

Empowering Adolescent Girls: Impact of a Self-Instructional Module on Knowledge of Leucorrhea Prevention and Home Management

Rahul Jha¹, Takhellambam Kiranmala Chanu²

¹MSc Nursing Student, Parul Institute of Nursing, Faculty of Nursing, Parul University, Vadodara, Gujarat, India.,

²Professor & Head, Department of Obstetrics and Gynecological Nursing, Parul Institute of Nursing, Faculty of Nursing, Parul University, Vadodara, Gujarat, India. Email: kiranchanu1@gmail.com

ABSTRACT

Background: Leucorrhea is a thick, whitish or yellowish vaginal discharge, commonly caused by estrogen imbalance. Adolescents are particularly susceptible due to hormonal changes, and lack of awareness regarding prevention and home management can increase the risk of complications. Proper hygiene practices and a nutrition-rich diet can prevent leucorrhea. **Methods:** An evaluative research approach with a quasi-experimental design was adopted. The study was conducted at Parul Institute and Ideas College, Vadodara. A purposive sample of 60 adolescent girls was selected. Knowledge regarding prevention and home management of leucorrhea was assessed before and after implementing a structured instructional module. Data were analyzed using descriptive and inferential statistics, including paired t-test and chi-square test.

Results: In the pre-test, 98.3% of participants had inadequate knowledge, 1.7% had moderate knowledge, and none had adequate knowledge. Post-test findings revealed that 88.3% had adequate knowledge and 11.7% had moderate knowledge, with none demonstrating inadequate knowledge. The pre-test mean knowledge score was 31.1%, which increased to 88.8% in the post-test. The paired t-test showed a statistically significant difference ($p < 0.05$), indicating the effectiveness of the structured instructional module. Knowledge scores were significantly associated with the degree of white discharge ($p < 0.05$).

Conclusion: The structured instructional module was effective in significantly improving adolescent girls' knowledge regarding prevention and home management of leucorrhea. Educational interventions can play a crucial role in promoting adolescent reproductive health.

KEYWORDS: Leucorrhea, Adolescent Girls, Structured Instructional Module, Prevention, management of leucorrhea.

How to Cite: Rahul Jha, Takhellambam Kiranmala Chanu, (2025) Empowering Adolescent Girls: Impact of a Self-Instructional Module on Knowledge of Leucorrhea Prevention and Home Management, Vascular and Endovascular Review, Vol.8, No.7s, 234-238.

INTRODUCTION

Leucorrhoea, commonly referred to as vaginal discharge, is a frequent and often distressing gynaecological complaint among adolescent girls, especially in developing countries. It can be physiological or pathological in origin, with inadequate knowledge about its prevention and home management contributing to increased morbidity and reduced quality of life among those affected ^[1,2]. Studies in India have shown that many adolescent girls possess limited awareness regarding signs, causes, hygiene practices, and when to seek medical care for leucorrhoea ^[3,4]. Health education interventions, including planned teaching programmes and structured teaching, have been effective in improving knowledge about leucorrhoea among adolescent populations ^[5,6].

Self-instructional modules (SIMs) are learner-cantered educational tools that allow individuals to study content independently, often increasing retention and empowering behaviour change ^[7]. Such modules have been successfully used in various reproductive health domains e.g. improving knowledge regarding menstrual disorders, polycystic ovary syndrome, and general reproductive hygiene among adolescent girls ^[8,9]. Despite these successes, there remains a paucity of research evaluating the effectiveness of SIMs specifically for prevention and home management of leucorrhoea in Indian adolescent college students.

The present study aims to fill this gap by evaluating the effectiveness of a self-instructional module on knowledge regarding prevention and home management of leucorrhoea among adolescent girls in selected colleges in Vadodara, Gujarat. Ethical permission was obtained from the Institutional Ethical Committee, and the sample size was determined to be 60 adolescent girls based on prior similar studies ^[6,9]. The findings are expected to inform health educators, nursing professionals, and policy makers in designing targeted interventions to improve adolescent reproductive health.

METHODOLOGY

Research methodology is the systematic way of solving the research problem, ensuring accuracy, reliability, and validity of the study findings. The present study adopted a quantitative evaluative approach with a pre-experimental one-group pretest–posttest design to assess the effectiveness of a self-instructional module (SIM) on knowledge regarding prevention and home management of leucorrhea among adolescent girls. The study was conducted in selected colleges of Vadodara, Gujarat, with a purposive sample of 60 adolescent girls. A structured self-administered knowledge questionnaire was used

as the tool for data collection. The process included a pre-test, administration of SIM, and a post-test after seven days. Data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (paired *t*-test and chi-square test) to evaluate the effectiveness of SIM and its association with demographic variables. Formal permission was obtained from the Institutional Ethical Committee of Parul Institute of Nursing, Vadodara, and informed consent was secured from participants.

RESULT

Distribution of samples based on frequency and percentage of demographic characteristics.

Table No. 1: Distribution of samples based on frequency and percentage of demographic characteristics, N=60

Sl. No.	Demographic variables		frequency	percentage
1	Age in years	15 yrs	01	01.7
		16 yrs	36	60.0
		17 yrs	23	38.3
2	Education	Arts	03	05.0
		Science	18	30.0
		Commerce	39	65.0
3	Family income per month	<2000	08	13.3
		2001-4000	13	21.7
		4001-6000	16	26.7
		>6001	23	38.3
4	Religion	Hindu	56	93.3
		Christian	03	05.0
		Muslims	01	01.7
5	Type of the family	Nuclear	12	20.0
		Joint	45	75.0
		Extended	03	05.0
6	Age at menarche	9-11 yrs	05	08.3
		12-14 yrs	38	63.3
		15-17 yrs	17	28.3
7	Regularity of menstrual cycle	Normal	58	96.7
		Abnormal	02	03.3
8	History of white discharge	Yes	19	31.7
		No	41	68.3
9	If yes, Degree of white discharge	Mild	08	13.3
		Moderate	08	13.3
		Severe	02	03.3
		Not answered	42	70.0
10	Burning sensation and itching in the vaginal area	Yes	08	13.3
		No	52	86.7
11	Source of information	Mass media	07	11.7
		Health personal	06	10.0
		Family members	40	66.7
		Peer group	07	11.7

The majority of participants were 16–17 years old (98.3%), mostly from the commerce stream (65%), and predominantly Hindu (93.3%), belonging to joint families (75%). Most had menarche between 12–14 years (63.3%) and reported normal menstrual cycles (96.7%). About 31.7% had a history of white discharge, with few reporting associated burning or itching (13.3%). The main source of information was family members (66.7%), while very few relied on health personnel (10%).

Table No. 2: Assessment of pre and posttest knowledge regarding prevention and home management of leucorrhea among adolescent girls

N=60					
Knowledge Aspects	Statements	Range	Mean	SD	Mean (%)
Pretest knowledge	36	6-19	11.2	3.649	31.1
Posttest knowledge	36	27-35	31.97	2.336	88.8

The table 2 depicts the comparison of pre-test and post-test knowledge scores regarding prevention and home management of leucorrhea among adolescent girls. In the pre-test, the knowledge scores ranged from 6 to 19, with a mean score of 11.2 ± 3.649 , corresponding to a mean percentage of 31.1%, which indicates inadequate baseline knowledge. After administration of the self-instructional module, the post-test knowledge scores showed a marked improvement, ranging from 27 to 35, with a mean score of 31.97 ± 2.336 , corresponding to a mean percentage of 88.8%, suggesting a substantial gain in knowledge. These results clearly demonstrate the effectiveness of the intervention (SIM) in enhancing the knowledge of adolescent girls regarding the prevention and home management of leucorrhea.

Frequency distribution of samples according to pre and post-test levels of knowledge

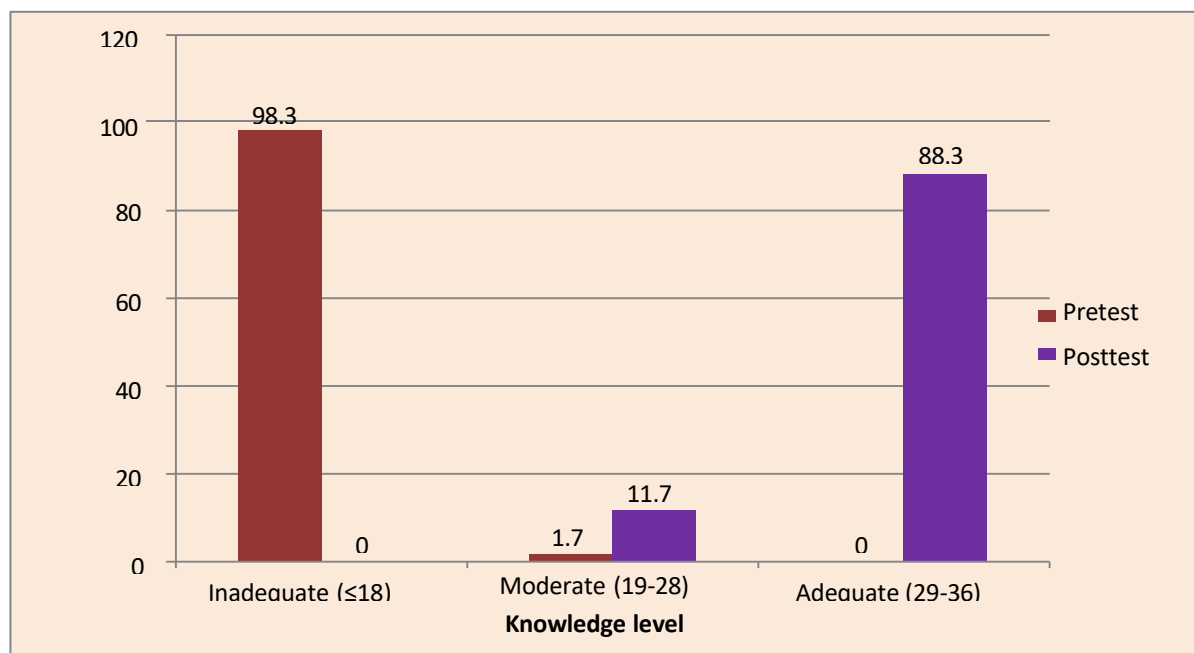


Fig 1: Diagram showing distribution of samples based on their pre-test and post-test knowledge

The diagram presents the distribution of adolescent girls according to their level of knowledge regarding prevention and home management of leucorrhea before and after the intervention. In the pre-test, a vast majority (98.3%) of participants demonstrated inadequate knowledge (≤ 18), while only 1.7% had moderate knowledge, and none achieved the adequate level (29–36). In contrast, the post-test results showed a remarkable improvement, with 88.3% attaining adequate knowledge, 11.7% demonstrating moderate knowledge, and none remaining in the inadequate category.

These findings clearly indicate that the self-instructional module was highly effective in enhancing knowledge, as evidenced by the substantial shift from inadequate to adequate knowledge levels among adolescent girls.

Association between Post-Test Knowledge Scores and Selected Demographic Variables

The association between post-test knowledge scores and selected demographic variables was analyzed using the chi-square test. The findings revealed that most demographic variables, such as age ($\chi^2=2.244$, $p=0.326$), education ($\chi^2=0.862$, $p=0.650$), family income ($\chi^2=0.390$, $p=0.942$), religion ($\chi^2=4.589$, $p=0.101$), type of family ($\chi^2=2.783$, $p=0.249$), age at menarche ($\chi^2=1.747$, $p=0.418$), regularity of menstrual cycle ($\chi^2=0.021$, $p=0.885$), history of white discharge ($\chi^2=0.654$, $p=0.419$), burning sensation and itching ($\chi^2=0.210$, $p=0.647$), and source of information ($\chi^2=6.34$, $p=0.096$) were not statistically significant ($p>0.05$). However, a significant association was observed between degree of white discharge and post-test knowledge scores ($\chi^2=8.50$, $df=2$, $p=0.014$) at the 0.05 level. Thus, the null hypothesis was rejected only for degree of white discharge, while for other variables it was retained.

DISCUSSION

The present study revealed that adolescent girls had poor baseline knowledge regarding prevention and home management of leucorrhoea (mean pre-test score 31.1%) which improved substantially after administration of the self-instructional module (mean post-test score 88.8%). This is in line with previous research, where adolescent girls showed inadequate awareness of reproductive health problems, and structured educational interventions significantly enhanced their knowledge levels^[10]. Roopa and Kurup^[11] reported similar findings in Kalaburagi, where self-instructional modules on reproductive health improved knowledge scores among pre-university girls. Likewise, Elwakeel et al.^[12] demonstrated that instructional modules improved awareness and preventive practices regarding vaginal discharge among adolescent girls. A pre-experimental study also confirmed that planned teaching programmes are effective in increasing adolescent girls' knowledge on leucorrhoea^[13].

In our study, most demographic variables (age, education, family income, religion, family type, age at menarche, menstrual cycle regularity, and history of white discharge, source of information, and burning sensation /itching) were not significantly associated with post-test knowledge scores, indicating that the intervention was effective across subgroups. Similar non-significant associations between sociodemographic factors and post-intervention knowledge have been observed in earlier studies^[14,15]. However, a significant association was found with the degree of white discharge, suggesting that adolescents with more severe symptoms were more attentive or motivated to learn. Studies have shown that adolescents experiencing symptomatic vaginal discharge often demonstrate greater health-seeking behaviours and higher knowledge acquisition^[16,17].

These findings strengthen the evidence that self-instructional modules are cost-effective, learner-centred tools that can bridge gaps in adolescent reproductive health knowledge, regardless of demographic background, while symptom severity may influence motivation for learning.

CONCLUSION

The study demonstrated that adolescent girls had inadequate baseline knowledge regarding the prevention and home management of leucorrhoea. The self-instructional module proved to be highly effective in improving knowledge, as reflected by the significant increase in post-test scores. The findings highlight the importance of structured, learner-centred educational interventions in bridging knowledge gaps among adolescents. Incorporating such modules into adolescent health education programs can empower young girls to adopt preventive practices, manage symptoms effectively at home, and seek timely medical care when needed.

Acknowledgment

The investigator expresses sincere gratitude to the Principal and Management of Parul Institute of Nursing, Vadodara, for granting permission to conduct the study. Special thanks are extended to the faculty members and subject experts who provided valuable guidance during tool development and validation. The author is deeply indebted to the adolescent girls who participated in the study for their cooperation and willingness to share their experiences.

Ethical Considerations

The study was conducted after obtaining formal approval from the Institutional Ethical Committee of Parul Institute of Nursing, Parul University, Vadodara. Written informed consent was obtained from all participants, and confidentiality of their responses was maintained. Participation was voluntary, and respondents were free to withdraw from the study at any stage without prejudice.

Funding Source

The study was **self-funded by the investigator**.

Conflict of Interest

The authors declare no conflict of interest.

REFERENCE

1. Alenizy HK. Knowledge and Practice Regarding Abnormal Vaginal Discharge among Women. *PMC*. 2024.
2. Juniar AD, et al. The relationship between level of knowledge and vaginal discharge among adolescents. *PMC*. 2023.
3. Kaur N, Kapoor J. Perceptions and Knowledge about Leukorrhea in a Slum Dwelling Women. *SemanticsScholar*. Year.
4. Verma V. Effectiveness of Planned Teaching Programme on Knowledge Regarding Leucorrhoea among Adolescent Girls (12-18 Years) in Selected Government Schools of Shimla, H.P. *Int J Sci Res*. 2025;14(5):143-148.
5. Roopa, Kurup S. Effectiveness of Self-Instructional Module on Knowledge Regarding Reproductive Health among Adolescent Girls of Selected Pre University Colleges at Kalaburagi. *Nursing Practice*. 2024;7(2):165.
6. Boku GG, et al. The Effect of School-Linked Module-Based Friendly-Health Education on Adolescents' Sexual and Reproductive Health Knowledge. *PMC*. 2024.

7. Salama AM, Elbana HM. Effect of Self-Instructional Module on awareness of polycystic ovarian syndrome among Adolescent Students. *Am J Nurs Res*. 2019;7(6):1009-1019.
8. Sharma A, et al. A descriptive study to assess the knowledge regarding leucorrhoea among adolescent girls in govt. amt school, Bakshi Nagar Jammu (J&K). *Int J Curr Res Life Sci*. Year.
9. Study on menstrual disorders using SIM among adolescent girls. *IJOGR*. Recent
10. Knowledge, Attitude and Seeking Care Behaviors of Women about Leucorrhea. *ResearchGate*. Year.
11. Kaur J, Kapoor J. Perceptions and knowledge about leukorrhea in women from a North Indian community. *Indian J Community Med*. 2014;39(3):162–5.
12. IJSR. Effectiveness of Planned Teaching Programme on Knowledge Regarding Leucorrhoea among Adolescent Girls. *Int J Sci Res*. 2025;14(5):143–8.
13. Roopa, Kurup S. Effectiveness of Self-Instructional Module on Knowledge Regarding Reproductive Health among Adolescent Girls of Selected Pre-University Colleges at Kalaburagi. *Nursing Practice*. 2024;7(2):165–70.
14. Elwakeel RFM, Zaki N, Hassan N. Effect of an Instructional Module on Knowledge and Preventive Practices Regarding Vulvitis and Related Conditions among Adolescent Girls. *Menoufia Med J*. 2022;35(4):1021–9.
15. A pre-experimental study to assess the effectiveness of structured teaching programme on leucorrhoea among adolescent girls. *Gynaecol Nurs J*. 2025;12(2):55–61.
16. Boku GG, Demssie YN, Gebre M, Abebe H. The Effect of School-Linked Module-Based Friendly-Health Education on Adolescents' Sexual and Reproductive Health Knowledge. *Front Public Health*. 2024; 12:1345678.
17. Rani M, Choudhary S, Gupta P. Evaluating the Effectiveness of Pubertal Preparedness Programmes among Pre-Adolescent Girls. *J Pediatr Adolesc Gynecol*. 2016;29(6):627–32.
18. Anastasya S, Juniar AD, Lestari D. Understanding the Relationship Between Knowledge, Vaginal Hygiene Practices, and Vaginal Discharge in Adolescents. *HealMed J*. 2024;5(2):45–51.
19. Singh A, Arora AK. Knowledge, attitude and practice of adolescent school girls regarding menstrual and reproductive health. *Indian J Med Sci*. 2020;72(1):30–4.
20. Patel V, Pednekar S, Weiss H, Rodrigues M, Barros P, Nayak B, et al. Why do women complain of vaginal discharge? A population survey of infectious and psychosocial risk factors in a South Asian community. *Int J Epidemiol*. 2005;34(4):853–62.