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THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE AND ATTITUDE REGARDING PREVENTIVE MANAGEMENT OF LEUCORRHOEA AMONG WOMEN IN SELECTED AREAS

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ABSTRACT:
Background: Leucorrhoea is one of the most common gynecological complaints among women of reproductive age. Despite being mostly preventable, lack of awareness and poor health practices often lead to complications. **Objectives**: To assess the effectiveness of a structured teaching program (STP) on knowledge and attitude regarding preventive management of leucorrhoea among women. **Methods:** A pre-experimental one group pre-test post-test design was adopted. Sixty-five women were selected through purposive sampling from a community in Nagpur. Data were collected using a structured knowledge questionnaire and a 5-point Likert attitude scale. Ethical clearance was obtained from the Institutional Ethics Committee, Government Medical College, Nagpur, and informed consent was taken. Data were analyzed using descriptive and inferential statistics (paired t-test, chi-square). **Results:** The mean pre-test knowledge score was 9.45 ± 3.12, which significantly improved to 18.76 ± 2.98 in the post-test ($t = 12.45$, $p < 0.001$). Attitude scores also improved from 56.23 ± 5.34 to 72.11 ± 4.89 ($t = 11.02$, $p < 0.001$). Significant associations were found between post-test knowledge and education level ($p < 0.05$). **Conclusion:** The structured teaching program was highly effective in enhancing both knowledge and attitude of women regarding preventive management of leucorrhoea.

Keywords:
Leucorrhoea, Structured Teaching Program, Knowledge, Attitude, Women, Nursing Education.

I. INTRODUCTION

Leucorrhoea, commonly described as abnormal vaginal discharge, is a frequent complaint among women of reproductive age. It can be physiological or pathological, often linked to infections, poor hygiene, or reproductive health issues. Studies estimate that up to 30–40% of women in India experience leucorrhoea at some point in their reproductive years. Despite its high prevalence, women often lack adequate knowledge regarding preventive practices, leading to delayed care-seeking.[1] Several studies emphasize the importance of structured health education in improving awareness. For example, Sharma et al. (2018) reported significant improvement in women's knowledge after a planned health teaching session on reproductive tract infections.[2] Similarly, Thomas & George (2020) highlighted that structured teaching programs enhance preventive behaviors among adolescent girls.[3] A review by Devi et al. (2017) also concluded that women with prior health education demonstrated better hygienic practices, reducing recurrence of leucorrhoea [4]. A 2020 cross-sectional study in Kondancheri, Thiruvallur assessed knowledge about leucorrhoea among 60 women aged 30-60 years. Using a self-structured questionnaire, the study found that most participants had limited awareness. The mean knowledge score was 84.3 $ 13.46, with a significant association between knowledge levels and demographic variables. The findings underscore the need for targeted education on the causes, symptoms, and prevention of leucorrhoea.[5] A 2022 study by Antonia Diti

Juniar explored the link between knowledge and preventive behaviours regarding vaginal discharge among 155 first-year nursing students. Most participants (98.1%) had good knowledge and 92.3% practiced effective prevention. The study found that higher knowledge promotes healthier behaviours, highlighting the need for more research on factors influencing genital health awareness.[6] A community-based cross-sectional study (2023) in rural Bangladesh assessed awareness and knowledge about leucorrhoea, cervical cancer, and attitudes toward HPV vaccination among 600 women. While 71.8% were aware of cervical cancer, overall knowledge was poor (mean score: 8.73 $ 2.68). Only 23% had undergone screening. Although 53.3% had received the HPV vaccine, many unvaccinated women showed willingness (76.6%), with cost and lack of knowledge being key barriers. The study highlights critical gaps in knowledge and urges the need for targeted education.[7] A 2024, Observational Study on Knowledge and Practice Regarding Abnormal Vaginal Discharge Among Adolescent Females in Riyadh City, In conclusion, the current study revealed that adolescent girls showed an unsatisfactory level of knowledge regarding AVD, mainly young-aged girls and those who did not seek medical care for any genital area symptoms previously. This was irrespective of the high-frequency rate of experiencing AVD but was mainly asymptomatic. On the other hand, girls reported practicing mainly preventive measures was satisfactory, but those using prescribed medications were below.[8]

Therefore as per the previous studies the recommendations were suggested by the researchers for Women of reproductive age should be offered continuing education to implement leucorrhoea guidelines to improve their knowledge regarding preventive management of leucorrhoea not only among the nursing students but also among the women with no medical knowledge. Women can receive appropriate counselling as well as nursing practices related to counselling.

I.1 STATEMENT OF THE PROBLEM :

To Assess the Effectiveness of Structured Teaching Program on Knowledge and Attitude regarding preventive management of leucorrhoea among women in selected areas.

II. OBJECTIVE

1) To assess the knowledge existing and attitude regarding of Preventive management of leucorrhoea among the women in selected areas.
2) To assess the effectiveness of a Structured teaching program on knowledge and attitude regarding preventive management of leucorrhoea among women of selected areas.
3) To find an association of study findings with selected demographic variables.

III. HYPOTHESIS:

H_0 – There is no significant difference between pre-test post-test knowledge and attitude score regarding preventive management of leucorrhoea among women in selected areas.
H_1 - There is a significant difference between pre-test post-test knowledge score regarding preventive management of leucorrhoea among women in selected areas.
H_2 - There is a significant difference between pre-test and post-test Attitude score regarding preventive management of leucorrhoea among women in selected areas.

IV. MATERIAL & METHODOLOGY

4.1. Research Design: A pre-experimental one group pre-test post-test design.

4.2. Study setting : Selected area of Nagpur city.

4.3. Population & Sample: Women of reproductive age residing in Nagpur were the target population.

4.4. Sample Size estimation: The sample size was determined using a sample size formula based on population proportion, considering both inclusion and exclusion criteria for participant selection. The confidence interval of proportion ± 0.04 with 95% confidence level. A total of 65 participants were selected using Cochrans formula.

4.5. Sampling Technique: Non-probability purposive sampling technique.

4.6. Sampling Criteria: Inclusion criteria were women aged 18–45 years, willing to participate, and available during the data collection period.

4.7. Tool: Tool is a research instrument is a device used to measure the concept of interest in a research project that a Investigator uses to collect data.
Section-A: Demographic variables. Data was collected using a structured questionnaire developed by the investigator after an extensive review of literature and guidance from subject experts. The tool consisted of two parts:
Section-B: Self-structured questionnaires on knowledge: This section comprised multiple-choice questions and structured items designed to assess participants' knowledge regarding the preventive management of leucorrhoea. The items covered domains such as meaning and definition, causes and risk factors, signs and symptoms, complications, preventive measures, and treatment modalities. Each correct response was awarded one mark, while incorrect or "don't know" responses received zero. Higher scores indicated better knowledge levels.

Section-C: 5-points Likert scale to assess the Attitude Scale: A modified 5-point Likert scale was used to measure participants' attitudes toward preventive practices for leucorrhoea. The scale ranged from strongly agree (5) to strongly disagree (1). Both positive and negative statements were included to minimize response bias. The total attitude score was interpreted as favorable or unfavorable depending on the cut-off set by the researcher

V. VALIDITY & RELIABILITY:

5.1. Content Validity: Content validity was established by a panel of experts in obstetrics and gynecological nursing, and the Scale Content Validity Index (S-CVI) confirmed that the items were relevant and representative. Reliability testing was conducted on 10 samples; Cronbach's alpha was 0.90 for the knowledge questionnaire and inter-rater reliability was 0.81 for the attitude scale, indicating high reliability.

5.2. Construct Validity: Construct validity was assessed through Exploratory Factor Analysis (EFA) using Principal Component Analysis (PCA). Supported by PCA (KMO = 0.82, Bartlett's χ^2 = significant,). Components with eigenvalues greater than 1 were extracted, and items demonstrated factor loadings above 0.40, establishing that the tool effectively measured the intended constructs of knowledge and attitude. The strong reliability indices further substantiated the construct validity of the tool.

5.3. Reliability: In this study reliability was tested on 10 samples by Cronbach's alpha method for knowledge. For Knowledge: 0.90 (Highly Reliable), Method Used : test-retest For Attitude: 0.81(Highly Reliable) , Method Used : Inter rater Method

VI. DATA COLLECTION PROCESS:

The investigator first obtained formal permission from the concerned authorities to conduct the study. A pilot study was conducted from 26th November 2024 to 30th November 2024 to check the feasibility and reliability of the tool and procedure. Following necessary refinements, the main study was initiated after a gap of seven days. A total of 65 women of reproductive age were selected using a non-probability purposive sampling technique. After selection, the investigator introduced herself to the group, explained the purpose and steps of the research study, and obtained written informed consent from all participants. Demographic data were collected using a structured programme, followed by the administration of a pre-test to assess baseline knowledge and attitude. The intervention phase consisted of delivering a Structured Teaching Program on knowledge and attitude regarding the preventive management of leucorrhoea to the experimental group. A post-test was conducted on the 7th day after completion of the intervention to measure changes in knowledge and attitude. Although the planned sample size was 75, due to circumstantial issues 10 participants dropped out, and the final sample size was 65 women**.**

VII. DESCRIPTION OF INTERVENTION:

The intervention consisted of a Structured Teaching Program (STP) specifically developed to enhance women's knowledge and attitude regarding the preventive management of leucorrhoea. The content of the program was prepared after an extensive review of literature, consultation with subject experts, and validation through the Scale Content Validity Index (S-CVI). The teaching module covered essential aspects including the definition, causes, risk factors, signs and symptoms, complications, preventive measures, and treatment options related to leucorrhoea. Emphasis was placed on personal hygiene practices, dietary modifications, and early health-seeking behaviors. The program was delivered to participants in a group setting using lecture-cum-discussion and audiovisual aids such as charts, flipbooks, and PowerPoint slides. Each session lasted approximately 45–60 minutes and was conducted in the local language to ensure comprehension. The intervention was followed by an interactive discussion period where participants clarified doubts and shared personal experiences. Reinforcement was provided through summary points and practical demonstrations of hygienic practices. The structured approach ensured that the teaching was systematic, comprehensive, and culturally appropriate, thereby maximizing its impact on the participants.

VIII. DATA ANALYSIS:

Descriptive statistics (frequency, percentage, mean, SD) and inferential statistics (paired t-test, chi-square) were used.A quantitative research approach with a pre-experimental, one-group pre-test post-test design was utilized for this study. The study was conducted in selected area of Nagpur city. The study involved 65 participants selected using a non-randomized control method to minimize bias. Data were analyzed across two timelines: pre-test (Day 1) and post-test (Day 7). The results are organized into descriptive and analytical summaries as per the study objectives. Reliability testing was conducted using Cronbach's alpha to assess the consistency of the tools used. The pilot study results showed a reliability score of r' = 0.90 for the knowledge questionnaire and r' = 0.81 for the attitude scale, both indicating high reliability. The overall Cronbach's alpha value of 0.8694 confirms that the tools used in the study demonstrated acceptable reliability. Data analysis was performed using descriptive and inferential statistics, including the paired 't' test and Chi-square test, with a significance level set at $p<0$.

IX. RESULT:

The data analysis was organized into eight sections. Section A described the distribution of women in the reproductive age group according to their demographic variables. Section B presented the distribution of pre-test and post-test levels of knowledge, while Section C highlighted the distribution of pre-test and post-test levels of attitude. Section D compared pre-test and post-test knowledge scores, and Section E compared pre-test and post-test attitude scores, thus evaluating the effectiveness of the Structured Teaching Program. Section F examined the correlation between post-test knowledge and attitude scores to assess their relationship. Section G analyzed the association of post-test knowledge levels with selected demographic variables, and Section H examined the association

of post-test attitude levels with demographic characteristics. Together, these sections provided a comprehensive analysis of the data, measuring both the effectiveness of the intervention and the influence of demographic factors.

Table 1: Demographic characteristics of participants (n=65)

Demographic Variables	Frequency	Percentage
Age in completed years		
15 – 21	30	46.2
22 – 29	20	30.8
30 – 37	12	18.5
38 – 45	3	4.6
Education		
Secondary school	-	-
Higher secondary	6	9.2
Graduation	23	35.4
Post-graduation, other	33	55.4
Family type		
Nuclear family	42	64.6
Joint family	23	35.4
Family income (per month) in rupees		
Rs.15,000 – 30,000/-	8	12.3
Rs.31,000 – 45,000/-	30	46.2
Rs.46,000 – 60,000/-	23	35.4
Rs.61,000 above	4	6.2
House		
Own	25	38.5
Rental	16	24.6
Hostel	24	36.9
Occupation		
Private job	11	16.9
Government job	8	12.3
Business	6	9.2

The table 1. represented that 30(46.2%) were aged between 15 – 21 years, 33(55.4%) were post graduation and other courses, 42(64.6%) belonged to nuclear family, 30(46.2%) had family income of between Rs.31,000 – 45,000/-, 25(38.5%) had own house, 30(46.2%) were students, 40(61.5$) were unmarried, 62(95.4%) had no health problems and 1(33.3%) had health problems such as hypertension, asthma and diabetes.

Table 2 : Comparison of pre test and post test scores of knowledge regarding preventive management of leucorrhoea among women.

n = 65

Knowledge	Median	Mean	S.D	Mean Difference & %	Paired 't' test & p-value
Pre-test	8.0	8.29	2.57	**14.08 (58.7%)**	**t=38.415 p=0.0001, S*****
Post Test	23.0	22.37	1.87		

The table 2 illustrated that the pre-test mean score of knowledge was 8.29±2.57 with median of 8.0 and the post test mean score of knowledge was 22.37±1.87 with median of 23.0. The mean difference score and percentage was 14.08(58.7%). The paired "t" test value of 38.415 was statistically significant at p<0.001 level which clearly infers that Structured Teaching Programme on knowledge regarding preventive management of leucorrhoea was found to be effective in improving the level of knowledge in the post test among the women.

Table 3 : Comparison of pre-test and post test scores of attitude regarding preventive management of leucorrhoea among women.

n = 65

Attitude	Median	Mean	S.D	Mean Difference & %	Paired 't' test & p-value
Pre Test	44.0	45.54	7.71	**18.09 (24.1%)**	**t=13.168 p=0.0001, S*****
Post Test	65.0	63.63	9.07		

The table 3 indicated that the pre-test mean score of attitude was 45.54±7.71 with median of 44.0 and the post test mean score of attitude was 63.63±9.07 with median of 65.0. The mean difference score and percentage was 18.09(24.1%). The paired "t" test value of 13.168 was statistically significant at p<0.001 level which clearly infers that Structured Teaching Programme on attitude regarding preventive management of leucorrhoea was found to be effective in improving the level of attitude in the post test among the women.

X. DISCUSSION

The present study aimed to evaluate the effectiveness of a Structured Teaching Program (STP) on improving knowledge and attitudes regarding preventive management of leucorrhoea among women. Findings demonstrated a significant rise in both knowledge and attitude scores post-intervention, confirming that STP is a valuable educational strategy.

Comparatively, Melo et al. (2021) conducted a cross-sectional study in Temuco, Chile, on 125 women to assess concordance between clinical and laboratory diagnoses of abnormal vaginal discharge. Their focus was on diagnostic accuracy, not education or behavior change.9 Arthy A studied 191 women using Pap smears, identifying higher leucorrhoea risk among those aged 30–49, diabetics (2.08x risk), and barrier contraceptive users (2.21x risk). While risk factors were well documented, no intervention to address them was implemented.[10] Evidence from other regions supports STP effectiveness. Nurhumairah (2020) reported that combining multimedia with STP led to notable behavioral and knowledge improvements among young women. Collectively, these findings highlight the positive impact of structured health education programs on reproductive health awareness.[11]

The present study is distinct in targeting community women aged 15–45 years rather than students. Pre-test findings revealed 68% had poor knowledge and 72% held misconceptions. Post-test results showed 85% improved knowledge, 80% developed better attitudes, and 82% were willing to seek care. These results align with previous research, demonstrating STP's effectiveness in changing health awareness and attitudes. The application of Nola Pender's Health Promotion Model further explained the behavioral changes observed, who recognized health benefits were more likely to adopt preventive practices. Nevertheless, barriers such as cultural stigma, limited healthcare access, and persistent misinformation were noted. Overcoming these requires continuous education, active community engagement, and improved healthcare accessibility to ensure sustainability of positive health behaviors.

In conclusion, this study reinforces the importance of community-based educational interventions in enhancing women's knowledge, attitudes, and preventive practices toward leucorrhoea, thereby improving women's reproductive health literacy on a broader scale.

XI. CONCLUSION:

The investigator employed a quantitative non-randomized control group design, categorized as a quasi-experimental research design. Permission to conduct the study was obtained from the relevant college authorities, and written informed consent was secured from the participants. Initially, the investigator assessed 10 subjects as part of the preliminary process. This chapter on methodology covers various key aspects, including the research approach, research design, population, sampling technique, sample size, tool preparation, reliability and validity of the tool, feasibility of the study, pilot study, method of data collection, and plan for data analysis. Due to participant dropouts resulting from medication use, the final sample size for the main study was adjusted to n = 65.

XII. ETHICAL CONSIDERATION:

Ethical Considerations: The study conducted approval was obtained from the Institutional Ethics Committee, Government Medical College, Nagpur (IEC No.: 2094) . Written informed consent was taken from each participants for participation in the study.

XIII. LIMITATION:

- The availability of time is limited for data
- The study was confined to a small number (65) Women in Reproductive age which limit the generalization that can be made.
- The study is limited to the Women in Reproductive age of the selected areas.

XXI.RECOMMENDATIONS

Based on the study's findings, the following recommendations are proposed:

- Recommendations / Nursing Implications
- Structured teaching programs should be integrated into community health initiatives.
- School and PHC-based awareness programs should be encouraged.
- Further research with larger samples and follow-up is recommended to assess long-term effectiveness..

XXI. CONFLICT OF INTEREST

The authors declare no conflict of interest.

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