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Effectiveness of Planned Teaching Programme on Knowledge Regarding Leucorrhoea among Adolescent Girls (12-18 Years) in Selected Government Schools of Shimla, H.P.

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Abstract: ***Background: Reproductive health is recognized as one of the most significant components of family welfare. Adolescent age is the most important period in reproductive health because the maturity of human reproductive organ happens in this period. Women all over the world at some point in their life experience excessive vaginal discharge. Leucorrhoea results from the mucus secreted from the walls of the cervix and vagina. Leucorrhoea is one of the major burdens of diseases in developing countries including infections caused by any combination of physiologic and pathologic factors. Methods and Material: Non-randomized control group pre- test post- test design was used with sample size 80 selected by convenience sampling technique. Data was collected by self -structured knowledge questionnaires. Planned teaching programme was administered. Results: The result of study finding revealed that in pre-test knowledge of experimental group, none of the subjects scored in the very good range (40%) fell within the good range and majority of subjects, (60%) scored in the fair range. In post-test knowledge of experimental group (62.5%) achieved scores in the very good range the number of subjects with good knowledge scores (37.5%) and none of the subjects in fair knowledge scores. In pre-test knowledge of control group, none of the subjects had very good knowledge scores, (30%), had good knowledge scores and (70%), had fair knowledge scores. In post-test knowledge of control group, none of the subjects scored in the very good range (32.5%) achieved scores in the good range and majority of subjects (67.5%) fell within the fair range. It was found that there is significant improvement in knowledge scores within the experimental group with mean pretest score 10.20 and mean post test score 21.38. There is significant association between the post-knowledge score and demographic variable family income of experimental group and in control group there was significant association between knowledge score and demographic variable educational qualification of mothers. Conclusion: The study concluded that the Planned teaching programme was found effective in improving the knowledge score regarding Leucorrhoea among adolescent girls.***

Keywords: Leucorrhoea, Knowledge, effectiveness, Planned teaching programme, Vaginal discharge

1. Introduction

Reproductive health is recognized as one of the most significant components of family welfare. Adolescent age is the most important period in reproductive health because the maturity of human reproductive organ happens in this period.[1]

The term Leucorrhoea denotes a thick, whitish vaginal discharge. It is a natural defence mechanism that the vagina uses to maintain its chemical balance as well as preserve the flexibility of vaginal tissue. Normally the secretion is just enough to lubricate vagina. When the vaginal secretion increases more than normal it causes excoriation & soreness of vulva. If white vaginal discharge is associated with foul smell, it makes embarrassing to the women to get into social gatherings and even in personal affairs. The affected woman needs treatment and counselling regarding the problem. If it is not treated in the initial stages, it may become chronic.[2]

Leucorrhoea is one of the most common issues encountered in gynaecological practice. It is crucial during adolescents aged 14 - 18 years because this period is the initial period of reproductive development and the maturation of reproduction and increased genetic sensitivity to bacteria and germs. Adolescence is when the reproductive organs begin to operate and go through a period of development and maturation. According to the International Centre for Biotechnology Information (2013) adolescent girls aged 15 - 24 years account for 31.8 per cent of leucorrhoea signs and symptoms. Adolescents are more likely to experience vaginal discharge as a result of this. As a result, adolescent girls knowledge, attitudes, and personal hygiene behaviour are critical Leucorrhoea often known as vaginal discharge is a common condition among young women. Adolescents understanding of reproductive health issues serves as a guideline for healthy behaviour. However young women do not have access to all the right and necessary knowledge about reproductive health.[3]

There are many reproductive health issues in female adolescents, but the highest percentage issues belong to Leucorrhoea (25.4%). It was recorded the 9th most common school-age girls health issue in India. Approximately 75% women experience Leucorrhoea in their lives (Syed et al., 2015).[4] Leucorrhoea is still a global problem in spite of many elaborate studies for past decades. Especially very common in developing countries like India where unhygienic conditions are prevalent. It is common problem which affects many women during the reproductive years. Although Leucorrhoea neither causes mortality nor morbidity in susceptible women but this complaint is liable to cause much mental stress, problem of sexual anxiety and even sometimes fear of carcinoma or failure to conceive.[5]

Leucorrhoea occurs in 1-14 % of all the women in the reproductive age group & is responsible for 5-10 million OPD visits per year throughout the world. The prevalence of excessive vaginal discharge in India is estimated to be 30%. [6]

The symptoms may appear at any age as in infancy, in childhood, in the child bearing period, in the menopausal years and during adolescence but it is more common among women in reproductive age group the normal vagina is lined by squamous epithelium.[7]

Leucorrhoea can be confirmed by finding >10 WBC per high-power field under a microscope when examining vaginal fluid.[8]

Leucorrhoea is one of the major burdens of diseases in developing countries including infections caused by any combination of physiologic and pathologic factors.[9] Various communities-based studies in developing countries have revealed the morbidity and general ill health has been endured silently by women due to poor awareness.[10]

A Descriptive study was done to assess the knowledge regarding Leucorrhoea among adolescent girls in Govt. Amt School, Bakshi Nagar Jammu. The sample consisted of 60 adolescent girls' socio-demographic profile a self-structured questionnaire was used to collect the data from subjects. The results revealed that maximum subjects 27(45%) were having poor knowledge followed by 18(30%) were having good/average knowledge 10(16.6%) and 5(8.3%) were having very good and excellent knowledge respectively. Study concluded that there is need to educate the adolescent girls about pathophysiology, causes, prevention and management of Leucorrhoea so as to improve their knowledge and practice and to decrease the rate of infections among them.[11]

2. Methodology

Research Design
In this study non randomized control group pretest post-test design was adopted for the study i.e. to evaluate the effectiveness of Planned Teaching Programme on knowledge regarding Leucorrhoea among adolescent girls (12-18 years)in selected Government schools of Shimla, H.P.

Research Setting
The final study was conducted at Government Model Girls Senior Secondary School Portmore and Government Girls Senior Secondary School, Lakkar Bazar Shimla H.P.

Sample size
The sample size comprised of 80 students. In this, 40 students were selected at Government Model Girls Senior Secondary School Portmore and 40 from Government Girls Senior Secondary School, Lakkar Bazar Shimla which was control group.

Research sampling technique
In the study non- Probability Convenient sampling technique was used to select the subset of population.

Selection and development of tool
Tool was selected on the basis of objectives of the study. Self - Structured Knowledge Questionnaire was used to evaluate the effectiveness of Planned Teaching Programme on knowledge regarding Leucorrhoea among adolescent girls (12-18 years) in selected Government schools of Shimla, H.P. The tool was developed from various sources like textbook, journals and discussion with experts in field of Obstetrics and Gynaecology and Community Health Nursing.

Ethical Considerations
Research approval was approved by research committees prior to the pilot and main study. Permission was sought from ethical committee of S.N.G.N.C., I.G.M.C., Shimla; Principal, Govt. Model Girls Senior Secondary School, Portmore, Shimla; Principal, Govt. Girls Senior Secondary School, Lakkar Bazar, Shimla.

Data Collection Procedure and Analysis
Collection of data was done in two phases i.e. Pretest and post-test. Pretest of control group was conducted on 5/6/2024 and pretest of experimental group was conducted on 10/6/2024 and planned teaching programme was administered on 20/6/2024 to the experimental group. After one week 27/6/2024 post-test was conducted by using the same tool

3. Results

a) Socio-Demographic characteristics
This section describes the sample characteristics of adolescent girls under study. The sample characteristic is described in terms of age in years, religion, place of staying, place of residence, type of family, educational qualification of mother, Family income, Dietary habits, age of menarche, Previous experience with leucorrhoea, Previous knowledge, Source of information. The findings are presented in table 4.1

Table 1: Frequency Distribution of Socio Demographic Variables, N= 80

Socio Demographic Variables		Experimental group (f)	(%)	(f)	Control group (%)
Age in years	12-14 years	17	43	4	10
	15-17 years	**23**	**58**	**31**	**78**
	18 years and above	0	0	5	13
Religion	Hindu	**39**	**98**	**38**	**95**
	Muslim	1	3	2	5
	Christian	0	0	0	0
	Sikh	0	0	0	0
	Any other	0	0	0	0
Place of staying	Hostel	8	20	0	0
	Day scholar	**32**	**80**	**40**	**100**
Place of residence	Urban area	**40**	**100**	**38**	**95**
	Rural area	0	0	2	5
Type of family	Joint family	7	18	14	35

	Nuclear family	**29**	**73**	**22**	**55**
	Extended family	4	10	4	10
Educational qualification of mothers	No formal education	2	5	2	5
	Primary school- middle school	0	0	11	28
	High school	**24**	**60**	**20**	**50**
	Graduate	14	35	6	15
	Post graduate or above	0	0	1	3
Family income	< 20,000	**16**	**40**	**19**	**48**
	Rs 20,001- 30,000	8	20	5	13
	Rs 30,001 and 40,000	9	23	6	15
	Rs 40,001 and above	7	18	10	25
Dietary habits	Vegetarian diet	**31**	**78**	**29**	**73**
	Non vegetarian diet	6	15	10	25
	Eggetarian	3	8	1	3
Age of menarche	10 years	0	0	2	5
	11 years	3	8	4	10
	12 years	**19**	**48**	5	13
	13 years	15	38	**25**	**63**
	14 years	3	8	4	10
Previous experience with leucorrhoea	Yes	3	8	1	3
	No	**37**	**93**	**39**	**98**
Previous knowledge	Yes	1	3	1	3
	No	**39**	**98**	**39**	**98**
Source of information	Mass media	1	3	1	3
	Family members	0	0	0	0
	Friends	0	0	0	0
	Teachers	0	0	0	0
	No information	**39**	**98**	**39**	**98**

b) Findings Related to Assessment of Knowledge Regarding Leucorrhoea among Adolescent Girls

Table 2: Comparison of frequency and percentage distribution of pre-test and post-test knowledge of both groups of knowledge

Criteria Measure of Knowledge Score									
Score Level	Score	Experimental		Control		Experimental		Control	
		(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)
Very Good	21-30	0	0	0	0	25	62.5	0	0
Good	11-20	16	40	12	30	15	37.5	13	32.5
Fair	0-10	24	60	28	70	0	0	27	67.5

Maximum=30
Minimum=0

Table 2 revels that None of the subjects scored within very good range in experimental and control group. Post-intervention, there was a remarkable improvement in the experimental group, with 25 (62.5%) of subjects achieved a very good knowledge score and none of the control group participants achieved a very good knowledge score. 16(40%) of subjects had a good level of knowledge 12(30%) of subjects had a good level of knowledge. Post intervention 15(37.5%) of subjects maintained a good level of knowledge. In control group 13 (32.5%) of subjects maintained a good level of knowledge. A majority, 24(60%) of subjects, had a fair level of knowledge A larger majority, 28(70%) of subjects, had a fair level of knowledge. Post intervention none of the subjects of experimental group remained in the fair knowledge and in control group the majority, 27 (67.5%) of subjects, remained in the fair knowledge category

Table 3: Comparison within the group with paired and Unpaired t-test of knowledge scores, N=80

		KNOWLEDGE SCORE						Paired 't' Test	
		Pretest		Posttest					
Group	N	Mean	SD	Mean	SD	df	t	T	Result
Experimental Group	40	10.20	3.18	21.38	3.01	39	20.06	1.68	P value=<0.001 *
Control Group	40	9.42	3.31	9.53	3.36	39	0.32	1.68	P value=0.748^{NS}
Unpaired 't' Test	df	Control group 78		df	Experimental group 78				
	T	1.665		T	1.665				
	t	1.068		t	16.575				
	Result	pvalue=0.289^{NS}		Result	pvalue=<0.001*				
Maximum = 30		level of significance < 0.05(*)					Minimum = 0		

The data represent that in paired t -test results reveal experimental group pre-test mean was 10.20 (SD = 3.18) in the post-test mean 21.38 (SD = 3.01) in the post-test t value 20.06, $p < 0.001$) and in the control group the pre-test mean was 9.42 (SD = 3.31), and the post-test mean was 9.53 (SD = 3.36) t value 0.323, $p = 0.748$). In unpaired T-test reveals that in experimental group's df 78 t value is 16.575 and table value is 1.665 and in control group df 78 t value 1.068 and table value is 1.665. Hence H_1 accepted and null hypothesis rejected

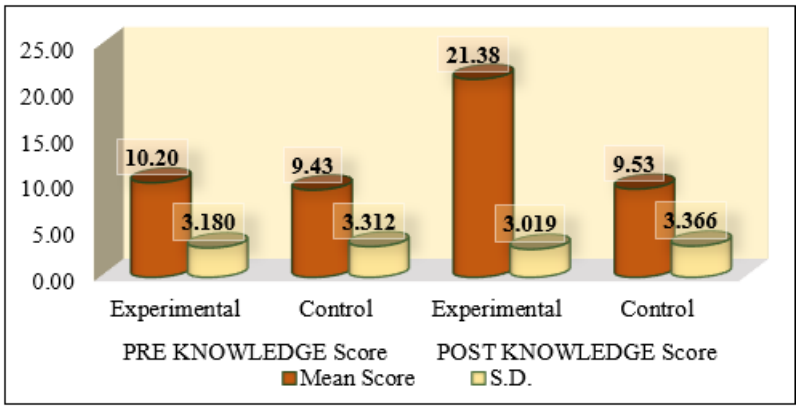

Figure 1: Bar diagram representing comparison Between the Groups level of knowledge representing effectiveness

c) Association of Socio-Demographic Variables

Table 6: Association of post-test knowledge scores and demographic variables in experimental group, **N=80**

Demographic Variables		Association of Post-Test Knowledge Score with Demographic Variables in Experimental Group						
Variables	Socio-demographic variables	Very Good	Good	Fair	χ^2	df	Table Value	p Value
Age in years	12-14 years	8	9	0	3.008	1	3.841	0.083^{NS}
	15-17 years	17	6	0				
	18 years and above	0	0	0				
Religion	Hindu	25	14	0	1.709	1	3.841	0.191^{NS}
	Muslim	0	1	0				
	Christian	0	0	0				
	Sikh	0	0	0				
	Any other	0	0	0				
Place of staying	Hostel	7	1	0	2.667	1	3.841	0.102^{NS}
	Day scholar	18	14	0				
Place of residence	Urban area	25	15	0			N.A	N.A
	Rural area	0	0	0				
Type of family	Joint family	7	0	0	5.131	2	5.991	0.077^{NS}
	Nuclear family	16	13	0				
	Extended family	2	2	0				
Educational qualification of mothers	No formal education	1	1	0	0.787	2	5.991	0.675^{NS}
	Primary school- middle school	0	0	0				
	High school	14	10	0				
	Graduate	10	4	0				
	Post graduate or above	0	0	0				
Family income	< 20,000	11	5	0	**8.868**	**3**	**7.815**	**0.031^{*}**
	Rs 20,001- 30,000	7	1	0				
	Rs 30,001 and 40,000	2	7	0				
	Rs 40,001 and above	5	2	0				
Dietary habits	Vegetarian diet	18	13	0	4.949	2	5.991	0.084^{NS}
	Non vegetarian diet	6	0	0				
	Eggetarian	1	2	0				
Age of menarche	10 years	0	0	0	3.711	3	7.815	0.294^{NS}
	11 years	3	0	0				
	12 years	13	6	0				
	13 years	7	8	0				
	14 years	2	1	0				
Previous experience with leucorrhoea	Yes	2	1	0	0.024	1	3.841	0.877^{NS}
	No	23	14	0				
Previous knowledge	Yes	1	0	0	0.615	1	3.841	0.433^{NS}
	No	24	15	0				
Source of information	Mass media	1	0	0	0.615	1	3.841	0.433^{NS}
	Family members	0	0	0				

	Friends	0	0	0				
	Teachers	0	0	0				
	No information	24	15	0				

Table 4.8 revels that there is significant association with family income the Chi-Square value was 8.868 with a p-value of 0.031 and degree of freedom 3, table value was 7.815. Hence hypothesis H_2 was accepted, and null hypothesis was rejected

4. Discussion

A. The first objective was to assess the knowledge regarding Leucorrhoea among adolescent girls in selected government school of Shimla, Himachal Pradesh.

In the present study pretest level of knowledge reveals that reveals that 60% are in experimental who had fair knowledge 40% are in experimental group who had good knowledge while 0% adolescent girls in experimental group had very good knowledge. In control group 70% had fair knowledge, 30% had good knowledge and 0% had very good knowledge. This indicates that it was necessary for the investigator to improve the knowledge of the adolescent girls by providing specific information regarding Leucorrhoea.

The findings of the study were similar to a study conducted by **Pangambam Shashirani, Zangmu Sherpa Sonam, Thapa Naina, Niroula Archana, Sharma Anusha, Bhutia Ongmu Yashey et al (2019)** conducted a descriptive research aim to assess knowledge regarding Leucorrhoea and its associated factors in reproductive age group of women in selected areas of Sikkim. The study revealed that only 5% samples had good level of knowledge, 57% had average level of knowledge and 38% had poor level of knowledge. Study concluded that there is a need to improve knowledge regarding Leucorrhoea in women.[12]

B. The second objective of the study was to administer Planned teaching programme regarding Leucorrhoea among adolescent girls in selected Government Schools of Shimla, Himachal Pradesh.

After conducting a pretest, it was found that majority of adolescent girls participants had fair knowledge scores. Researchers administered planned teaching programme regarding leucorrhoea among adolescent girls. After the administration of planned teaching programme knowledge was enhanced regarding Leucorrhoea among adolescent girls. In post-test knowledge scores among adolescent girls majority of participants in experimental group 62.5% had very good knowledge score and 37.5% had good knowledge and 0% had fair knowledge score. In control group 67.5% in fair knowledge 32.5% in good knowledge score and 0% in very good knowledge score.

The findings of the study were similar to a study conducted by **Gardia Tripti, Veena, Bhatt Priti (2021)** conducted a pre-experimental with the aim to assess effectiveness of planned teaching programme on knowledge regarding Leucorrhoea and its prevention among B.Sc. nursing students studying in selected nursing college Bhilai, Chhattisgarh. The study findings revealed that pre- test score of the majority of students (30%) had average knowledge score whereas (35%) need for improvement in their knowledge level, post-test majority (100%) had good level of knowledge regarding leucorrhoea. [13]

C. Third objective was to evaluate the effectiveness of planned teaching programme regarding leucorrhoea among adolescent girls

Based on the objective the effectiveness of planned teaching programme was assessed by comparing pre-test post-test knowledge score by using paired t test. In experimental group mean pre-test score 10.20 and mean post-test knowledge scores is 21.38, standard deviation 3.019 with t test value 20.067 was found significant where p value <0.001. The result showed that planned teaching programme was effective to enhance the knowledge regarding leucorrhoea among adolescent girls. Based on the paired t-test the **research hypothesis H_1** i.e. there will be significant difference between mean pre-test and post-test knowledge scores among adolescent girls was accepted

The findings of the study were similar to a study conducted by **Kumari Kavita, Bala Kiran, Thakur Jyoti, Sharma Geetanjali (2021**) conducted a with Quasi experimental with the aim to assess the effectiveness of structured teaching programme on knowledge regarding Leucorrhoea among girls at RKMV (Rajkiaya Kanaya Maha Vidyalaya) College, Shimla, H.P. Result of study analysis both descriptive and inferential statistical methods were used. The pre-test mean score was 17.30. The post-test mean score was 29.74. The difference in mean % was 43.30. The result of post-test depicted that, (27%) students had adequate knowledge, and (73%) had good knowledge and none of the student had poor knowledge. Study concluded that there was significant improvement in the knowledge on the Leucorrhoea. [14]

D. Fourth objective of the study was to find out the association of level of post-test knowledge score regarding Leucorrhoea among adolescent girls with their selected demographic variables

In present study analysis of value shows that there is significant association between the score level and demographic variables (family income per month) in experimental group. There is no significance association between the level of scores and other demographic variables (age, religion, place of staying, place of residence, type of family, education qualification of mother, dietary habits, age of menarche, previous experience with Leucorrhoea, previous knowledge and source of information).

In control group educational qualification of mother was found significant. There is no significance association between the level of scores and other demographic variables (age, religion, place of staying, place of residence, type of family, family income, dietary habits, age of menarche, previous experience with leucorrhoea, previous knowledge and source of information). Hence **research hypothesis H_2** there will be a significant association of post-test knowledge score among adolescent girls with selected socio demographic variables was accepted.

The findings of the study were similar to the study conducted by **Gardia Tripti, Rajput Veena, Bhatt Preeti ,Menon Anil Sindhu Sharda (2021)** conducted a pre-experimental with the aim to assess effectiveness of Planned teaching programme on knowledge regarding Leucorrhoea and its prevention among B.Sc. nursing students studying in selected Nursing College Bhilai which revealed that Chi square analysis shows significant association between period of work in clinical area and source of information of subjects. [15]

5. Conclusion

The study assessed the level knowledge regarding leucorrhoea among adolescent girls. The adolescent girls had inadequate knowledge regarding leucorrhoea prior to administration of planned teaching program. After planned teaching program, there was a significant improvement in adolescent girls' level of knowledge regarding leucorrhoea. In pre-test knowledge of experimental group, none of the subjects scored in the very good range (40%) fell within the good range and majority of subjects, 24 individuals (60%), scored in the fair range. In post-test knowledge of experimental group (62.5%) achieved scores in the very good range the number of subjects with good knowledge scores (37.5%) and none of the subjects in fair knowledge scores.

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