"Evaluate the Effectiveness of Structured Teaching Programme on Knowledge Regarding Urinary Tract Infection [UTI] & its Prevention Among Adolescent Girls in Selected Senior Secondary Schools At Udaipur, Rajasthan."

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Abstract: *A quasi experimental study to evaluate the effectiveness of structured teaching programme on knowledge regarding urinary tract infection [UTI] & its prevention among adolescent girls in selected senior secondary schools. The sample consisting of 140 adolescent girls. Adolescent girls were selected by using simple random sampling. The tool comprised of structured self administered questionnaire. The post was conducted after one week. The data obtained were analyzed by using descriptive and inferential statistics. The mean score of post test knowledge 32.77 (91.03%) was apparently higher than the mean score of pre test knowledge score 16.60 (46.11%), suggesting that the structured teaching programme was effective in increasing the knowledge of the adolescent girls regarding urinary tract infection [UTI] & its prevention. The mean difference 16.17 between pre test and post test knowledge score of the adolescent girls was found to be significant.*
Key words: *urinary tract infection [UTI] & its prevention, adolescent girls, quasi experimental study.*

I. Introduction

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.[1] But the beauty of this phase is marked by emotions, myths, insecurities, apprehensions, misbelieves etc which are the direct result of lack of information and knowledge.[2]

This is a crucial period in the adolescent life because alteration in the physical and physiological functions takes place in the body. In this stage of their life the adolescents should take care of themselves in various aspects like personal hygiene, nutrition, exercise and periodic health check-ups.[3]

Approximately 60% of women will have at least one episode of UTI during their lives. 3,4 The prevalence of UTI is higher during adolescence, a period in which hormonal changes favour 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. Significantly, this health problem is contributing to the overall morbidity of females in all ages of their life.[4]

The adolescent girls are at high risk of developing urinary tract infections because of the anatomical proximity of urethra to the rectum and short urethral length in females as compared to the males.[5]

A urinary tract infection (UTI) is an infection that affects part of the urinary tract. When it affects the lower urinary tract it is known as a bladder infection(cystitis) and when it affects the upper urinary tract it is known as kidney infection (pyelonephritis).According to the National Institute of Health and Clinical Excellence guidelines urinary tract infection is defined by a combination of clinical symptoms of urinary tract infection that usually include frequency, dysuria, pyuria, abdominal pain, back pain, fever, or urgency.[6] Most urinary tract infections result from ascending infection by single gram negative bacteria such as Escherichia coli, Klebsiella, Proteus, Enterobacteria, or Pseudomonas. Staphylococcal infections, especially due to staphylococcal saprophyticus are common cause of urinary tract infection among adolescent girls. The two broad categories of urinary tract infection are pyelonephritis or upper urinary tract infection and cystitis or lower urinary tract infection. Lower urinary tract infections are common among adolescent girls.[7] Urinary tract infection is a bacterial invasion of kidneys and urinary tract. It is designated as pyelonephritis or upper urinary tract infection. When the infection involves mainly renal parenchyma. Lower urinary tract infection involves infection of urinary bladder and urethra.[8]

In young children urinary tract infection symptoms may include diarrhoea, loss of appetite, nausea and vomiting, fever and excessive crying.[8] This infection in the urinary tract will produce the signs and symptoms like, fever, dysuria, urgency, and pubic pressure or discomfort, flank pain, chills etc.[9] Lower urinary tract infection is also referred to as a bladder infection. The most common symptoms are burning with urination and having to urinate frequently (or an urge to urinate) in the absence of vaginal discharge and significant pain. These symptoms may vary from mild to severe.[10] and in healthy women last an average of six days. Some pain above the pubic bone or in the lower back may be present. People experiencing an upper urinary tract infection, or pyelonephritis, may experience flank pain, fever, or nausea and vomiting in addition to the classic symptoms of a lower urinary tract infection. Rarely, the urine may appear bloody or contain visible pus in the urine.[11]

The high incidence of lower urinary tract infection among females may result from the shortness of the female urethra (1¼" to 2" [3 to 5 cm]), which predisposes females to infection caused by bacteria from the vagina, perineum, rectum, or a sexual partner. Males are less vulnerable because their urethras are longer (7¼" [18.4 cm]) and because prostatic fluid serves as an antibacterial shield. In females, infection usually ascends from the urethra to the bladder.[12]

Urinary tract infection is predominantly a female disease. From infancy until age of 25 years the frequency of urinary tract infection in girls about 8% with 1/3rd of these infections being asymptomatic. After an initial episode of bacteriuria, approximately 80% of adolescent girls have one or more recurrences; 8% of these recurrences are due to reinjection's rather than relapses of sequestrated deep infections.5-6% of school girls have at least one episode of urinary tract infection between the age of 5 and 18 years, and 20% of school girls with bacteriuria have demonstrated vesico-urethral reflux that leads to urinary tract infection. Adolescent girls the incidence and prevalence of bacteriuria are related to age, dietary pattern, hygienic measures etc.[13]

Incidence of urinary tract infection globally include 34% of adult below 20yr and also 794 per 10,000 adults aged below 20 yrs have at least one occurrence of urinary tract infection.[7] The prevalence of urinary tract infection globally include 1 in 5 women will develop urinary tract infections in their life time.34% of adults below 20 self reported having at least one occurrence of urinary tract infection.53.5% of adults aged 13-19 years who self reported having urinary tract infection .[14]

The incidence of urinary tract infection in India include, India is the second peak commonly occurring infection in adolescent girls. The prevalence of urinary tract infection in India includes, upto 8% of girls in India are getting urinary tract infection during adolescent period and the rates vary from 3-5% and up. In India the higher prevalence of urinary tract infection is in adolescent girls.[15]

II. Research Elaborations
Statement of the problem
   "Evaluate the effectiveness of structured teaching programme on knowledge regarding urinary tract infection [UTI] & its prevention among adolescent girls in selected senior secondary schools at Udaipur, Rajasthan."

III. Objectives
1. To assess the knowledge regarding urinary tract infection [UTI]& its prevention among adolescent girls.
2. To evaluate the effectiveness of structured teaching programme regarding urinary tract infection [UTI] & its prevention among adolescent girls.
3. To findout association between the pretest knowledge scores of adolescent girls regarding urinary tract infection [UTI] & its prevention with selected socio demographic variables.

IV. Hypothesis
- **H$_1$**: There is a significant difference between the pre-test and post-test knowledge score of adolescent girls regarding UTI and its prevention
- **H$_2$**: There is a significant association between pre-test level of knowledge score and selected socio-demographic variables.

V. Material and methods
- **Population -** adolescent girls
- **Sample –** adolescent girls residing at selected senior secondary schools of Udaipur.
- **Sample size-** 140 adolescent girls.
- **Setting-** Aadinath sr. sec. public school, B.N. sr. sec. public school, Mahaveer vidhya mandir sr. sec. school in Udaipur.

The conceptual framework for the study was developed on the bases of modified WHO's system model.

VI. Research design

The research design selected for the present study was a quasi experimental one group pre-test post-test research design.

Group	Pre test	Intervention	Post test
Adolescent girls	O_1	X	O_2
	Knowledge of Adolescent girls	Structured teaching programme regarding urinary tract infection (UTI) & its prevention	Knowledge of Adolescent girls

Table : Quasi experimental one group pre-test post-test research design.

The interpretations of the symbol are as below:

O_1- Administration of pre-test knowledge questionnaire

O_2- Administration of post-test knowledge questionnaire

X- Intervention, (Independent variable) i.e. Structured teaching programme.

Ethical consideration

After obtaining permission from research committee of Geetanjali College of Nursing, prior permission was obtained from the Aadinath Sr.Sec.Public School,b.N. Sr. Sec. Public School, Mahaveer Vidhya Mandir Sr. Sec. School Udaipur, Formal permission was obtained from school principal and school management of Aadinath Sr.Sec.Public School,B.N. Sr. Sec. Public School, Mahaveer Vidhya Mandir Sr. Sec. School Udaipur. (Raj.) India. Consent was taken from each participant who had participated in the study.

Description of the tool

The structured knowledge questionnaire consisted of two parts i.e. Part – I & II.

Part - I: consisted of 10 items on socio- demographic data such as Age in year, class of study, stream of study, area of residence, mother's education, mother's occupation, type of family, family income per month, source of information regarding UTI, any previous history of UTI

Part - II: consisted of 36 knowledge items. Each item was multiple choices in nature with 4 choices.

Scoring

The knowledge of adolescent girls regarding the outcomes of urinary tract infection was scored as follows, one mark for each correct answer and zero marks for incorrect answer. The maximum score was 36, to interpret level of knowledge the score was distributed as follows; Interpretation of knowledge:

Level	Range
Inadequate knowledge	<50 %
Moderate knowledge	51-75 %
Adequate knowledge	>75 %

An answer key was prepared for scoring answer to the structured knowledge questionnaire.

Data collection and data analysis

The data was presented under the following sections

Section-I: Description of socio-demographic variables of the respondents.

Section-II: Distribution of Respondents according pre-test and post-test level of knowledge score.

Section-III: Effectiveness of self instructional module on knowledge regarding urinary tract infection (UTI) & its prevention among adolescent girls.

VII. Result

Table 2: Frequency and Percentage distribution of respondents to their level of knowledge score. N=140

Level of knowledge	Score	Respodents			
		Pre-test		Post-test	
		frequency	Percent (%)	frequency	Percent (%)
Inadequate knowledge	<50%	101	72.14	0	0
Moderately knowledge	51-75%	38	27.14	0	0
Adequate knowledge	>75%	1	0.71	140	100
total		140	100	140	100

Table 2: The result showed that, in pre-test 72.14% of the respondents had inadequate knowledge, 27.14% of the respondents had moderate knowledge and 0.71% of the respondents had adequate knowledge and in post-test 100% of the respondents had adequate knowledge and none of the respondents had moderate

knowledge and none of the respondents had inadequate knowledge regarding urinary tract infection (UTI) & its prevention.
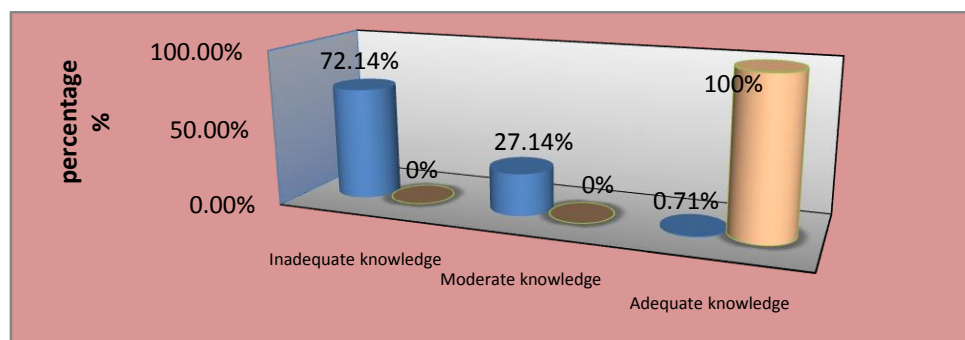

Figure 1: Frequency and Percentage distribution of respondents to their level of knowledge score.

SECTION: III
Effectiveness of structured teaching programme on knowledge regarding urinary tract infection (UTI) & its prevention among adolescent girls.

The 'Z' value was computed to determine the effectiveness of structured teaching programme on knowledge regarding urinary tract infection (UTI) & its prevention among adolescent girls.

The following research hypothesis was stated

H_1: There is a significant difference between the pre test and post test knowledge score among adolescent girls.
H_2: There is significant association between the pre test knowledge score of adolescent girls regarding urinary tract infection (UTI) & its prevention with their selected socio-demographic variables.

Table 3: Area wise pre-test and post-test knowledge score   N=140

Area of knowledge	Max. score	Pre-test			Post-test		
		Mean	Mean%	SD	Mean	Mean%	SD
General information of UTI	7	3.37	9.37	1.53	6.37	17.70	0.73
Introduction, definition and incidence	4	1.87	5.20	1.05	3.68	10.22	0.55
Causes, risk factors and types	5	2.29	6.35	1.11	4.63	12.86	0.64
Sign & symptoms	3	1.78	4.94	0.99	2.75	7.64	0.47
Pathogenesis, diagnosis and treatment	3	0.91	2.54	0.64	2.81	7.80	0.40
Complication and Prevention	14	6.40	17.78	2.33	12.54	36.11	1.10

Table 3: The result showed that the mean, mean percentage and standard deviation of pre-test and post-test knowledge score on different areas of urinary tract infection (UTI) and its prevention.

In the area of General information of UTI, in the pre-test knowledge mean score 3.37 and SD 1.53 in the pre-test experimental group and mean value 6.37 and SD 0.73 in the post-test experimental group. In the area of Introduction, definition and incidence, the mean score 1.87 and SD 1.05 in the pre-test experimental group and mean value 3.68 and SD 0.55 in the post-test experimental group. In the area of Causes, risk factors and types mean score 2.29 and SD 1.11 in pre-test group and mean score 4.63 and SD 0.64 in post-test group. In the area of Sign & symptoms mean score 1.78 and SD 0.99 in pre-test group and mean score 2.75 and SD 0.47. In the area of Pathogenesis, diagnosis and treatment mean score 0.91 and SD 0.64 in the pre-test and mean score 2.81 and SD 0.40 in post-test group. In the area of Complication and Prevention mean score 6.40 and SD 2.33 in pre-test group and mean score 12.54 and SD 1.10 in post-test group. Therefore, the results confirmed that the structured teaching programme was highly effective in improving the knowledge of adolescent girls regarding urinary tract infection (UTI) & its prevention.

Table 4: Effectiveness of structured teaching programme on knowledge regarding urinary tract infection (UTI) and its prevention.   **N=120**

Knowledge assessment	Mean	Mean difference	SD	df	Z value	Inference
Pre-test	16.60	16.17	4.2	139	42.11	**S***
Post-test	32.77		1.3			

Table 4: The result showed that the mean post-test knowledge score (32.77) was higher than the mean pre-test score (16.60). The mean difference score (16.17) of knowledge was significant at 0.05 % level at the "Z" value = 42.11 *P<0.05. Hence research hypothesis H_1 was accepted. This indicates that the structured teaching

programme was effective in increasing the knowledge of adolescent girls regarding urinary tract infection (UTI) & its prevention.

Table 5: association between pre-test knowledge score of respondents with demographic variables.

N=140

S.N	Variables	Chi square	Df	P value	Inference
1	Age in year	7.03	1	3.84	S
2	Class of study	3.49	1	3.84	NS
3	Stream of study	4.70	2	5.99	NS
4	Area of residence	3.60	2	5.99	NS
5	Mother's education	1.43	4	9.49	NS
6	Mother's occupation	7.15	3	7.82	NS
7	Type of family	1.63	1	3.84	NS
8	Family income per month	6.66	3	7.82	NS
9	Source of information regarding UIT	1.41	4	9.49	NS
10	Any previous history of UTI	3.58	1	3.84	NS

Table 5: There is a significant association between pre test knowledge of respondents and demographic variables such as age in year ($\chi2$=7.03), was found to be significant associated with pre-test knowledge score at 0.05 level and Class of study ($\chi2$=3.49), stream of study ($\chi2$=4.70), area of residence ($\chi2$=3.60), mothers education ($\chi2$=1.43), mothers occupation ($\chi2$=7.15), type of family ($\chi2$=1.63) , family income ($\chi2$=6.66), source of information regarding UTI ($\chi2$=1.41), any previous history of UTI ($\chi2$=3.58), were not found to be significant associated with pre-test knowledge score at 0.05. Hence research hypothesis H_2 is proved and accepted.

VIII.   Conclusion
The study aimed at testing the effectiveness of structured teaching programme on knowledge regarding urinary tract infection [UTI] & its prevention among adolescent girls. The results showed that the structured teaching programme was highly effective. So that the urinary tract infection [UTI] can be prevented.

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