

Assessing the Impact of a Structured Educational Initiative on Awareness of Vaginitis and Its Prevention Among Adolescent Girls in Selected Higher Secondary Schools in Bengaluru

Aruna Mary C.^{1,*}, Rashmi Ramji M.R.², Swarnali Dey³, S. Aneesha³, Elsvin Greeshma George³, Priyanka Aji Mathew³, Smritikana Maji³, Sindhu K.N.³, Pallabi Prasad³, Anjali S.³, Rajkiran Ignatius³, Joel Philip³

Abstract

Background and Objectives: Vaginal inflammation, referred to as vaginitis, may culminate in discharge, itching, and pain. Usually, the root cause is an infection or an altered balance of the microbes in the vagina. In females between the ages of two and six, poor perineal hygiene—such as wiping after bowel movements from back to front or not washing hands afterward—is an important contributory factor. Another typical sign is frequent stroking of the vagina or perineum, particularly in response to itching. Little objects are occasionally pushed by children into bodily cavities, such as the vagina. Tissue paper is one example of a foreign object that can cause non-specific vaginitis, which discharges blood. Vaginal infections are managed with antibiotics, and changing pads and tampons frequently is a prophylactic step. **Objectives** (1) To evaluate the pre-test knowledge level about vaginitis and its prevention among adolescent girls at selected higher secondary schools in Bengaluru. (2) To assess the effectiveness of a structured teaching program on knowledge related to vaginitis and its prevention among adolescent girls. (3) To examine the association between pre-test knowledge scores and their chosen socio-demographic variables. **Methods:** The research strategy utilized for this study was a pre-experimental one-group pre-test and post-test design. A total of 60 teenage girls were randomly selected using the random sampling technique. The structured knowledge questionnaire Tool was employed to measure their knowledge levels. Following the initial assessment, the adolescent girls participated in the structured teaching program. A post-test was conducted on the eighth day using the same instrument. Utilizing both descriptive and inferential statistics, the outcomes were explained. **Results:** During the process of gathering data, 71.7% of participants knew nothing about vaginitis in

teenage females, 28.3% knew something about it, and 0% knew enough. In the post-test, 48.3% of respondents had moderate knowledge, 51.7% had appropriate knowledge, and 0.0% had insufficient knowledge. **Interpretation and Conclusion:** The results of the study demonstrate the effectiveness of a systematic training program in raising teenage girls' awareness of vaginitis.

Keywords: Adolescent girls, effectiveness, knowledge, structured teaching program, vaginitis

INTRODUCTION

“Adolescence is a new birth for the higher and more completely human traits are newborn.”

—G. Stanley Hall

Author for Correspondence

Aruna Mary C.
E-mail: aruna4000@gmail.com

¹Professor & Head, Department of Nursing, Dr. B.R. Ambedkar Institute of Nursing, Bengaluru, Karnataka, India

²Ph.D. Scholar, Department of Nursing, Dr. B.R. Ambedkar Institute of Nursing, Bengaluru, Karnataka, India

³Student, Department of Nursing, Dr. B.R. Ambedkar Institute of Nursing, Bengaluru, Karnataka, India

Received Date: August 25, 2024

Accepted Date: October 21, 2024

Published Date: November 10, 2024

Citation: Aruna Mary C., Rashmi Ramji M.R., Swarnali Dey, S. Aneesha, Elsvin Greeshma George, Priyanka Aji Mathew, Smritikana Maji, Sindhu K.N., Pallabi Prasad, Anjali S., Rajkiran Ignatius, Joel Philip. Assessing the Impact of a Structured Educational Initiative on Awareness of Vaginitis and Its Prevention Among Adolescent Girls in Selected Higher Secondary Schools in Bengaluru. International Journal of Midwifery Nursing and Practices. 2024; 2(2): 10–21p.

Girls' adolescence is a unique time that marks their transition from girlhood to adulthood. During this stage, she struggles to cope with the swift changes in her body, hormones, and emotions. Although this period is often called the "awkward age" or "transitional age," she feels uncertain about her path. However, young girls who maintain good physical and mental health are more likely to develop positive and healthy attitudes as they mature into women [1, 2].

India, where the population is expected to comprise 105 million girls aged between 10 and 19 years, is among the fastest growing in the world. Reproductive health issues are thought to cause 250 million years of lost productive life annually worldwide. In such cases, teenage vaginitis is a prevalent issue [3].

A vaginal infection or inflammation is referred to medically as "vaginitis." It is the most typical gynecologic diagnosis in settings outside primary care [4].

Vaginal inflammation, commonly referred to as vaginitis, can lead to symptoms, such as discharge, itching, and pain. It is typically caused by infection or disruption of the balance of microorganisms within the vagina. Decreasing estrogen levels following menopause and certain skin conditions can also contribute to vaginitis as they can disrupt the normal vaginal flora and cause discomfort. Approximately one in three women will experience vaginitis at some point in their lives [5].

NEED FOR STUDY

Adolescents must deal with issues pertaining to sociocultural situations in a world that is changing quickly, frequently with nations and cultures falling apart, and with a restless populace. Teenagers comprise more than 21.4% of India's total population. *Candida albicans*, *Trichomonas vaginalis*, and *Gardnerella vaginalis* are the most common causes of vulvovaginal infections. According to estimates, 40–45% of women will have two or more episodes of vulva-vaginal candidiasis over their lives and 75% of women will have at least one episode [6].

A study on the prevalence of bacterial vaginitis in Chennai showed that women from lower socioeconomic backgrounds were more likely to develop the disease. A total of 487 women with a low socioeconomic status were analyzed. A total of 120 women (25.95%, CI 20.8–28.4) tested positive for bacterial vaginosis, and this condition was substantially associated with younger age ($P = 0.014$). A study found that women from lower socioeconomic backgrounds who also had other STDs had a significant prevalence of bacterial vaginitis [7].

Teenage females endure hardships because of inadequate and inaccurate knowledge regarding sexual and reproductive health. Because reproductive health information is neither private nor personal, they are uncomfortable seeking medical attention. Misinformation regarding reproductive tract infections is prevalent in a considerable proportion of teenage girls. Adolescent girls' knowledge of reproductive health is enhanced by health education and increased exposure to mass media, both of which require significant efforts [8].

The frequency and awareness of vaginitis in teenagers is the subject of relatively little research in India. In light of this, the investigator felt it was necessary to ascertain the extent of adolescent girls' awareness of vaginitis and, through the use of an organized teaching program, to educate them about its prevention [9].

REVIEW OF LITERATURE

The frequency of bacterial vaginitis was investigated at the obstetrics and gynecology department of a medical college hospital. Vaginal swabs were obtained from 174 female patients who reported abnormal vaginal discharge. Bacterial vaginitis was diagnosed using Gram staining and clinical

composite criteria. Gram staining revealed bacterial vaginitis in 58.4% of patients and clinical composite criteria in 68.39% of cases. The study concluded that the prevalence of bacterial vaginitis was higher in women in the reproductive age range [10].

A descriptive study was conducted among girls in higher secondary schools to assess their knowledge and practices regarding various aspects of menstrual hygiene. The study included 150 adolescent girls aged 15–17 years from three schools in the Shivanagar and Patihani Village Development Committees of Chitwan District. In total, 27 questions were asked for each of the 15 questions. The findings showed that they did not practice appropriate menstrual hygiene. Of the girls, only 6% were aware that menstruation is a physiological process, and 36.7% were aware that hormones are the cause. Only 11.3% discarded the pads after using their full term, compared to 94% who used them. Practice and overall knowledge were 12.9% and 40.6%, respectively. The study concluded that although knowledge levels were higher, both knowledge and practices regarding menstrual hygiene were still inadequate. Therefore, it is important to teach girls about the menstrual cycle, its importance, how to use appropriate pads or absorbents, and how to properly dispose of them. This can be accomplished by providing them with the necessary instructions and health information (from educators, family members, health educators, and the media) so that teenage girls do not have any misconceptions about menstruation [11].

The pre-experimental technique, or one-group pre-test post-test design, was used to perform the study on adolescents at a particular school in Kanpur with 100 pupils. To gather data, structured questionnaires were used to evaluate knowledge levels. Knowledge levels were assessed through a pre-test followed by an organized lesson plan, and a post-test was conducted one week later. At the 5% significance level, the mean difference between the pre-test and post-test scores was 8.79 (* $p < 0.05$). This study found that the structured vaccination education approach worked well [12].

METHODOLOGY

The research approach employed in this study was a pre-experimental one-group pre-test and post-test design. 60 young girls were randomly selected for the study using random sampling. Knowledge levels were measured using a structured knowledge questionnaire tool. After the initial assessment, the adolescent girls participated in the structured teaching program. A post-test was conducted on the eighth day, using the same instrument. The results were analyzed using descriptive and inferential statistics (Figure 1).

RESULTS

The results were computed using descriptive and inferential statistics based on the study objectives.

Section 1. Demographic characteristics of respondents.

Demographic characteristics of respondents are presented in Tables 1 to 3, which summarize key variables such as age, educational status, and other relevant demographic factors.

Table 1. Respondents were categorized according to their age and the mother's or guardian's educational status (N=60).

Characteristics	Category	Respondents	
		Number	Percent
Age group (years)	13–14	26	43.3
	15–16	34	56.7
Educational status of mother/guardian	Primary	6	10.0
	Secondary	23	38.3
	Higher Secondary	21	35.0
	Graduate	10	16.7
Total		60	100.0

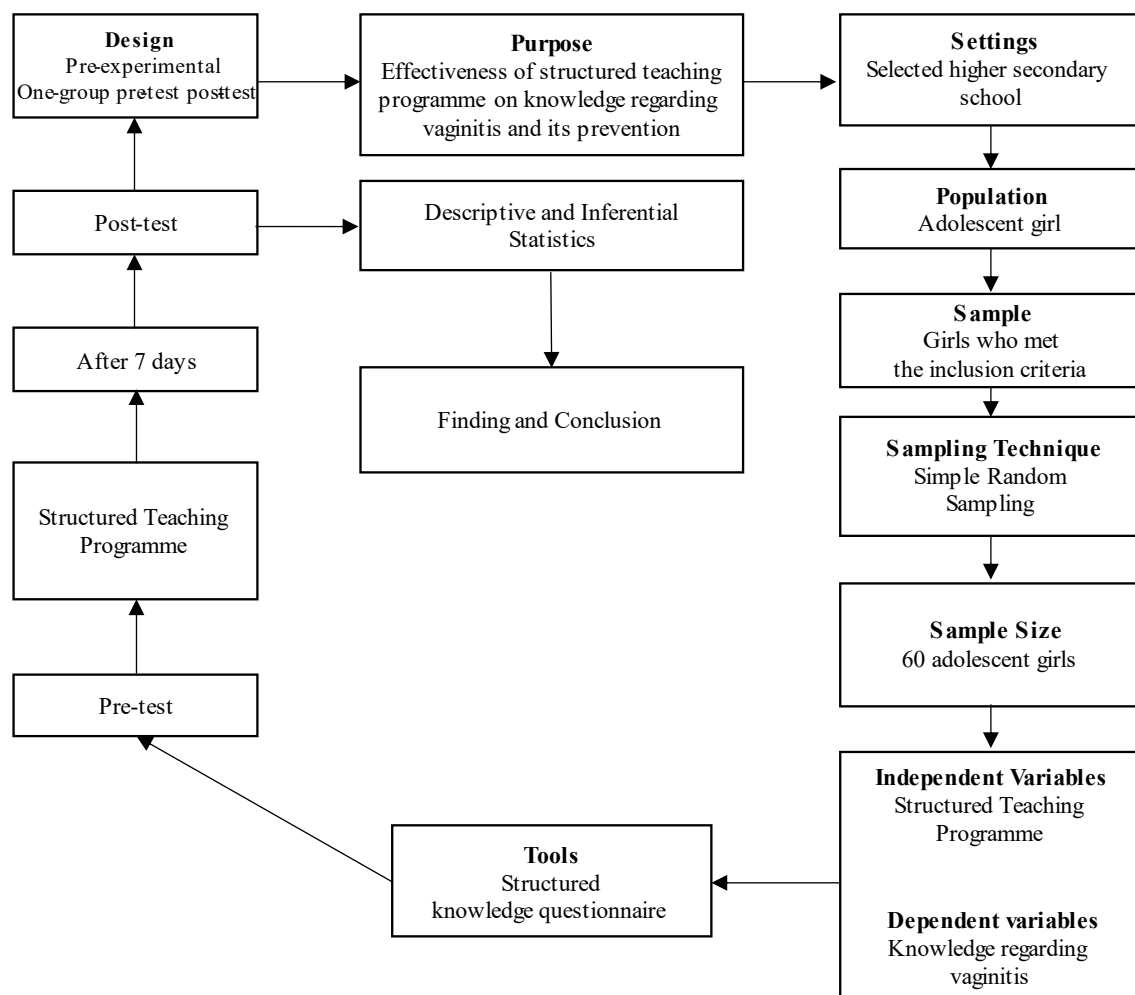


Figure 1. Schematic presentation.

Table 2. Respondent categorization is based on religion and family structure (N=60).

Characteristics	Category	Respondents	
		Number	Percent
Religion	Hindu	19	31.7
	Muslim	30	50.0
	Christian	11	18.3
Type of family	Nuclear	44	73.3
	Joint	16	26.7
Total		60	100.0

Table 3. Response to the previous source of information on vaginitis and its prevention (N=60).

Characteristics	Category	Respondents	
		Number	Percent
Previous source of information on vaginitis and its prevention	Mass media	3	5.0
	Parents/friends/relatives	20	33.3
	Not aware	37	61.7
Previous history of vaginitis	Yes	14	23.3
	No	46	76.7
Total		60	100.0

Section 2(a). Overall and aspect-wise pre-test knowledge of vaginitis and its prevention.

Table 4 and Figure 2 demonstrate the general and pre-test answers on respondents' knowledge about vaginitis and how to prevent it. None of the adolescent girls (71.7%) had adequate knowledge, whereas 17 (28.1%) had moderate knowledge.

Table 4. Classification of respondent pre-test knowledge level on vaginitis and its prevention (N=60).

Knowledge level	Category	Respondents	
		Number	Percent
Inadequate	≤50% score	43	71.7
Moderate	51–75% score	17	28.3
Adequate	>75% score	0	0.0
Total		60	100.0

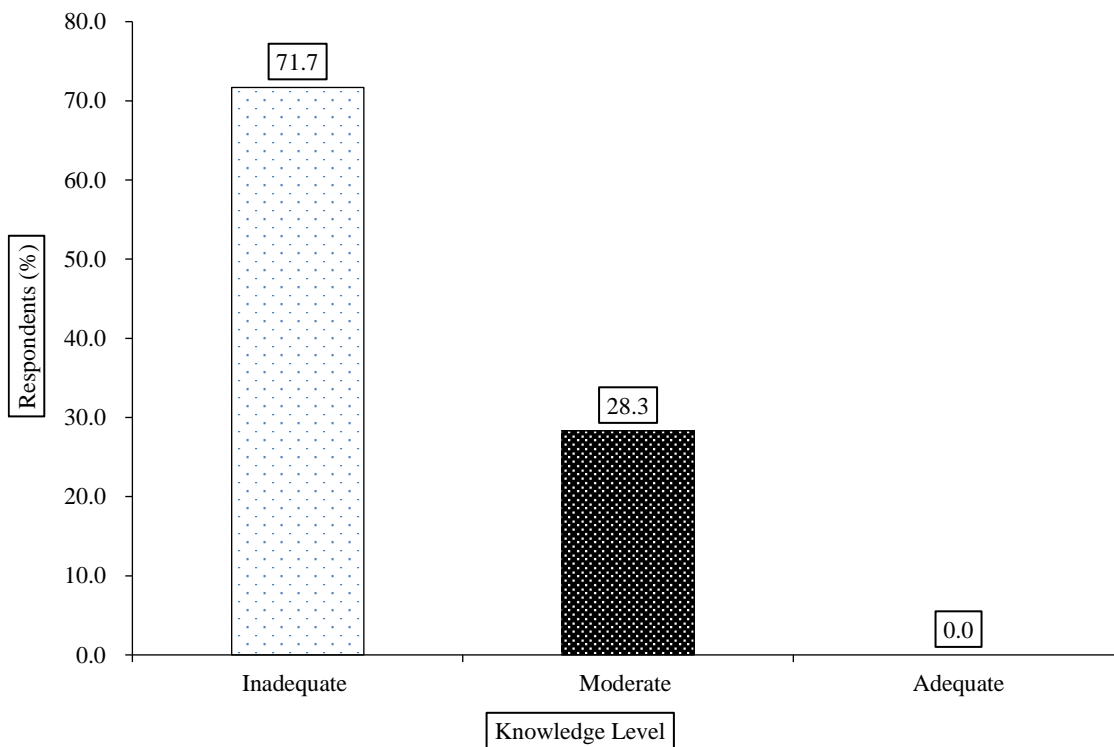


Figure 2. Classification of respondent pre-test knowledge level on vaginitis and its prevention.

Section 2(b). Overall and aspect-wise post-test knowledge levels on vaginitis and its prevention.

Table 5 and Figure 3 show the overall and aspect-wise post-test knowledge scores of respondents on vaginitis and its prevention. It was found that 31 (51.7%) adolescent girls had adequate knowledge, 29 (48.3%) had moderate knowledge, and none had inadequate knowledge.

Table 5. Classification of respondents of post-test knowledge level on vaginitis and its prevention.

Knowledge level	Category	Respondents	
		Number	Percent
Inadequate	≤50% score	0	0.0
Moderate	51–75% score	29	48.3
Adequate	>75% score	31	51.7
Total		60	100.0

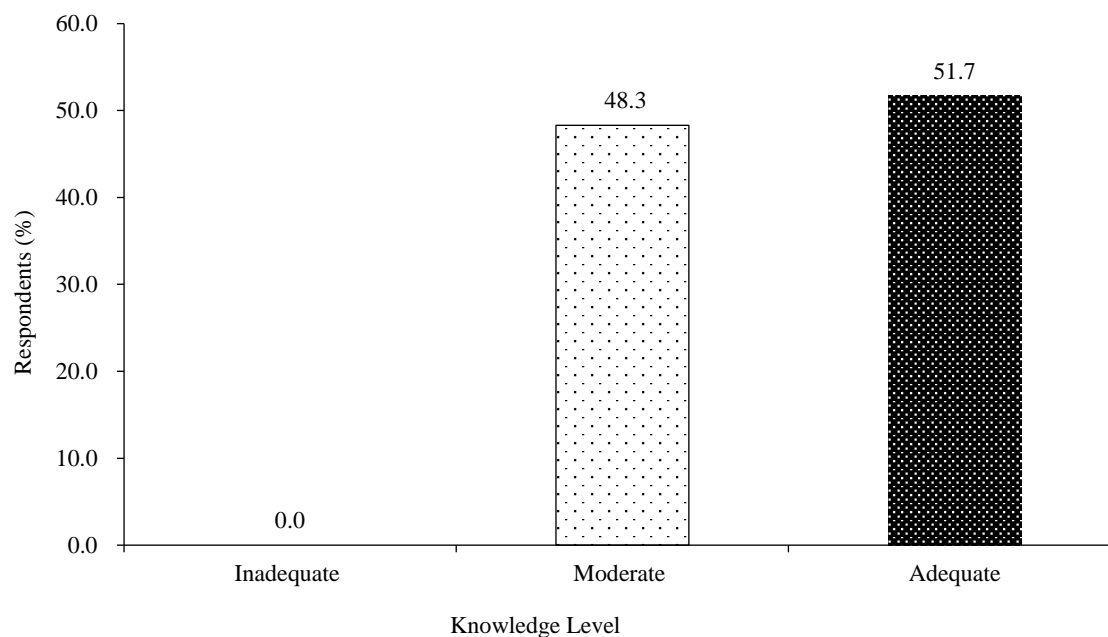


Figure 3. Classification of respondents of post-test knowledge level on vaginitis and its prevention.

Section 2(c). Overall and aspect-wise pre-test and post-test knowledge scores on vaginitis and its prevention.

Table 6 and Figure 4 represent the total knowledge scores on viral illness and prevention from both the pre-test and post-tests. The results showed that the enhancement mean was 41.5%, the post-test mean was 78.9%, and the pre-test mean was 37.4%.

Table 6. Overall pre-test and post-test mean knowledge scores on vaginitis and its prevention (N=60).

Aspects	Max. score	Knowledge scores				Paired 't' test
		Mean	SD	Mean (%)	SD (%)	
Pre-test	25	9.35	3.93	37.4	15.7	21.57*
Post-test	25	19.72	1.82	78.9	7.3	
Enhancement	25	10.37	3.73	41.5	14.9	

* Significant at 5% level, $t(0.05, 59df) = 1.96$

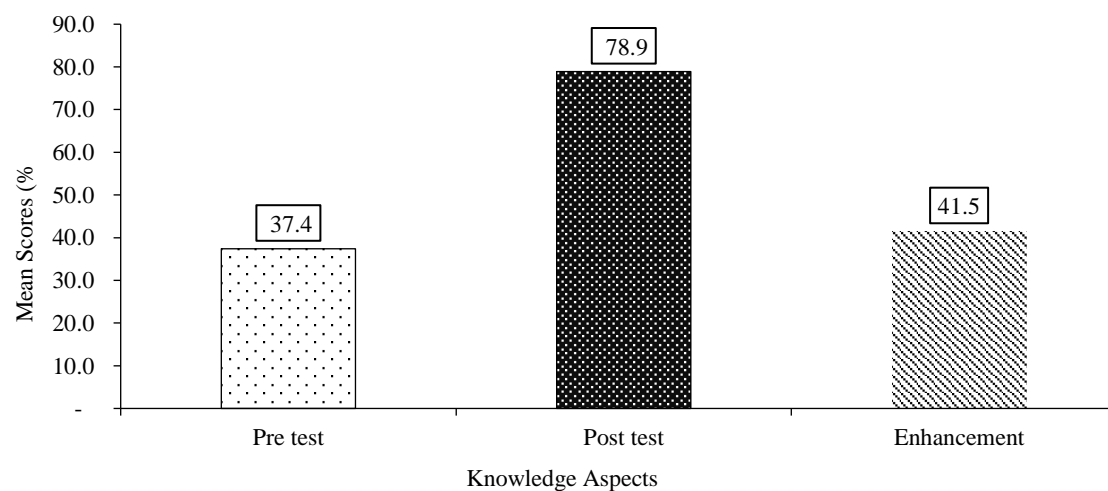


Figure 4. Overall pre-test and post-test mean knowledge scores on vaginitis and its prevention.

Table 7. Aspect-wise mean pre-test and post-test knowledge scores on vaginitis and its prevention (N = 60).

No.	Knowledge aspects	Respondents' knowledge (%)						Paired 't' test
		Pre-test		Post-test		Enhancement		
		Mean	SD	Mean	SD	Mean	SD	
I	Prevalence, structure, and functions	39.2	20.4	77.5	11.9	38.3	20.4	14.54*
II	Causes and predisposing factors	27.5	25.5	77.5	20.9	50.0	22.1	17.52*
III	Signs and symptoms	18.8	19.3	75.4	19.8	56.7	26.8	16.39*
IV	Complication and preventive measures	48.5	23.6	82.2	12.1	33.7	23.7	11.01*
	Combined	37.4	15.7	78.9	7.3	41.5	14.9	21.57*

* Significant at 5% level, $t(0.05, 59df) = 1.96$

Table 7 and Figure 5 reveal that in the pre-test maximum mean score was 48.5% from complication and preventive measures and the minimum mean score was 18.8% from signs and symptoms. In the post-test maximum mean score was 82.2% from complication and preventive measures and the minimum mean score was 75.4% from signs and symptoms.

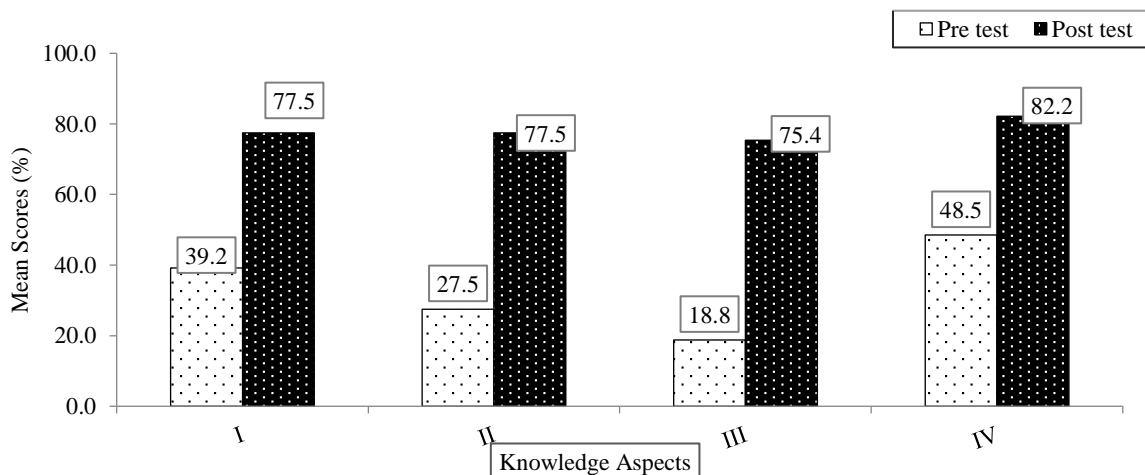


Figure 5. Aspect-wise mean pre-test and post-test knowledge scores on vaginitis and its prevention.

Table 8. Classification of respondents on pre-test and post-test knowledge level on vaginitis and its prevention.

Knowledge level	Category	Classification of respondents				χ^2 value
		Pre-test		Post-test		
		N	%	N	%	
Inadequate	$\leq 50\%$ score	43	71.7	0	0.0	77.13*
Moderate	51–75% score	17	28.3	29	48.3	
Adequate	$> 75\%$ score	0	0.0	31	51.7	
Total		60	100.0	60	100.0	

*Significant at 5% level, $\chi^2(0.05, 2df) = 5.991$

Table 8 and Figure 6 depict the distribution of the level of knowledge in respondents on vaginitis and its prevention, which shows that among respondents in the pre-test, 37 (71.7%) had inadequate knowledge and in the post-test one of them had inadequate knowledge, in pre-test 17 (28.3%) had

moderate knowledge and in post-test 29 (48.3%) had moderate knowledge, in pre-test none of them had adequate knowledge and in post-test 31 (51.7%) had adequate knowledge.

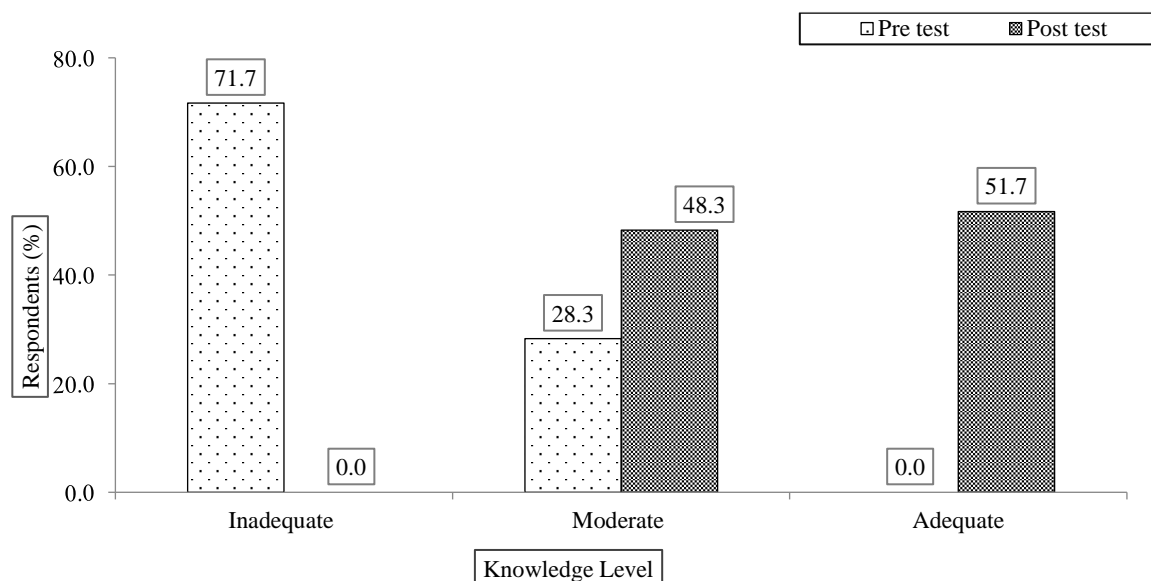


Figure 6. Classification of respondents on pre-test and post-test knowledge level on vaginitis and its prevention.

Table 9. Association between demographic variables and pre-test knowledge level on vaginitis and its prevention (N=60).

Demographic variables	Category	Sample	Knowledge level				χ^2 value	P value
			Inadequate		Moderate			
			N	%	N	%		
Age group (years)	13-14	26	15	57.7	11	42.3	4.41*	P<0.05 (3.841)
	15-16	34	28	82.4	6	17.6		
Educational status of mother/guardian	Primary	6	4	66.7	2	33.3	3.95 NS	P>0.05 (7.815)
	Secondary	23	19	82.6	4	17.4		
	Higher Secondary	21	12	57.1	9	42.9		
	Graduate	10	8	80.0	2	20.0		
Religion	Hindu	19	17	89.5	2	10.5	6.85*	P<0.05 (5.991)
	Muslim	30	17	56.7	13	43.3		
	Christian	11	9	81.8	2	18.2		
Type of family	Nuclear	44	35	79.5	9	20.5	5.04*	P<0.05 (3.841)
	Joint	16	8	50.0	8	50.0		
Previous source of information on vaginitis and its prevention	Mass media	3	2	66.7	1	33.3	0.77 NS	P>0.05 (5.991)
	Parents/friends/relatives	20	13	65.0	7	35.0		
	Not aware	37	28	75.7	9	24.3		
Previous history of vaginitis	Yes	14	7	50.0	7	50.0	4.22*	P<0.05 (3.841)
	No	46	36	78.3	10	21.7		
Combined		60	43	71.7	17	28.3		

*Significant at 5% Level, NS: Non-significant.

Note: Figures in the parenthesis indicate Table value

Age: Table 9 and Figure 7 depict the level of knowledge with respect to their age, which shows that 15 (57.7%) of age group 13–14 had inadequate knowledge, 11 (42.3%) had moderate knowledge, 28 (82.4%) of age group 15–16 had inadequate knowledge, and 6 (17.6%) had moderate knowledge.

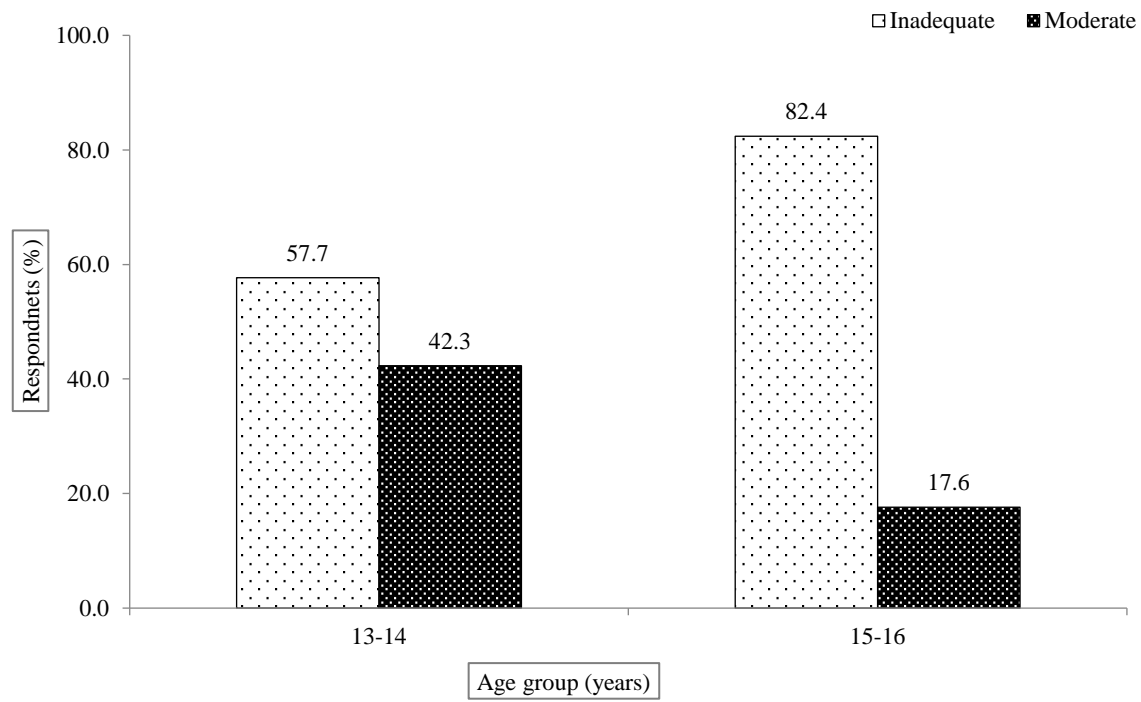


Figure 7. Association between age group and pre-test knowledge level on vaginitis and its prevention.

Religion: Table 9 and Figure 8 reflect the level of knowledge with respect to religion, which shows that among respondents, 57.7% of Hindu adolescent girls had inadequate knowledge, 42.3% had moderate knowledge, 82.4% of Muslim adolescent girls had inadequate knowledge, 17.6% had moderate knowledge, 89.5% of Christian adolescent girls had inadequate knowledge, and 10.5% had moderate knowledge.

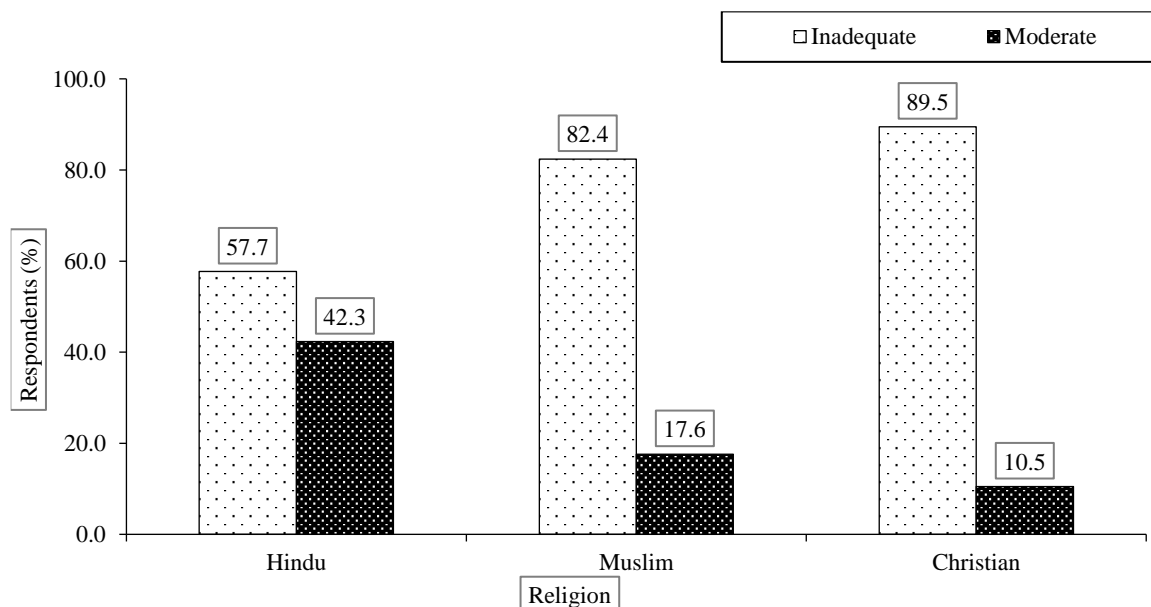


Figure 8. Association between religion and pre-test knowledge level on vaginitis and its prevention.

Family type: Table 9 and Figure 9 depict the distribution of level of knowledge in respondents with respect to their family type, which shows the respondents who have nuclear family, 35 (79.5%) had inadequate knowledge and 9 (20.5%) had moderate knowledge; and those with joint family, among them 8 (50.0%) had inadequate knowledge and 8 (50.0%) had moderate knowledge.

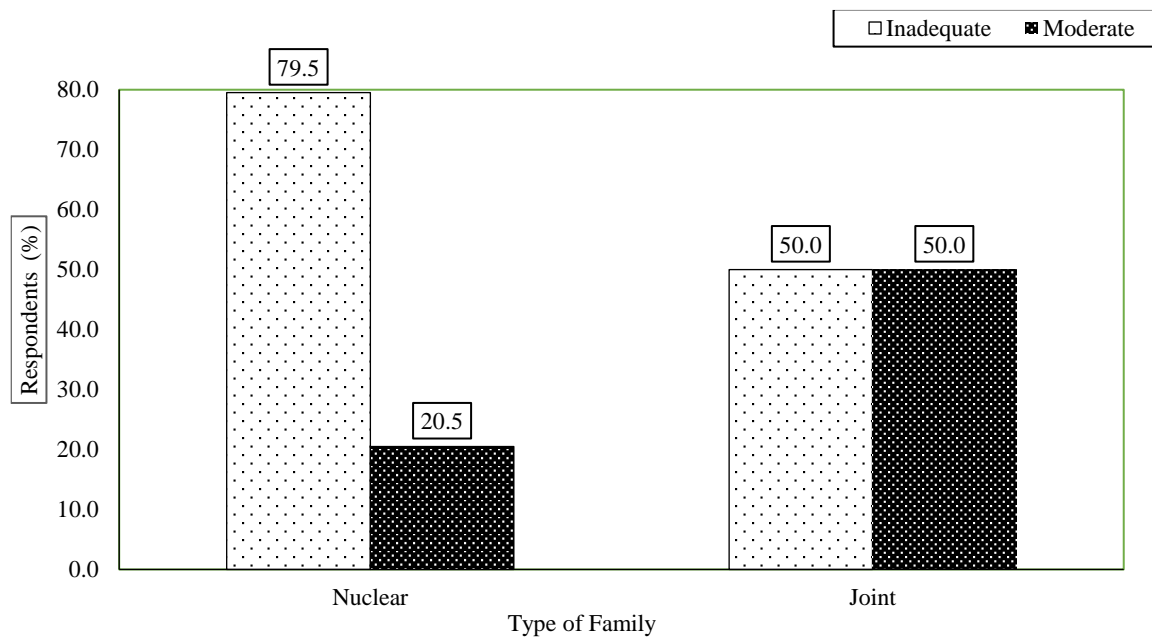


Figure 9. Association between type of family and pre-test knowledge level on vaginitis and its prevention.

Previous history of vaginitis: Table 9 and Figure 10 show the distribution of the level of knowledge of respondents with respect to their previous history of vaginitis. It was found that of the respondents who got vaginitis, 7 (50.0%) had inadequate knowledge, 7 (50.0%) had moderate knowledge, those who did not have a previous history of vaginitis had 36 (78.3%) inadequate knowledge and 10 (21.7%) had moderate knowledge.

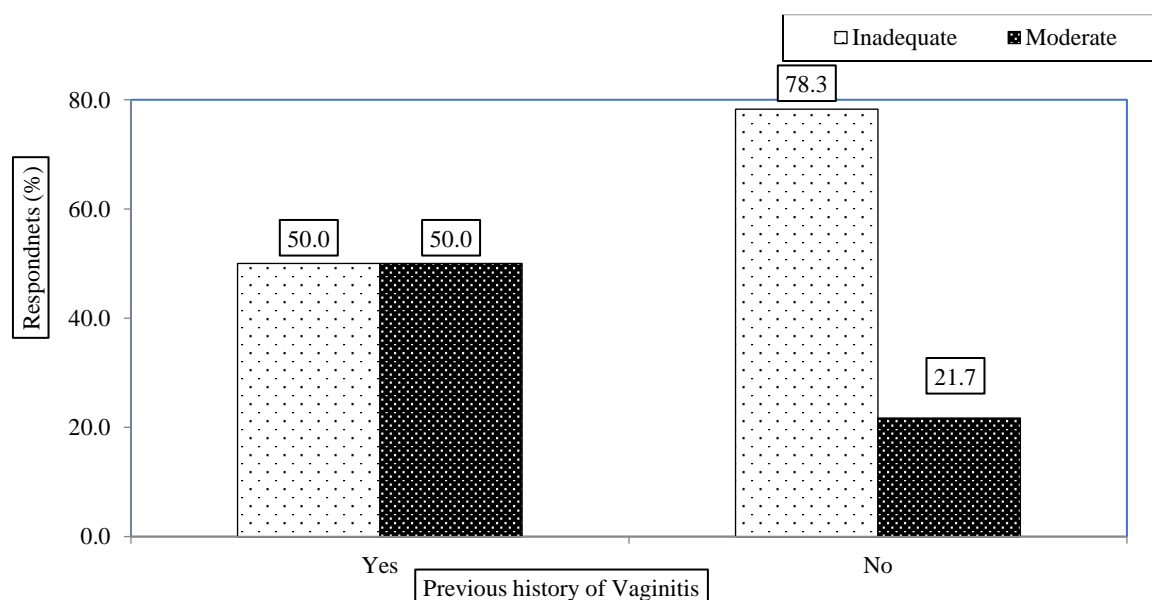


Figure 10. Association between Previous history of vaginitis and Pre-test Knowledge level on Vaginitis and its prevention

INTERPRETATION AND CONCLUSION

The present study illustrates the effectiveness of structured teaching programs in enhancing teenage girls' vaginitis knowledge. The conclusions drawn from the study's findings are as follows.

Nursing Implication

According to the researcher, the study's implications are very important for nursing practice, education, administration, and research, since they open up new avenues for improving our understanding of adolescent girls' vaginitis.

Nursing Education

1. Nursing educators should be trained to inform adolescent girls about vaginitis.
2. Nursing educators should develop a plan to educate adolescent girls about vaginitis to effectively deliver this information.

Nursing Practice

In recent years, there have been numerous changes in nursing practice. Activities that encourage people to adopt preventive and health-promoting behaviors are highlighted by the enlarged role of professional nurses. Given that nurses typically take a holistic approach to patient care, their main responsibility is to act as advocates for their patients.

Nursing Administration

1. Nurse administrators should seek and promote innovative approaches for creating suitable teaching materials. Additionally, she should allocate adequate manpower, funds, and resources to disseminate vaginitis information to adolescent girls.
2. Nursing administrators can work with the community to help prevent the occurrence of vaginitis among adolescent girls.

Nursing Research

The field of nursing greatly benefits from nursing research. Finding new resources and implementing changes to deliver excellent nursing care are made possible by nursing research, which also enhances clinical expertise and personal understanding. As such, nurses need to be on the lookout and develop abilities grounded in recent scientific research.

Determining the current level of awareness about vaginitis among teenage girls is crucial for determining the extent of information that has to be provided. Nurses are responsible for ensuring that the mothers of teenage girls are well informed about vaginitis.

REFERENCES

1. Ghimire S. Knowledge regarding menstrual hygiene among adolescent girls. *Int J Res Med Sci.* 2017;5:3426-30. DOI: 10.18203/2320-6012.ijrms20173534.
2. National Academies of Sciences, Engineering, and Medicine, Health and Medicine Div., Div. of Behavioral and Social Sciences and Education, Board on Children, Youth, and Families, Committee on the Neurobiological and Socio-behavioral Science of Adolescent Development and Its Applications. *The promise of adolescence: Realizing opportunity for all youth.* In: Backes EP, Bonnie RJ, editors. Washington (DC): National Academies Press; 2019. PubMed: 31449373.
3. United Nations Children's Fund (UNICEF). (2019). *Adolescent Development and Participation. Investing in adolescents builds strong economies, inclusive communities and vibrant societies.* [online] UNICEF. Available from: <https://www.unicef.org/adolescence>
4. Gold JM, Shrimanker I. *Physiology, Vaginal.* 2023 Jul 24. Treasure Island (FL): StatPearls Publishing; 2024.
5. Mayo Clinic. (2021). *Vaginitis-Vaginitis - Symptoms & causes - Mayo Clinic.* [online] Available from: <https://www.mayoclinic.org/diseases-conditions/vaginitis/symptoms-causes/syc-20354707>

6. Swarna S, Usha Kiran C, Bhargavi C. Effectiveness of structured teaching programme on knowledge regarding vaginitis and its prevention among adolescent girls in selected high schools at Tirupati. *Int J Creat Res Thoughts*. 2021;9(11):232-232.
7. Anisha SR. Effectiveness of structured teaching programme on knowledge regarding vaginitis and its prevention among adolescent girls in selected higher secondary school at Madurai [dissertation]. Tamil Nadu Dr. M.G.R Medical University; 2013.
8. Janighorban M, Boroumandfar Z, Pourkazemi R, Mostafavi F. Barriers to vulnerable adolescent girls' access to sexual and reproductive health. *BMC Public Health*. 2022;22:2212. DOI: 10.1186/s12889-022-14687-4. PubMed: 36447192.
9. Quan M. Vaginitis: Diagnosis and management. *Postgrad Med*. 2010;122:117–127. doi: 10.3810/pgm.2010.11.2229. PubMed: 21084788.
10. Ibrahim SM, Bukar M, Mohammed Y, Audu BM, Ibrahim HM. Prevalence of vaginal candidiasis among pregnant women with abnormal vaginal discharge in Maiduguri. *Niger J Med*. 2013 Apr-Jun;22(2):138-42. Erratum in: *Niger J Med*. 2013 Jul-Sep;22(3):257. Bukar, M [added]; Mohammed, B [corrected to Mohammed, Y]; Yahaya, M [removed]; Ibrahim, H A [corrected to Ibrahim, H M]. PMID: 23829126.
11. Hainer BL, Gibson MV. Vaginitis: Diagnosis and treatment. *Am Fam Physician*. 2011;83:807-15.
12. Manu J, Samuel M, Sharma J, Singh M. Effectiveness of structured teaching programme on knowledge regarding iron deficiency anaemia among adolescent girls of Jawaharlal Nehru Inter College, Kalyanpur, Kanpur. *Int J Adv Res*. 2018;6:1300-4. DOI: 10.21474/IJAR01/7938.