



Research Paper

EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING PREVENTION OF URINARY TRACT INFECTION AMONG ADOLESCENT GIRLS

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Effectiveness of structured teaching program on knowledge regarding prevention of urinary tract infection was conducted among 119 adolescent girls (experimental 56 and control 63) using quantitative pre test-post test control group design. Subjects were selected by one stage cluster sampling. Data were collected using structured questionnaire. Results: The study result showed statistically significant difference in gain in knowledge regarding prevention of urinary tract infection in the experimental group who had attended the structured teaching program ($t_{(117)} = 4.973$, $p < 0.001$). Amount of water intake per day, voiding habits and hygienic practice during menstruation were the main contributing factors identified in the study population. Knowledge was significantly associated with the contributing factors of urinary tract infection like frequency of voiding during school hours ($\chi^2_{(1)} = 12.930$, $p < 0.05$), voiding in unclean toilet ($\chi^2_{(1)} = 12.296$, $p < 0.05$), taking bath during menstruation ($\chi^2_{(1)} = 5.761$, $p < 0.05$) and cleaning genitalia during menstruation ($\chi^2_{(1)} = 4.145$, $p < 0.05$).

Keywords: Structured teaching program, Knowledge, Urinary tract infection, Adolescent girls

INTRODUCTION

Urinary Tract Infection (UTI) is a common disease affecting all age groups from new born to old age. Acute uncomplicated UTI is more prevalent among adolescent girls and is the fourth main reason for out-patient visit among this group. It is estimated that 150 million UTIs occur yearly on a global basis, resulting in more than six billion

dollars in direct health care expenditures. The infection in the urinary tract will produce the signs and symptoms like, fever, dysuria, urgency and suprapubic pressure or discomfort, flank pain, chills, etc.

In India, the National Family Health Survey 2000 reported the prevalence of urinary tract infection among adolescent girls (10-19 years) as 16.6%

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and the risk of bacteraemia developing in adolescent girls as 5-10%. Common risk factors for adolescent UTI are poor hygiene, dysfunctional voiding patterns, use of synthetic underwear and panty hose, tight jeans, wet bathing suits, allergens/irritants, famine hygiene sprays, bubble baths, perfumed toilet paper, sanitary napkins and soaps may aid in the development of cystitis. Lack of adequate knowledge and practices related to maintenances of health leads to various genitourinary infections during adolescence. Thus, it is very essential to initiate health intervention measures for the prevention and control of UTI among adolescents.

MATERIALS AND METHODS

The present study was carried out among adolescent girls aged between 13-15 years studying in VIII and IX standard of two selected higher secondary schools of Ernakulam district of Kerala, in India. Quantitative approach using pretest-post-test control group design was adopted. Study was conducted among 119 students (experimental 56 and control 63) who were selected by one stage cluster sampling. Data were collected using structured questionnaire. Tools were administered on the first day. Followed by the pretest, structured teaching program was administered to the subjects on the same day. After a period of one week, i.e., on 7th day knowledge of the students was assessed in the experimental group. The data collection was done in the similar manner in the control group except the administration of the structured teaching program.

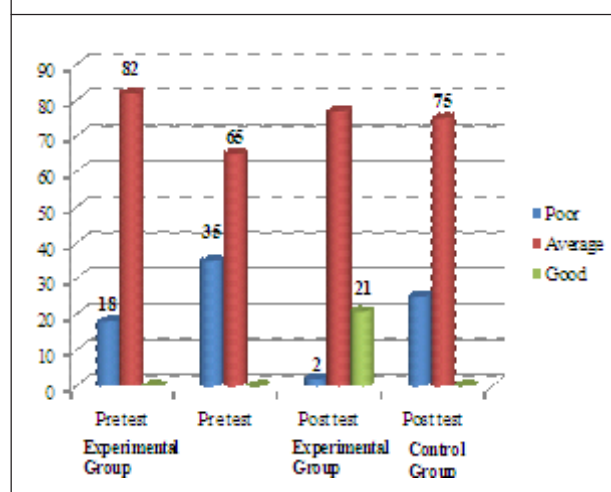
RESULTS AND DISCUSSION

Description of Knowledge Level

The data presented in Figure 1 regarding knowledge level of subjects before the

administration of the structured teaching program indicate that in the in the pre-test phase, majority of the subjects (experimental 82% and control group 65%) have average knowledge. None of the subjects either in the experimental and control group have good knowledge in the pre-test phase, but in the post test 21% of subjects in the experimental group have good knowledge. Similarly, there is a significant reduction in the percentage of subjects with poor knowledge level after the structured teaching program, i.e., in experimental group it significantly reduced from 18% to 2% and in the control group from 35% to 25%.

Figure 1: Clustered Cylindrical Diagram Showing The Pre-test and Post-test Knowledge Level Of Experimental and Control Group



Effect of Structured Teaching Program

Data presented in Table 1 regarding the effectiveness of structured teaching program between experimental and control group indicate a statistically significant difference in gain in knowledge between the experimental and control group $t_{(117)}=4.973, p<0.05$, indicating that the students who had undergone structured teaching program have gained significant knowledge than the control group.

Table 1: Comparison of the Effect of Structured Teaching Program Between Experimental and Control Group

n=119

Group	Mean Difference Mean Difference	Difference of	S D	t value	p value
Experimental*	4.73		3.311		
		4.25		4.973***	0.001
Control*@	0.48		2.010		

Note: *n=56, *@n=63, $t_{(117)} = 1.9805$ $p < 0.05$; *** significant at 0.001

Description of Contributing Factors of Urinary Tract Infection

Data in Table 2 regarding the contributing factors

of UTI among the subjects shows that amount of water intake in a day (i.e., 85.66% drink only 2-8 glasses per day), voiding habits (i.e., 63% void

Table 2: Frequency and Percentage Distribution of the Subjects Based on Contributing Factors of Urinary Tract Infection

n=119

Contributing Factors	Experimental Group (n=56)		Control Group (n=63)		Total	
	f	%	f	%	f	%
1) Consumption of water intake in a day						
a) 2-4 glassess	13	23	16	26	29	24.36
b) 4-6 glassess	17	30	19	30	36	30.21
c) 6-8 glassess	20	36	17	27	37	31.09
d) 8-10 glassess	6	11	11	17	17	14.28
2) Voiding during school hours						
a) >3 times	4	7.14	3	5	7	6
b) 2-3 times	11	19.64	13	20	24	20
c) Once	36	64.29	39	62	75	63
d) Never void	5	8.93	8	13	13	11
3) Condition of changing sanitary napkin						
a) Whenever the pad is soaked	38	67.86	36	57	74	62
b) After urination and defecation	7	12.5	9	14	16	14
c) Before going to bed an early in the morning	11	19.64	12	19	23	19
d) Only once while taking bath	0	0	6	10	6	5
4) Drying the cloth						
a) Inside the room	5	17.2	2	6	7	12
b) Under the sun	24	82.8	29	94	53	88
c) Under another cloth	0	0	0	0	0	0
d) Others	0	0	0	0	0	0

only once during school hours and 11% never void at all during class hours), hygienic practices during menstruation where majority (62%) change the sanitary pad only when it is soaked and 12% dry their menstrual cloth inside the room.

Association of Knowledge Level With Selected Variables

Association Between Pre-test Knowledge Level and Contributing Factors

Data presented in Table 3 regarding association between knowledge level and contributing factors of urinary tract infection show that the knowledge level is significantly associated with frequency of voiding during school hours ($\chi^2_{(1)} = 12.930$, $p < 0.05$), voiding in unclean toilet ($\chi^2_{(1)} = 12.296$, $p < 0.05$), taking bath during menstruation ($\chi^2_{(1)} = 5.761$, $p < 0.05$) and cleaning genitalia during menstruation ($\chi^2_{(1)} = 4.145$, $p < 0.05$).

Major Findings of the Study were

1. Subjects in the experimental group who had undergone structured teaching programs showed statistically significant improvement in knowledge on urinary tract infection and its prevention. ($t_{(117)} = 4.973$, $p < 0.05$), indicating that the structured teaching program was effective in improving the knowledge of the adolescent girls.
2. Majority (72.66%) of the subjects (experimental 82% and control group 77%) had average knowledge and none either in the experimental or control group had good knowledge in the pre-test where as in the post-test, there were 21% subjects in the experimental group who had good knowledge but none in the control group had acquired good knowledge in post-test.

Table 3: Chi-square Value Computed Between Pre-test Knowledge Level and Contributing Factors

n=119

Contributing Factors	Knowledge Level		χ^2	df	p-Value
	Average	Poor			
1) Frequency of voiding during school hours					
a) Two times and more	19	18	12.930*	1	0.001
b) Less than two times	68	14			
2) Voiding in unclean toilet					
a) Yes	12	14	12.296*	1	0.001
b)	75	18			
3) Taking bath during menstruation					
a) Once a day	9	9	5.761*	1	0.016
b) More than once	78	23			
4) Cleaning genitalia during menstruation					
a) With water	26	16	4.145*	1	0.042
b) With soap and water	61	16			

3. The main contributing factors of urinary tract infection identified among the study subjects include amount of water intake in a day (i.e., 85.66% drink 2-8 glasses per day), voiding habits (i.e., 63% void only once during school hours and 11% never void at all during class hours), hygienic practices during menstruation where majority (62%) change the sanitary pad only when it is soaked and drying of menstrual cloth where 12% dry it inside the room.
4. Knowledge has a statistically significant association with selected contributing factors of urinary tract infection like frequency of voiding during school hours ($\chi^2_{(1)} = 12.930$, $p < 0.05$), taking bath during menstruation ($\chi^2_{(1)} = 5.761$, $p < 0.05$) and cleaning genitalia during menstruation ($\chi^2_{(1)} = 4.145$, $p < 0.05$).

OTHER FINDINGS

1. Majority (95%) of the students were between 13-14 years
2. Almost half (50%) of the subjects had previous information regarding prevention of urinary tract infection and majority (65%) received it from their parents followed by teachers (30%).

DISCUSSION

The primary objective was to evaluate the effectiveness of structured teaching program on knowledge regarding prevention of urinary tract infection among adolescent girls.

In order to evaluate the effectiveness of structured teaching program, a comparison of the mean gain in knowledge between the experimental and control group and a comparison between the pre-test and post-test knowledge within the two group was also done.

The comparison between the group indicated a significant difference between the knowledge $t_{(117)} = 4.973$, $p < 0.05$, indicating that the subject who had undergone the structured teaching program had shown significant improvement in the knowledge on urinary tract infection and its prevention.

Further, comparison between the pre and post-test knowledge within the group indicate that only the experimental group showed statistically significant improvement ($t_{(55)} = 8.950$, $p < 0.05$) and not the control group ($t_{(62)} = 1.120$, $p > 0.05$)

The second objective was to identify the contributing factors of urinary tract infection among adolescent girls.

The contributing factors of urinary tract infection identified among the subjects are amount of water intake in a day, voiding habits, hygienic practices during menstruation and practice of drying menstrual cloth.

The third objective was to find the association between knowledge and selected variables.

In the present study pre-test knowledge was not associated with any of the demographic variables like age of subjects, education of mother, monthly income of family, type of family, place of residence, previous information of UTI and previous history of UTI. But pre-test knowledge was associated with the contributing factors like frequency of voiding during school hours ($\chi^2_{(1)} = 10.908$, $p < 0.05$), taking bath during menstruation ($\chi^2_{(1)} = 7.182$, $p < 0.05$) and cleaning genitalia during menstruation ($\chi^2_{(1)} = 6.398$, $p < 0.05$). That shows poor voiding habits and not following menstrual hygienic practices are associated with poor knowledge and can

predispose the adolescent to urinary tract infection.

CONCLUSION

The study has shown a prompt result in improving the knowledge through the structured teaching program. The study also identified that knowledge of the students were average and that the main contributing factors of urinary tract infection are inadequate intake of water, poor voiding habits, unhygienic practices during menstruation, inadequate personal hygiene and toilet habits. This signifies the need and importance of implementing various teaching programs for adolescent girls on various topics as it would help to improve knowledge and follow healthy practices, through which the children can build up a healthy nation.

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