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AN INTERVENTIONAL STUDY TO EVALUATE THE EFFECTIVENESS OF AN AWARENESS PROGRAM ON KNOWLEDGE AND PREVENTIVE PRACTICES REGARDING URINARY TRACT INFECTION AMONG ADOLESCENT GIRLS IN SELECTED HIGHER SECONDARY SCHOOLS OF DISTRICTS OF PUNJAB.

Ms. Shakshi Sharma[1], Ms. Ramanjeet Kaur[2], Mr. Akhlak Choudhary[3], Ms. Leela Banoo[4], Ms. Farida Banoo[5], Ms. Zarina Banoo[6], Ms. Mehvish Hussain[7], Ms. Rabia Manzoor[8], Mr. Nurul Hassan[9], Ms. Harshita[10], Ms. Mehreena Hafeez[11], Mr. Burhan Mir[12], Ms. Heena Nelofar[13]

[1]Assistant Professor,[2] Nursing Tutor,[3 to 13] Students

Abstract : Urinary tract infections (UTIs) are a common health concern among adolescent girls, often resulting from inadequate knowledge and poor hygienic practices. This interventional study aimed to evaluate the effectiveness of an awareness program on knowledge and preventive practices regarding UTIs among adolescent girls in selected higher secondary schools of districts in Punjab. A pre-experimental one-group pretest–posttest design was adopted. A total of adolescent girls were selected using a convenient sampling technique.

Baseline data were collected using a structured questionnaire assessing knowledge and a checklist evaluating preventive practices related to UTIs. Following the pretest, an awareness program was implemented, focusing on causes, symptoms, risk factors, and preventive measures of UTIs, including personal hygiene and lifestyle modifications. Posttest data were collected after the intervention to assess changes in knowledge and practices.

The findings revealed that the mean posttest knowledge and practice scores were significantly higher than the pretest scores, indicating the effectiveness of the awareness program. A positive correlation was also observed between knowledge and preventive practices. The study concludes that structured educational interventions can significantly improve awareness and promote healthy behaviors among adolescent girls, thereby reducing the risk of UTIs.

Keywords: Urinary tract infection, adolescent girls, awareness program, knowledge, preventive practices, intervention study, school health, Punjab

INTRODUCTION

Adolescent girls constitute a unique and sensitive population group, generally defined as those between the ages of 10 and 19 years. This stage represents a critical period of growth and development marked by profound physical, physiological, psychological, and social changes. During adolescence, girls experience the onset of puberty, hormonal fluctuations, development of secondary sexual characteristics, and the establishment of menstrual cycles. Along with these changes, adolescent girls commonly face several health problems such as anemia, malnutrition, menstrual disorders, fatigue, emotional stress, body image issues, and various hygiene-related infections. Lack of adequate health awareness, limited communication with parents or healthcare professionals, and social inhibitions often prevent adolescent girls from openly discussing health-related concerns, making them more vulnerable to preventable illnesses and infections. (Kaur, R at.al 2019)

PROBLEM STATEMENT An interventional study to evaluate the effectiveness of an awareness program on knowledge and preventive practices regarding urinary tract infection among adolescent girls in selected higher secondary schools of Districts of Punjab.

OBJECTIVES

1. To find out the association between post-test level of knowledge and preventive practices regarding urinary tract infection among adolescent girls with their selected demographic variables in the experimental and control group.
2. To assess the existing level of knowledge and preventive practices regarding urinary tract infection among adolescent girls in the experimental and control group.
3. To evaluate the effectiveness of awareness program on knowledge and preventive practices regarding urinary tract infection among adolescent girls in experimental group.
4. To find out the correlation between post-test level of knowledge and preventive practices regarding urinary tract infection among adolescent girls in the experimental and control group.

DATA ANALYSIS AND INTERPRETATION

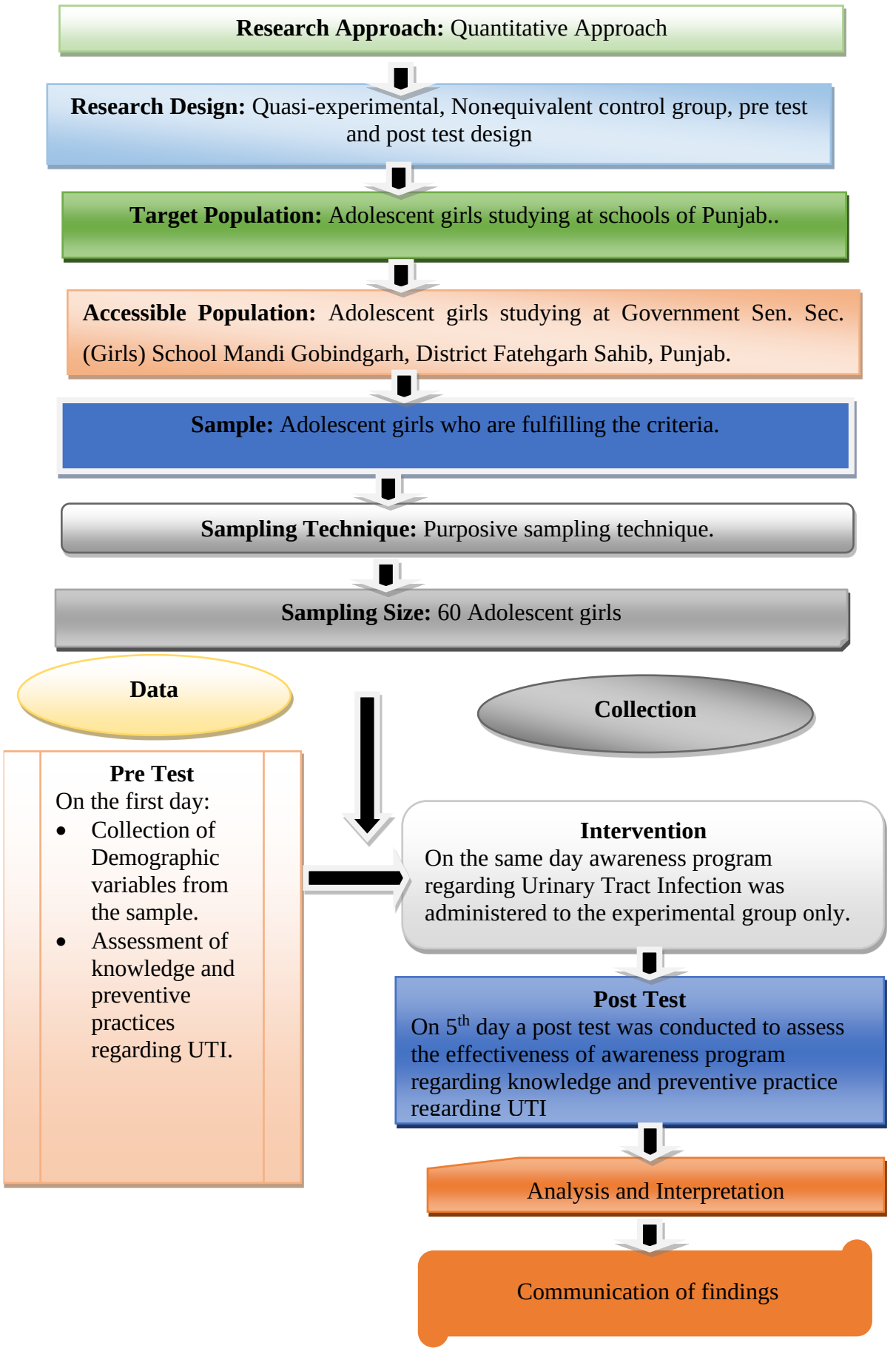
This chapter deals with the analysis and interpretation of the datacollected to assess the effectiveness of the awareness program on knowledge and preventive practices regarding urinary tract infection among adolescent girls.

Kerlinger defines analysis as the categorizing, ordering, manipulating and summarizing of the data to obtain answers to research questions. The purpose of analysis is to reduce data to an intelligible and interpretable form, so that the relations of research problems can be studied and tested.

This chapter deals with the analysis and interpretation of data related to the effectiveness of an awareness program on knowledge and preventive practices regarding urinary tract infection among adolescent girls aged between 10-19 years in selected Government Sen. Sec, School Mandi Gobindgarh, Punjab. Descriptive and inferential statistics were used to analyze the data based on theobjectives of the study. The data has been organized and tabulated as follows:

ORGANIZATION OF DATA:

Section A: Demographic variables of the adolescent girls in the experimental and control group.
Section B: Assessment of knowledge and preventive practices regarding urinary tract infection among adolescent girls inthe experimental and control group.
Section C: Effectiveness of an awareness program on knowledge and preventive practices regarding urinary tract infection among adolescent girls in theexperimental group.
Section D: Correlation between knowledge and preventive practices regarding urinary tract infection among adolescent girls in theexperimental and control group.
Section E: Association between knowledge and preventive practices regarding urinary tract infection among adolescent girls with their selected socio demographic variables.


Research Approach: Quantitative Approach
Research Design: Quasi-experimental, Non-equivalent control group, pre test and post test design
Target Population: Adolescent girls studying at schools of Punjab..
Accessible Population: Adolescent girls studying at Government Sen. Sec. (Girls) School Mandi Gobindgarh, District Fatehgarh Sahib, Punjab.
Sample: Adolescent girls who are fulfilling the criteria.
Sampling Technique: Purposive sampling technique.
Sampling Size: 60 Adolescent girls
Data
Collection
Pre Test
On the first day:
Collection of Demographic variables from the sample.
Assessment of knowledge and preventive practices regarding UTI.
Intervention
On the same day awareness program regarding Urinary Tract Infection was administered to the experimental group only.
Post Test
On 5th day a post test was conducted to assess the effectiveness of awareness program regarding knowledge and preventive practice regarding UTI
Analysis and Interpretation
Communication of findings

SECTION – A

DISTRIBUTION OF SAMPLES ACCORDING TO DEMOGRAPHIC VARIABLES

Table: Percentage distribution of samples according to their demographic variables
n=30+30

Demographic variables	Control group		Experimental group	
	f	%	f	%
1.Age:				
a. 10 - 14 years	5	16.7	6	20
b. 15 -19 years	25	83.3	24	80
2.Educational Status:				
a. Secondary Education	11	36.7	10	33.3
b. Senior Secondary Education	19	63.3	20	66.7
3.Religion:				
a. Hindu	26	86.7	25	83.3
b. Christian	0	0	0	0
c. Muslim	0	0	3	10
d. Others	4	13.3	2	6.7
4.Place of living:				
a. Urban	0	0	0	0
Rural	30	100	30	100
5.Type of family:				
a. Joint family	13	43.3	10	33.3
b. Nuclear family	17	56.7	20	66.7
c. Extended family	0	0	0	0
6.Education of parents:				
a. Primary	13	43.3	10	33.3
b. Secondary	17	56.7	12	40
c. Graduate	0	0	0	0
No formal education	0	0	8	26.7
7.Occupation of parents:				
a. Coolie	26	86.7	26	86.7
b. Private employee	2	6.7	0	0
c. Government employee	1	3.3	1	3.3
Self employed	1	3.3	3	10
8.Previous source of knowledge:				
a. Mass media	1	3.3	0	0
b. Family members and friends	11	36.7	10	33.3
c. Books	3	10	7	23.3
Others	15	50	13	43.4

SECTION-B

ASSESSMENT OF KNOWLEDGE & PREVENTIVE PRACTICE REGARDING URINARY TRACT INFECTION IN EXPERIMENTAL & CONTROL GROUP

Table: 2.1 Assessment of pre-test & post-test knowledge score in experimental & control group n=30+30

Level of knowledge	Control group				Experimental group			
	Pre test		Post test		Pre test		Post test	
	f	%	f	%	f	%	f	%
Inadequate Knowledge	28	93.3	29	96.7	26	86.7	1	3.3
Moderate Knowledge	2	6.7	1	3.3	4	13.3	9	30
Adequate Knowledge	0	0	0	0	0	0	20	66.7

The above table shows that in experimental group the pre test level of knowledge 26(86.7%) had inadequate knowledge, 4(13.3%) had moderately adequate knowledge and 0(0%) had adequate knowledge. Whereas in post-test level of knowledge 1(3.3%) had inadequate knowledge, 9(30%) had moderately adequateknowledge and 20(66.7%) had adequate knowledge.

In control group, the pre test level of knowledge 28(93.3%) had inadequate knowledge, 2(6.7%) had moderately adequate knowledge and 0(0%) had adequate knowledge. Whereas in post test level of knowledge 29(96.7%) had inadequate knowledge, 1(3.3%) had moderately adequate knowledge and 0(0%) had adequate knowledge.

The findings reveal that the effectiveness of an awareness program on knowledge and preventive practices regarding urinary tract infection among the adolescent girls in theexperimental group

Table: 2.2 Assessment of pre-test & post test level of preventive practice in experimental & control group

Level of preventive practices	Control group				Experimental group			
	Pre test		Post test		Pre test		Post test	
	f	%	f	%	f	%	f	%
Unfavourable	5	16.7	5	16.7	2	6.7	0	0
Moderately	24	80	25	83.3	27	90	11	36.7
Highly Favourable	1	3.3	0	0	1	3.3	19	63.3

The above table shows that in experimental group, the pre test preventive practices 2(6.7%) had unfavourable, 27(90%) had moderately favourable and 1(3.3%) had highlyfavourable. Whereas in the post-test preventive practices 0(0%) had unfavourable, 11(36.7%) had moderately favourable and 19(63.3%) highly favourable.

In control group, the pre- test of preventive practices 5(16.7%) had unfavourable,24(80%) had moderately favourable and 1(3.3%) had highly favourable. Whereas in the post test preventive practices 5(16.7%) had unfavourable, 25(83.3%) had moderately favourable, and 0(0%) had highly favourable.

The findings reveal that the effectiveness of an awareness program on knowledge and preventive practices regarding urinary tract infection among adolescent girls in the experimental group

SECTION-C

EFFECTIVENESS OF AN AWARENESS PROGRAM ON KNOWLEDGE AND PREVENTIVE PRACTICES REGARDING URINARY TRACT INFECTION AMONG ADOLESCENT GIRLS IN THE EXPERIMENTAL GROUP.

Table: 3.1 Comparison of pre-test & post-test level of knowledge regarding urinary tract infection in experimental group n= 30

Area	Experimental Pre test		Experimental Post test		Mean difference	't' value	P value
	Mean	SD	Mean	SD			
Overall knowledge	7.27	2.29	16.30	2.93	9.03	13.797	P < 0.001*

*-P<0.05,significant and **-P<0.01 &***-P<0.001,highly significant.

The above table shows that the experimental group calculated 't' test value for overall knowledge was 13.797, which was highly significant at P<0.0001 level.

It can be concluded that awareness program on knowledge and preventive practices regarding urinary tract infection was effective in improving the knowledge among the adolescent girls in experimental group. Hence the stated hypothesis (H1) was accepted.

Table: 3.2 Comparison of pre-test & post-test level of knowledge regarding urinary tract infection in control group n= 30

Area	Control Pre test		Control Post test		Mean difference	't' value	P value
	Mean	SD	Mean	SD			
Overall knowledge	7.03	2.08	7.30	2.02	0.27	1.975	0.058, NS

*-P<0.05,significant and **-P<0.01 &***-P<0.001,highly significant.

The above table shows that the control group calculated 't' test value for overall knowledge was 1.975, which not significant at P<0.0001 level. It can be concluded that there is no much difference in pre-test and post-test in the control group.

Table: 3.3 paired "t"-test of pre and post-test preventive practices regarding regarding urinary tract infection among adolescent girls in experimental group.
n= 30

Area	**Experimental Pre test**		**Experimental Post test**		**Mean difference**	**'t' value**	**P value**
	Mean	**SD**	**Mean**	**SD**			
Overall preventive practices	36.83	4.36	48.43	5.73	11.60	8.441	P<0.001*

*-P<0.05, significant and **-P<0.01 &***-P<0.001, highly significant

The above table shows that the experimental group calculated 't' value for overall 8.441, which was highly significant at P<0.0001 level.

It can be concluded that an awareness program regarding urinary tract infection was effective in improving preventive practices of adolescent girls on urinary tract infection in the experimental group.

Table: 3.4 **Comparison of pre-test & post-test level of preventive practice regarding urinary tract infection in experimental group**
n= 30

Area	**Control Pre test**		**Control Post test**		**Mean difference**	**'t' value**	**P value**
	Mean	**SD**	**Mean**	**SD**			
Overall preventive practices	35.73	5.32	36.53	5.97	0.8	1.861	0.073 NS

*-P<0.05, significant and **-P<0.01 &***-P<0.001, highly significant.

The above table shows that the control group calculated 't' value was 1.861, which was not significant at P<0.0001 level. It can be concluded that there is no much difference in pre-test and post-test in control group.

Table: 3.5 **Comparison of pre-test & post-test level of preventive practice regarding urinary tract infection in control group**
n=30+30

Area	**Control Post test**		**Experimental Post test**		**Mean difference**	**'t' value**	**P value**
	Mean	**SD**	**Mean**	**SD**			
Overall knowledge	7.30	2.02	16.30	2.93	9	13.865	P<0.001 *

*-P<0.05, significant and **-P<0.01 &***-P<0.001, highly significant.

The above table shows that the calculated 't' test value for overall knowledge was 13.865, which was highly significant at P<0.0001 level.

It can be concluded that the awareness program on knowledge and preventive practices regarding urinary tract infection was effective in improving knowledge of adolescent girls on urinary tract infection in the experimental group. Hence the stated hypothesis (H2) was accepted.

SECTION - D

ASSOCIATION BETWEEN KNOWLEDGE AND PREVENTIVE PRACTICES REGARDING URINARY TRACT INFECTION AMONG ADOLESCENT GIRLS WITH THEIR SELECTED SOCIO DEMOGRAPHIC VARIABLES.

Table: 4.1 correlations between the level of knowledge and preventive practices regarding urinary tract infection in the experimental group and control group.

Variables	Control group				Experimental group			
	Pre test		Post test		Pre test		Post test	
	'r' value	p- value	'r' value	p- value	'r' value	p- value	'r' value	p-value
Knowledge and preventive practices	-0.069	0.718 NS	-0.070	0.712 NS	0.935	0.001	0.919	0.001

*p<0.05 significant. **p<0.01 & ***p<0.001 highly significant

The correlation co-efficient value of knowledge and attitude of adolescent girls in the post-test was 0.919 which was positively correlated. It is inferred that there was a positive relationship between the knowledge and preventive practices regarding urinary tract infection in the experimental group.
The correlation co-efficient value of knowledge and attitude of adolescent girls in the post-test was –0.070 which was negatively correlated. It is inferred that there was no positive relationship between the knowledge and preventive practices regarding urinary tract infection in the control group. Hence the stated hypothesis (H3) was accepted.

SECTION- E

ASSOCIATION BETWEEN KNOWLEDGE AND PREVENTIVE PRACTICES REGARDING URINARY TRACT INFECTION AMONG ADOLESCENT GIRLS WITH THEIR SELECTED SOCIO DEMOGRAPHIC VARIABLES.

Table: 5.1 Association between post-test level of knowledge regarding urinary tract infection of $\chi 2$value in control group.

Demographic Variables	Inadequate knowledge		Moderate Knowledge		$\chi 2$ value(df)	p-value (N/NS)
	f	%	f	%		
1.Age						
a. 10-14 years	5	16.7	0	0	0.207, df=1	0.649, NS
b. 15- 19 years	24	80	1	3.3		
2.Educational Status						
a. Secondary Education	11	36.7	0	0	0.599, df=1	0.439, NS

b. Senior Secondary Education	18	60	1	3.3		
3.Religion						
a. Hindu	25	83.3	1	3.3		
b. Christian	0	0	0	0	0.159, df=1	0.690, NS
c. Muslim	0	0	0	0		
d. Others	4	13.3	0	0		
4 Residence						
a. Urban	0	0	0	0	0	1 NS-
Rural	29	96.7	1	3.3	df=1	
5.Type of family						
a. Joint family	13	43.3	0	0		
b. Nuclearfamily	16	53.3	1	3.3	0.791, df=1	0.374, NS
c. Extendedfamily	0	0	0	0		
6.Education of parents						
a. Primary	13	43.3	0	0		
b. Secondary	16	53.3	1	3.3		0.374, NS
c. Graduate	0	0	0	0		
d. No formal education	0	0	0	0		
7.Occupation of parents						
a. Coolie	26	86.7	0	0		
b. Private employee	2	6.7	0	0		0.001*
c. Government employee	0	0	1	3.3		
d. Self employed	1	3.3	0	0		
8.Previous source of knowledge						
a. Mass media	1	3.3	0	0		
b. Family members and friends	11	36.7	0	0		
c. Books	2	6.7	1	3.3		0.025*
d. Others	15	50	0	0		

The above table shows that in control group the obtained $\chi 2$ values computed that there was a significant association between occupation of parents and previous source of knowledge.

There was no significant association between the level of knowledge regarding urinary tract infection and their demographic variables such as age, educational status, religion, type of family, birth order, education of parents, place of living.

Hence the stated hypothesis (H4) was rejected.

Table: 5.2: Association between post test and frequency level of knowledgeregarding urinary tract infection of χ2 value in experimental group.

Demographic Variables	Inadequate		Moderate		Adequate		χ2 value (df)	p-value (N/NS)
	f	%	f	%	f	%		
1.Age								
a. 10-14 years	0	0	1	3.3	5	16.7	1.007,	0.604, NS
b. 15-19 years	1	3.3	8	26.7	15	50	df=2	
2.Educational Status								
a. Seconday Education	1	3.3	2	6.7	7	23.3	2.525, df=2	0.283, NS
b. Senior Secondary Education	0	0	7	23.3	13	43.3		
3.Religion								
a. Hindu	0	0	8	26.7	17	56.7		
b. Christian	0	0	0	0	0	0	17.040,	0.002*
c. Muslim	0	0	0	0	3	10	df=4	
d. Others	1	3.3	1	3.3	0	0		
9.Place of living								
a. Urban	0	0.0	0	0.0	0	0.0	0	1
Rural	1	3.3	9	30.0	20	66.7	df=1	NS
4.Type of family								
a. Joint family	1	3.3	2	6.7	7	23.3		
b. Nuclearfamily	0	0	7	23.3	13	43.3	2.525, df=2	0.283, NS
c. Extendedfamily	0	0	0	0	0	0		
6.Education of parents								
a. Primary								
b. Secondary	**0**	**0**	**3**	**10**	**7**	**23.3**	2.899,	0.575, NS
c. Graduate	**0**	**0**	**4**	**13.3**	**8**	**26.7**	df=4	
d. No formal	**0**	**0**	**0**	**0**	**0**	**0**		
education	**1**	**3.3**	**2**	**6.7**	**5**	**16.7**		
7.Occupation of parents								
a. Coolie								

b. Private employee	**0**	**0**	**9**	**30**	**17**	**56.7**	10.558, df=4	0.032*
c. Government employee	**0**	**0**	**0**	**0**	**0**	**0**		
d. Self employed	**0**	**0**	**0**	**0**	**1**	**3.3**		
	1	**3.3**	**0**	**0**	**2**	**6.7**		
8.Previous source of knowledge								
a. Mass media								
b. Family members and friends	**0**	**0**	**0**	**0**	**5**	**16.7**	4.217, df=4	0.377, NS
c. Books	**0**	**0**	**5**	**16.7**	**0**	**0**		
d. Others	**0**	**0**	**2**	**6.7**	**5**	**16.7**		
	1	**3.3**	**2**	**6.7**	**10**	**33.3**		

The above table shows that in experimental group the obtained $\chi 2$ values computed that there was a significant association between religion and occupation of parents.

There was no significant association between the level of knowledge regardingurinary tract infection and their demographic variables such as age, educational status, religion, type of family, birth order, education of parents, occupation of parents, previous source of information, place of living.

SUMMARY AND CONCLUSION

This chapter deals with the summary and conclusion that are drawn. It focuseson the implication and gives recommendations for nursing practices, nursing research,nursing administration, and nursing education.

CONCLUSION

This study was conducted to evaluate the effectiveness of an awareness program on knowledge and preventive practices regarding urinary tract infection among adolescent girls in selected Government Sen. Sec. School, Mandi Gobindgarh, District Fatehgarh Sahib, Punjab. The findingsrevealed that the effectiveness of an awareness program regarding urinary tract infection among adolescent girls was effective in improving the knowledge and preventive practices of the adolescent girls.

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