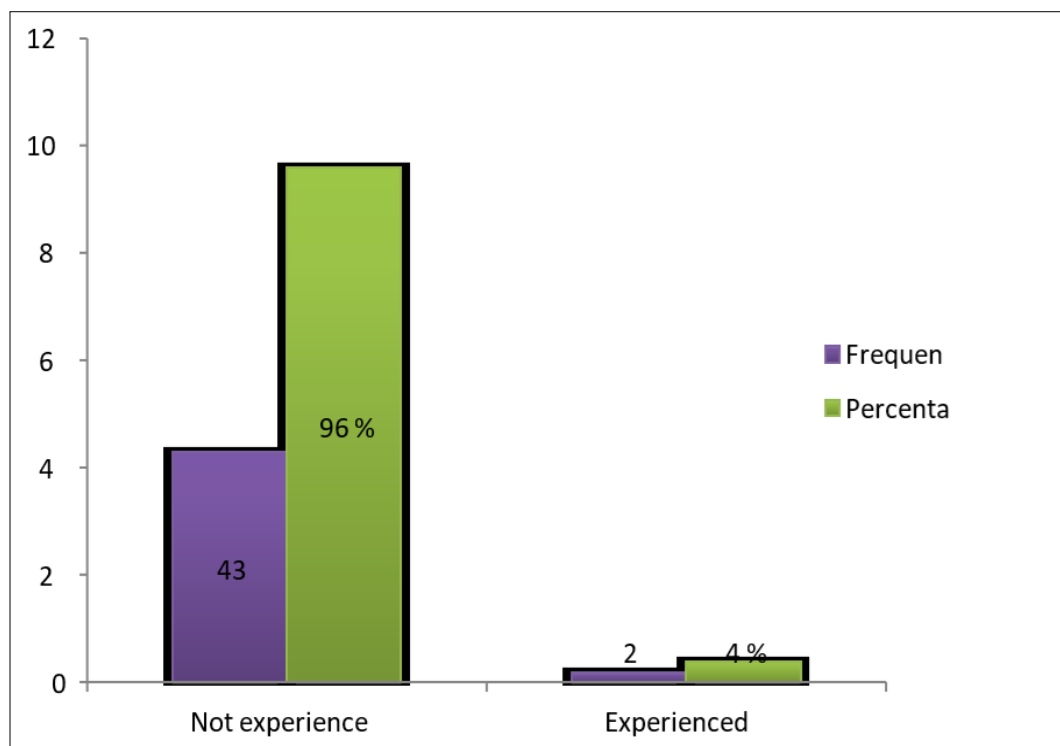


Fig 8: Distribution of frequency and percentage of samples based on presence of symptoms of urinary tract infection during menstrual period

Figure 8 reveals that 43(96%) not experienced urinary tract infection during menstrual period and only 2(4%) experienced urinary tract infection during menstrual period.

urinary tract infection

In order to assess the existing level of knowledge of adolescent girls regarding prevention of urinary tract infection structured knowledge questionnaire was administered. The comparison between pretest and posttest knowledge was identified and presented in Table 7.

Section-2: Frequency and percentage distribution of level of knowledge of adolescent girls regarding prevention of

Table 7: Comparison between pretest and posttest knowledge of adolescent girls regarding urinary tract infection, N=45

SL. No	Knowledge Score	Pretest		Posttest	
		Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)
1.	Adequate	3	6.7%	35	77.8%
2.	Moderately Adequate	27	60%	2	4.4%
3.	Inadequate	15	33.3%	8	17.8%

Data presented in the Table 7 indicates that, out of 45 adolescent girls 3 (6.7%) had adequate knowledge, 27(60%) had moderately adequate knowledge and 15(33.3%) had inadequate knowledge during pretest. Whereas, in posttest majority of them out of 45, 35(77.8%) had adequate knowledge, 2(4.4%) had moderately adequate knowledge and 8(17.8%) had inadequate knowledge regarding prevention of urinary tract infection.

Section-3: Effectiveness of self-instructional module on knowledge regarding prevention of urinary tract infection

The effectiveness of self-instructional module on knowledge regarding prevention of urinary tract infection among adolescent girls identified by the computation of mean, mean difference and standard deviation which is depicted in the Table 8.

Table 8: Mean, Standard deviation, mean difference and calculated 't' value to compare pre-test and post-test score of knowledge regarding prevention of urinary tract infection among adolescent girls, N=45

Knowledge Score	Mean	Mean Difference	SD	SD Difference	DF	't'
T Value Pre-test	12.9	3.179		0.21	44	2.021
Post-test	20.3		3.38			

** Significant at 0.05 level.

Data presented in Table 8 shows that paired 't' test was used

to compare the pre-test and post-test level of knowledge of adolescent girls regarding prevention of urinary tract infection. The mean pre-test score was 12.9(SD=3.179), which was significantly lower than the mean post-test score 20.3(SD=3.38), with a mean difference of 7.4. At 5% level of significance 't' Table value was 2.021. Since calculated value is greater than Table value, test is significant statistically, reject null hypothesis (H_0), accept research hypothesis (H_1), that there is a significant difference noted between before and after the administration of self-instructional module.

From this it can be said that the self- instructional module was effective in increasing the knowledge level of adolescent girls regarding prevention of urinary tract infection.

Section-4: Association on level of knowledge of adolescent girls regarding prevention of urinary tract infection with selected socio-demographic variables.

This section attempts to study the association of pre-test level of knowledge among adolescent girls with selected socio-demographic variables, like residence, religion, educational qualification of mother, occupation of mother, family income, amount of drinking water, number of voiding during school hours, previous knowledge regarding urinary tract infection, family history of urinary infection and presence of urinary tract infection during menstrual period.

Table 9: Association of level of knowledge of adolescent girls regarding prevention of urinary tract infection with selected socio-demographic variables, N=45

Pre-test level of knowledge				
Socio-demographic variable	χ^2	DF	χ^2 Table Value	Inference
Area of residence	0.920	2	5.99	NS
Religion	1.51	4	9.49	NS
Education of mother	2.08	6	12.59	NS
Occupation of mother	13.7	6	12.59	S
Family income	3.75	6	12.59	NS
Amount of water consumption	11.8	6	12.59	NS
No of voiding during school	4.5	6	12.59	NS
Hours Previous knowledge regarding	8.54	2	5.99	S
UTI Family history of UTI	6.92	2	5.99	S
History of UTI	7.08	2	5.99	S
UTI during menstrual period	5.28	2	5.99	NS

NS-Not Significant, S-Significant

Data presented in Table 9 shows that, chi-square test was to determine association between the pre-test level of knowledge and selected demographic variable.

Discussion

Urinary tract infection has become a serious health threat for adolescent girls, because of inadequate intake of water, infrequent voiding and unhygienic practices. So the present study was practiced on urinary tract infection.

The present study was focused on the effectiveness of self-instructional module on knowledge regarding prevention of urinary tract infection among adolescent girls.

Objective 1: Findings related to socio-demographic variables

Among the 45 samples, 35(78%) belongs to rural area. Based on Religion 20(45%) were Christians, 19(42%) were Hindus and only 6(13%) were Muslims. 19(42%) of mother

have primary education, 16(35%) were having higher secondary education, 6(13%) were under graduated, and only 4(8%) were post-graduates. 17(38%) were unemployed, 8(17%) were in government sector and 12(28%) were self-employed. Majority of the subjects 28(62%) had family income between Rs. 5000-10000, 5(11%) had income between Rs. 10001-20000, 9(20%) had income between Rs. 20001-50000 and only 3(7%) had income between Rs. 50001-100000.

According to the amount of the water consumption per day, 23(51%) consumes 6 glasses of water per day, 7(16%) consumes only 2 glasses, 7(16%) consumes 3 glasses of water and remaining 8(17%) consumes 8 glasses of water per day. Regarding number of voiding during school hours, 19(42.2%) of girls void only once, 14(31.1%) voids twice during school hours, 9(20.1%) void three times and 3(6.6%) never void during school hours. Based on previous level of knowledge regarding urinary tract infection, 26(58%) of

adolescent girls do not have any previous knowledge and only 19(42%) have little knowledge on urinary tract infection.

With regard to previous history of urinary tract infection, 40(89%) had not experienced any symptoms of urinary tract infection and only 5(11%) had experienced symptoms of urinary tract infection.

In this study there is a significant association between the level of knowledge and occurrence of urinary tract infection. At 5% level of significance, the Table value is 5.99 and calculated 't' value is greater than Table value. Hence chi square is significant.

Summary

Based on these relevant existing backgrounds research was conducted with an intention to assess the effectiveness of self-instructional module on knowledge regarding prevention of urinary tract infection among adolescent girls in selected higher secondary school, Kerala.

Conclusion

The study finding revealed that the self-instructional module was effective in increasing the knowledge and practice of adolescent girls regarding prevention of urinary tract infection.

Limitations

- The study was conducted in a single setting.
- The sample size of the study was not adequate
- This is a school-based study.
- A limited time available for data collection.
- Only adolescent girls between the age group 15-17 were included in the study.

Recommendation

A study may be conducted using other teaching strategies like structured teaching programme and video making

- A comparative study can be conducted with different population and settings.
- A similar study can be conducted in a large sample size.

Conflict of Interest

Not available

Financial Support

Not available

References

1. Dirksen SR, Manik S, Idolia L. Cox collier. Clinical Companion to Medical Surgical Nursing. 1st Ed. Mosby publications; c2004. p. 596-597.
2. Black JM, Hawks JH. Medical Surgical Nursing. Elsevier Publications. 8th Ed; c2009. Vol. 1, 727.
3. Smith DR. General Urology. 4th Ed. Lange Medical Publications. p. 149-150.
4. Ansari J, Kaur R. A Textbook of Medical Surgical Nursing. 3rd Ed. Pee VEE Publications, Vol. 1. p. 1179-1180.
5. Venkatesan B. Textbook of Medical Surgical Nursing. 1st Ed. EMMEES Medical Publications; c2019. p. 463-466.
6. Basavanhappa BT. Medical Surgical Nursing. 3rd Ed. Jaypee Medical Publications; Vol. 2. p. 1134-1135.

7. Workman I. Medical Surgical Nursing. 7th Ed. Elsevier publications; Vol. 1. p. 1527-1529.
8. Hinkle JL, Cheever KH. Textbook of Medical Surgical Nursing. 13th Ed. Wolters KLUWERS Publications; p. 1575-1578. Vol-2.
9. Park K. Preventive and Social Medicine. 9th Edition. Banarsidas Bhannot Publications; c2017. p. 13-15.

How to Cite This Article

Joseph M. A study to assess the effectiveness of self-instructional module on knowledge regarding prevention of urinary tract infection among adolescent girls in selected higher secondary school, Kerala. International Journal of Research in Paediatric Nursing. 2024;6(1):12-18.

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