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Dr. Deepika R Kumar
Director Principal, Rayat Bahra College of Nursing, Mohali, Punjab, India

Dr. Ambika F Christopher
Vice Principal, Rayat Bahra College of Nursing, Mohali, Punjab, India

Dr. Harpret Kaur
Professor, Department of Obstetrics in Gynecological Nursing, Rayat Bahra College of Nursing, Mohali, Punjab, India

Harpreet Kaur
B.Sc. Nursing 4th year, Rayat Bahra College of Nursing, Mohali, Punjab, India

Ibraz Javeed
B.Sc. Nursing 4th year, Rayat Bahra College of Nursing, Mohali, Punjab, India

Isha Rani
B.Sc. Nursing 4th year, Rayat Bahra College of Nursing, Mohali, Punjab, India

Jasleen Kaur
B.Sc. Nursing 4th year, Rayat Bahra College of Nursing, Mohali, Punjab, India

Jashandeep Kaur
B.Sc. Nursing 4th year, Rayat Bahra College of Nursing, Mohali, Punjab, India

Zeeshan Maqbool.
B.Sc. Nursing 4th year, Rayat Bahra College of Nursing, Mohali, Punjab, India

Corresponding Author:
Isha Rani
B.Sc. Nursing 4th year, Rayat Bahra College of Nursing, Mohali, Punjab, India

A pre-experimental study to assess the effectiveness of structured teaching programme on knowledge regarding Leucorrhoea among the females residing at selected village of distt. Mohali Punjab

Deepika R Kumar, Ambika F Christopher, Harpret Kaur, Harpreet Kaur, Ibraz Javeed, Isha Rani, Jasleen Kaur, Jashandeep Kaur and Zeeshan Maqbool

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Abstract
Background: Leucorrhea frequently occurs among women of reproductive age and may serve as a warning sign for underlying gynecological problems. If left unaddressed, it can progress to more severe health conditions such as pelvic inflammatory disease or cervical cancer, making prompt attention essential for early detection and treatment. In this light, the present study was conducted to assess the effectiveness of structured teaching programme on knowledge regarding leucorrhea among the females residing at selected village of Distt. Mohali, Punjab.
Aim of the Study: The study aims to improve the knowledge regarding leucorrhea among the females residing at village Daunmajra, Distt. Mohali, Punjab.
Design and Method: A quantitative approach, a pre-experimental, one-group pre-test post-test research design was adopted for the study. The study was conducted on 60 Females between 20 to 40 years of age residing in the village of Daunmajra of Distt. Mohali, Punjab. The investigator adopts a purposive sampling technique to collect the data from the females in the month of March 2025. The collected data were analyzed by using differential inferential statistics methods.
Result: The findings indicated that in the pre-test, the majority of females 45 (75%) had a moderate level of knowledge regarding leucorrhea, and none of them had an adequate level of knowledge. Whereas, in the post-test, it was seen that none of the females had an inadequate level of knowledge regarding leucorrhea. The educational intervention proved successful in enhancing the participants' understanding of leucorrhea. There was no association between pre-test level of knowledge regarding leucorrhea among females with their selected socio-demographic variables.
Conclusion: There was no association between pre-test level of knowledge regarding leucorrhea among females with their selected socio-demographic variables.

Keywords: Leucorrhea, structured teaching programme, females

Introduction
Women's health encompasses unique challenges tied to their reproductive and sexual well-being. Particularly in developing nations, reproductive health issues represent a significant portion of the disease burden affecting females and reproductive system, that include infections caused due to any (or combination) of the three factors: iatrogenic, endogenous, and sexually transmitted. Moreover, as women health condition impact on their physical, mental or social health. Women face disproportion in reproductive health issues that varies based on socio-economic status, education level, age, ethnicity, religions and resources available [1].

The International Conference on Population and Development (ICPD) in Canada defined reproductive health as a state of complete physical, mental, and social well-being in all matters relating to the reproductive system and its functions and processes, rather than just the absence of sickness or illness. Despite being the ICPD's primary focus, reproductive health was left out of the advancement objectives (Joshi *et al*, 2018). Reproductive tract infections are one of the major diseases that are widespread in developing countries, and include infections caused by any (or combination) of the following three factors: iatrogenic, endogenous, and sexually transmitted.

While a range of symptoms define the disease, the most common symptom among women is abnormal vaginal discharge (or leukorrhea) [2].

Leucorrhea refers to a dense, milky or yellow discharge from the vagina, typically associated with hormonal imbalances, especially involving estrogen. This discharge can increase due to infections and may alternate in presence. When persistent, it can become yellow and foul-smelling, usually indicating inflammatory conditions of the vagina or cervix. It can be identified by finding over 10 white blood cells (WBC) in a vaginal fluid sample. Discharge variations may be normal, linked to infections, malignancy, or hormonal changes. Leukorrhea can appear before a girl's first period as a sign of puberty, and it often occurs during pregnancy when it is thin and odorless. While physiological leukorrhea is common in adolescents and newborns, discharge that is yellow or green, has a bad odor, and is accompanied by irritation or pain may indicate infection [3].

Leucorrhea is a thick, whitish vaginal discharge that serves as a natural defense mechanism. It helps maintain the chemical balance of the vagina and preserves the flexibility of vaginal tissue. Leucorrhea is mainly classified into two types: physiological and pathological. Physiological leucorrhea refers to an excessive discharge from a healthy vagina, while pathological leucorrhea results from a disease affecting the female reproductive tract. Symptoms of pathological leucorrhea can include excessive and foul-smelling discharge, pain, lethargy, weakness, vaginal itching, spotting on underwear, rashes or spots on the genitals, painful sexual intercourse, and in some cases, it may be associated with cervical cancer, pelvic inflammatory disease, and infertility [4].

Need of the study

Women's health is considered to be the backbone of society. Reproductive tract infections are one of the major causes of morbidity in women. Women of reproductive age are most likely to get these infections. There are 58,64,69,174 women in India as per the recent census, out of which 48.9% are in the reproductive age group. Hence, there is a growing recognition that morbidity related to the reproductive tract is an important health issue among women in India [6].

The World Health Organization has recommended a syndromic management approach, where women who report abnormal vaginal discharge are treated for some or all of the five common reproductive tract infections: chlamydia trachomatis infection, gonorrhea, and trichomoniasis. These infections can disrupt the normal bacterial flora of the vagina [9].

Problem statement

A pre-experimental study to assess the effectiveness of structured teaching programme on knowledge regarding leucorrhea among the females residing at selected village of Distt. Mohali, Punjab.

Aim of the study

The study aims to improve the knowledge regarding leucorrhea among the females residing at village Daunmajra, Distt. Mohali, Punjab.

Objectives

- To assess the pretest level of knowledge regarding leucorrhea among females.
- To develop and administer the structured teaching programme on knowledge regarding leucorrhea among females.
- To assess the post-test level of knowledge regarding leucorrhea among females.
- To assess the effectiveness of the structured teaching programme on knowledge regarding leucorrhea among females.
- To find out the association between the pre-test level of knowledge regarding leucorrhea among females with their selected socio-demographic variables.

Operational definitions

Assess: It refers to the process of gathering, verifying, and evaluating knowledge regarding leucorrhea among the females residing in the village of Daunmajra, Distt. Mohali, Punjab.

Effectiveness: It refers to the statistical measurement of the difference between pre-test and post-test knowledge scores on leucorrhea among the females after administering a structured teaching programme.

Structured Teaching Programme: It refers to the systematically structured group instructions designed to enhance the knowledge of females regarding leucorrhea. It includes definition, causes, risk factors, clinical features, diagnosis, and management of leucorrhea.

Knowledge: It refers to the ability of the females to give a response to the item in the structured teaching programme questionnaire regarding leucorrhea. Each correct response score one (1) mark and a wrong response scores zero (0) mark.

Leucorrhea: It refers to the flow of a whitish, yellowish, or greenish discharge from the vagina of the female that may be normal or that may be a sign of infection.

Females: It refers to women of 20- 40 years of age residing in village Daunmajra, Distt. Mohali, Punjab.

Hypothesis

H_1: There will be a significant difference between pre-test and post-test knowledge scores regarding leucorrhea among females at 0.05 level of significance.

H_2: There will be an association between the pre-test level of knowledge regarding leucorrhea among females with selected socio-demographic variables at 0.05 level of significance.

Limitations: The study is limited to one destitute home, so findings may not be generalizable to other settings.
Self-reported data may be subject to bias.

Delimitations

The study was delimited to the females

- Between 20 to 40 years
- Village of Daunmajra, Distt. Mohali, Punjab.
- Are all available during the data collection period.
- Are willing to participate in the study.
- Can communicate effectively are included in the study.

Methodology

Research Approach

A quantitative approach was adopted for the study to assess the effectiveness of a structured teaching programme on knowledge regarding leucorrhea among the females residing at selected village of Distt. Mohali, Punjab.

Research Design

A pre-experimental, one-group pre-test post-test research design was chosen for the present study.

Research setting

The study was conducted in the village Daunmajra, Distt. Mohali, Punjab.

Target population

The target population of the study comprised all females between 20 to 40 years of age residing in village Daunmajra, Distt. Mohali, Punjab.

Sample size and sampling technique

60 females between 20 to 40 years of age were taken as samples. A Purposive sampling technique was used to draw the samples.

Inclusion criteria

- Inclusion criteria for the study are:
- Females between 20 to 40 years of age.
- Residing in village Daunmajra, Distt. Mohali, Punjab.
- Willing to participate in the study.
- Able to communicate effectively.

Exclusion criteria

- Females with severe cognitive impairments or mental health conditions that hinder communication.
- Females not permanently residing in village Daunmajra, Distt. Mohali, Punjab.

Selection and development of tool(s)

Section-1: Socio-Demographic Data

This section consists of 09 variables to collect socio-demographic information such as age, religion, educational status, marital status, occupational status, type of family, monthly income, menstrual status and source of information.

Section B: Structured Knowledge Questionnaire on leucorrhea

A Structured Knowledge Questionnaire on leucorrhea to assess the level of knowledge regarding leucorrhea among females consists of 27 items.

Validity of tool

The tool was developed with the help of experts, a guide, and a review of literature, magazines, books, journals, and newspapers. Items were selected as required for the study. The tool was prepared based on the objectives of the study. The first draft was prepared by the investigator with the help of a guide. Validity was done by 9 experts before its application. The second draft was made by a researcher with modifications done by the experts. Reliability of the tool was assessed. Pilot study was done to check the feasibility of the tool. Tool was used for final data collection.

Reliability of tool(s)

Internal consistency of the questionnaire was assessed by split-half method and was calculated by Karl Pearson correlation coefficient (r) formula. The reliability was found to be r=0.74 which was significant.

Pilot study

Pilot study was conducted during the month of February 2025 at the village Sahauran, Distt. Mohali, Punjab to find out the feasibility of the study. The sample chosen was 6 females between 20 to 40 years who are residents of the village Sahauran. The test was conducted through an interview schedule. The findings of the data revealed that the study was feasible.

Ethical consideration

- Written Permission was taken from the ethical committee of the Rayat Bahra College of Nursing, Mohali.
- Written Permission was obtained from the Lambardar of the village Daunmajra, Distt. Mohali, Punjab, for conducting the study.
- Verbal and Written consent was obtained from the study subjects.
- Their routine was not disturbed.
- Confidentiality was maintained throughout the study.

Plan of data analysis

- Coding sheet was prepared for data analysis.
- Data were analysed by using descriptive and inferential statistics.
- Distribution of females according to their socio-demographic variables was computed by chi square test.
- Effectiveness of Planned Teaching programme was evaluated by paired ‘t’ test.
- Association between pre-test level of knowledge score and selected socio-demographic variable found by Chi square test.

Table 1: Distribution of females according to their socio-demographic variables. N=60

Socio-Demographic Variables		Frequency	Percentage
Age	20-25 years	17	28.3%
	26-30 years	30	50.0%
	31-35 years	10	16.7%
	36-40 years	3	5.0%
Religion	Sikh	26	43.3%
	Hindu	18	30.0%
	Muslim	11	18.3%
	Christian	5	8.3%
Marital status	Married	32	53.3%

	Unmarried	28	46.7%
Educational Status	Primary Education	16	26.7%
	Secondary Education	18	30.0%
	Graduation	19	31.7%
	Post-graduation	7	11.7%
Occupational status	Homemaker	7	11.7%
	Private employee	28	46.7%
	Government employee	19	31.7%
	Self employed	6	10.0%
Type of family	Nuclear	28	46.7%
	Joint	32	53.3%
Monthly income of family	Less than 10,000/-	9	15.0%
	10001- 30,000/-	26	43.3%
	30,001- 50,000/-	10	16.7%
	More than 50,001/-	15	25.0%
Menstrual status	Regular	30	50.0%
	Irregular	30	50.0%
Source of information	Family	16	26.7%
	Friends	18	30.0%
	Social media	19	31.7%
	Health personnel	7	11.7%

Table 2a: Pre-test level of knowledge regarding leucorrhea among females. N=60

Knowledge level	Pre-Test			
	F	%	Mean	S.D.
Inadequate knowledge (0-9)	15	(25%)	11.07	2.524
Moderate knowledge (10-18)	45	(75%)		
Adequate knowledge (19-27)	0	(0%)		

Maximum=27, Minimum =0

Table 2 denotes the pre-test level of knowledge score among females. The majority of females 45 (75%) had a moderate level of knowledge regarding leucorrhea. Only 15 (25%) had an inadequate level of knowledge, and none of them had an adequate level of knowledge. The mean score of 11.07 (SD = 2.524) further confirms that a significant knowledge gap existed among the females before the implementation of the Structured Planned Teaching programme, indicating a pressing need for educational support in this area.

Table 2b: Post-test level of knowledge regarding leucorrhea among females. N=60

Knowledge level	Post-Test			
	F	%	Mean	S.D.
Inadequate knowledge (0-9)	03	(5%)	15.02	3.260
Moderate knowledge (10-18)	48	(80%)		
Adequate knowledge (19-27)	09	(15%)		

Maximum=27, Minimum =0

Table 2 denotes that by conducting a post-test in the same group, it was seen that the majority of females, 48 (80%), had a moderate level of knowledge. While 09 (15%) had an adequate level of knowledge and only 3(5%) of them had an inadequate level of knowledge. The mean score of 15.02 (SD = 3.260)

Table 3: Effectiveness of Structured Teaching Programme on leucorrhea among females by Paired 't' test.N= 60

Paired T Test	Mean ±S.D.	Mean%	Mean Diff.	Paired T Test	P value	Table Value at 0.05	Result
Pre-test	11.07±2.524	41	3.950	8.929	<0.001	2.00	Significant
Post-test	15.02±3.26	55.63					

Maximum=27, Minimum =0

Table 3 shows the paired 't' test analysis of pre-test and post-test knowledge scores conducted among females. The mean post-test knowledge score of females regarding leucorrhea was high (15.02±3.26), whereas the mean pre-test knowledge score for the same group was less (11.07±2.524). Calculated paired 't' value was significant (p value < 0.001). Hence, the research hypothesis was accepted. Thus, it can be concluded that the structured teaching programme was an effective intervention in increasing the knowledge level of females regarding leucorrhea.

Table 4: Association between pre-test level of knowledge regarding leucorrhea among females with their socio-demographic variables. N=60

Socio-Demographic Variables		Adequate	Moderate	Inadequate	Chi Test	P Value	df	Table Value	Result
Age	20-25 years	0	12	5	0.821	0.844	3	7.815	Not Significant
	26-30 years	0	24	6					
	31-35 years	0	7	3					
	36-40 years	0	2	1					
Religion	Sikh	0	19	7	1.542	0.673	3	7.815	Not Significant
	Hindu	0	15	3					
	Muslim	0	7	4					
	Christian	0	4	1					
Marital status	Married	0	22	10	1.429	0.232	1	3.841	Not Significant
	Unmarried	0	23	5					
Educational Status	Primary Education	0	12	4	1.422	0.700	3	7.815	Not Significant
	Secondary Education	0	14	4					
	Graduation	0	15	4					
	Post-graduation	0	4	3					
Occupational status	Homemaker	0	5	2	0.287	0.962	3	7.815	Not Significant
	Private employee	0	21	7					
	Government employee	0	14	5					
	Self employed	0	5	1					
Type of family	Nuclear	0	20	8	0.357	0.550	1	3.841	Not Significant
	Joint	0	25	7					
Monthly income of family	Less than 10,000/-	0	4	5	7.519	0.057	3	7.815	Not Significant
	10001- 30,000/-	0	22	4					
	30,001- 50,000/-	0	9	1					
	More than 50,001/-	0	10	5					
Menstrual status	Regular	0	23	7	0.089	0.766	1	3.841	Not Significant
	Irregular	0	22	8					
Source of information	Family	0	15	1	4.875	0.181	3	7.815	Not Significant
	Friends	0	12	6					
	Social media	0	14	5					
	Health personnel	0	4	3					

Table 1: shows association between pre-test level of knowledge regarding leucorrhea among females with their socio-demographic variables such as age, religion, educational status, marital status, occupational status, type of family, monthly income, menstrual status and source of information.

Discussion: This chapter deals with the analysis and interpretation of data collected to assess the effectiveness of a structured teaching programme on knowledge regarding leucorrhea among the females residing at village Daunmajra, Distt. Mohali, Punjab.

This chapter relates the findings of the present study in accordance with the studies done earlier. The findings of the present study have been discussed under the objectives of this study.

Conclusion

From the findings of the present study following conclusions were drawn:

- In the pre-test, the majority of females 45 (75%) had a moderate level of knowledge regarding leucorrhea, and none of them had an adequate level of knowledge.
- In the post-test, it was seen that none of the females had an inadequate level of knowledge regarding leucorrhea.
- The educational intervention proved successful in enhancing the participants' understanding of leucorrhea.
- There was no association between pre-test level of knowledge regarding leucorrhea among females with their selected socio-demographic variables such as age, religion, educational status, marital status, occupational status, type of family, monthly income, menstrual status and source of information.

Recommendations

Based on the results of study, the following recommendations are made:

1. The study can be replicated on large sample to validate and generalize its findings.
2. Similar studies can be conducted in different settings like hospitals.
3. A quasi-experimental study can be conducted to assess the effectiveness of structured teaching program on the knowledge and practices regarding contraceptive methods among the young and middle age females in community.
4. A comparative study can be conducted to assess the knowledge and practices regarding leucorrhea among the females in rural and urban areas.
5. Similar study can be done by using randomization principle.

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