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EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAM ON VULVOVAGINAL CANDIDIASIS PREVENTION KNOWLEDGE AMONG ADOLESCENT GIRLS IN A NURSING COLLEGE HOSTEL

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ABSTRACT

Background: Vulvovaginal candidiasis (VVC) is a common gynecological condition primarily caused by Candida albicans, affecting a significant proportion of women, especially adolescent girls. Due to physiological, behavioral, and social factors, adolescents are particularly vulnerable, often compounded by lack of knowledge and cultural stigma around discussing vaginal health. Educational interventions such as structured teaching programs are vital to improve awareness and preventive practices regarding VVC. **Methods:** A descriptive survey with a descriptive research design was conducted among 50 adolescent girls aged 17-19 residing in a nursing college hostel in Chennai. Purposive sampling was used. A validated structured questionnaire assessed knowledge and practices related to VVC prevention pre- and post-intervention. Data were collected after ethical approval and analyzed using descriptive statistics and inferential statistics, including chi-square tests and paired t-tests. **Results:** Pre-intervention, 92% of participants had moderately adequate knowledge and none had adequate knowledge of VVC prevention. Post-intervention, 20% achieved adequate knowledge and 80% maintained moderately adequate knowledge. The structured teaching program significantly improved mean knowledge scores. Among demographic factors, paternal education showed a significant association with knowledge levels, with adolescents of skilled worker fathers exhibiting higher knowledge. **Conclusion:** The structured teaching program effectively enhanced adolescent girls' knowledge regarding vulvovaginal candidiasis prevention. Educational interventions in institutional settings are essential to bridge reproductive health knowledge gaps, reduce stigma, and promote proactive health behaviors. Family socioeconomic factors, especially paternal education, should be considered in health education strategies. Further research is needed on long-term retention and behavior change.

Keywords:
Vulvovaginal candidiasis; Adolescent girls; Structured teaching program; Prevention knowledge; Reproductive health education; Health literacy; Educational intervention

1. Introduction

Vulvovaginal candidiasis (VVC) is a common and significant gynecological condition affecting a large proportion of women, particularly those in the reproductive age group. It primarily results from the overgrowth of Candida species, with Candida albicans identified as the predominant pathogen responsible for such infections [1,2]. Epidemiological data suggest that approximately 75% of women will experience at least one episode of VVC during their

lifetime, while recurrent infections can impose a considerable burden on both physical health and quality of life [3,4]. Clinically, VVC manifests through symptoms such as itching, burning sensations, and abnormal vaginal discharge, all of which detrimentally affect the psychological well-being and daily functioning of afflicted individuals [5].

Adolescent girls constitute a particularly vulnerable group for VVC due to physiological, behavioral, and social factors [6]. Hormonal fluctuations during puberty, coupled with lifestyle practices and gaps in reproductive health knowledge, increase susceptibility to vulvovaginal infections. Inadequate personal hygiene practices and limited parental guidance have been identified as significant contributors to the elevated incidence of candidiasis in this population [5]. Furthermore, the cultural stigma around discussing vaginal health issues often discourages adolescents from seeking appropriate medical advice or adopting preventive behaviors in a timely manner [7].

Given this context, educational interventions in the form of structured teaching programs have emerged as vital tools for addressing knowledge deficits and promoting healthier behaviors [8]. These programs provide comprehensive information on the etiology, symptoms, and preventive measures related to VVC, empowering adolescent girls to manage their reproductive health more effectively [8]. Research has demonstrated that such structured educational initiatives significantly improve knowledge, attitudes, and health practices among adolescents. Moreover, by fostering an environment open to discussions about vaginal health, these programs reduce stigma and encourage proactive health-seeking behavior [9].

Incorporation of interactive and multimedia components, including practical demonstrations and videos, enhances engagement and information retention within structured teaching programs [8]. Evidence supports that interactive learning methods are particularly effective in improving adolescents' understanding of reproductive health, catering to diverse learning styles and making the information more relatable and accessible. This multifaceted approach thereby maximizes the impact of health education efforts [6,10].

The effectiveness of structured teaching programs in preventing vulvovaginal candidiasis among adolescent girls is increasingly validated by empirical research, supporting their role in raising awareness and fostering healthy practices. This study aims to evaluate the existing knowledge levels related to candidiasis prevention among adolescent girls and to assess the impact of a structured teaching program in enhancing their understanding and practices regarding this condition.

Need of The Study

Educational interventions such as structured teaching programs are crucial to address these knowledge gaps, improve awareness, and promote preventive practices. These programs empower adolescent girls to better manage their reproductive health by providing comprehensive information about the causes, symptoms, and prevention of VVC. Despite the importance of such interventions, many adolescents demonstrate only moderate or inadequate knowledge about preventing candidiasis before educational programs. Therefore, there is a clear need to implement and evaluate structured teaching programs in institutional settings like nursing college hostels to enhance reproductive health literacy, reduce stigma, and encourage proactive health-seeking behaviors among adolescent girls.

Furthermore, factors such as paternal education and socioeconomic background influence adolescents' knowledge levels, suggesting that health education strategies should consider family contexts for greater effectiveness.

Aim of the study

The aim of the study is to assess the effectiveness of a structured teaching program on the knowledge and preventive practices regarding vulvovaginal candidiasis (VVC) among adolescent girls residing in a nursing college hostel. Specifically, the study seeks to evaluate adolescents' existing awareness about VVC prevention and determine how much the structured educational intervention can enhance their understanding and health behaviors related to preventing this condition.

2. Methods

2.1 Research Approach and Design

A descriptive survey approach employing a descriptive research design was utilized to assess the knowledge and practices regarding the prevention of vulvovaginal candidiasis among adolescent girls. The study sought to evaluate the effectiveness of a structured teaching program in enhancing knowledge and preventive practices related to candidiasis.

2.2 Study Setting

The investigation was conducted at a selected Hostel of a Nursing College in Chennai, providing a focused environment for studying adolescent girls residing within the institution.

2.3 Population and Sample

The sample comprised 50 adolescent girls aged 18-19 years, all residing in the selected hostel. The participants were selected using purposive sampling, ensuring inclusion of those most relevant to the study's objectives.

2.4 Inclusion Criteria

Adolescent girls aged 18-19 years, currently residing in the hostel, willing to participate, and available throughout the data collection period were included in the study.

2.5 Exclusion Criteria

Individuals were excluded if they were unwilling to participate, had previously received information on candidiasis prevention, or were affected by candidiasis or other skin infections during the study period.

2.6 Variables

Key variables included age, parental educational attainment, family structure, duration of hostel stay, and primary sources of health information. The primary outcome variables were

knowledge scores on candidiasis prevention, measured pre- and post-intervention, and demographic variables used for association analysis.

2.7 Data Collection Tools

A structured questionnaire comprising 27 items was developed and validated by subject experts for content and reliability (r = 0.85, split-half method). Data collection occurred over three days following ethical approval and informed consent from all participants. Both descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (chi-square, paired t-test) were used for data analysis.

3. Results

3.1 Distribution of Demographic Variables Among B.Sc Nursing Students

The demographic characteristics of the 50 B.Sc Nursing students reveal notable patterns across age, parental education, family structure, duration of hostel stay, and primary sources of health information. The majority of respondents were 18 years old (56%), with 24% aged 17 years and 20% aged 19 years, indicating a predominantly young cohort. Assessment of mothers' education showed a substantial proportion (72%) had only completed schooling up to 1st–8th standard, while 24% had reached 9th–12th standard, and a minority (4%) were professionals; notably, none were graduates. Family structure analysis identified that a higher proportion of students belonged to nuclear families (56%) compared to joint families (44%), suggesting a shift toward smaller household units. Evaluation of fathers' education indicated 64% were skilled workers, 32% were self-employed, and just 4% were unskilled workers, highlighting varied socioeconomic backgrounds within the sample. Duration of hostel residence was relatively evenly distributed: 36% had stayed for less than two years, and 32% each for less than three years and for four years, reflecting considerable mobility or varied entry points into hostel accommodation. Regarding sources of health information, nearly half (44%) identified school health programs as their main source, followed by parents (40%), and mass media (16%), pointing to the key role of institutional and familial channels in health communication among these students. Collectively, these findings illuminate the sociodemographic context of B.Sc Nursing students in this study, underscoring patterns in age distribution, educational attainment within families, household structures, occupational status of fathers, accommodation history, and health information dissemination channels as critical factors shaping their academic and social environment.

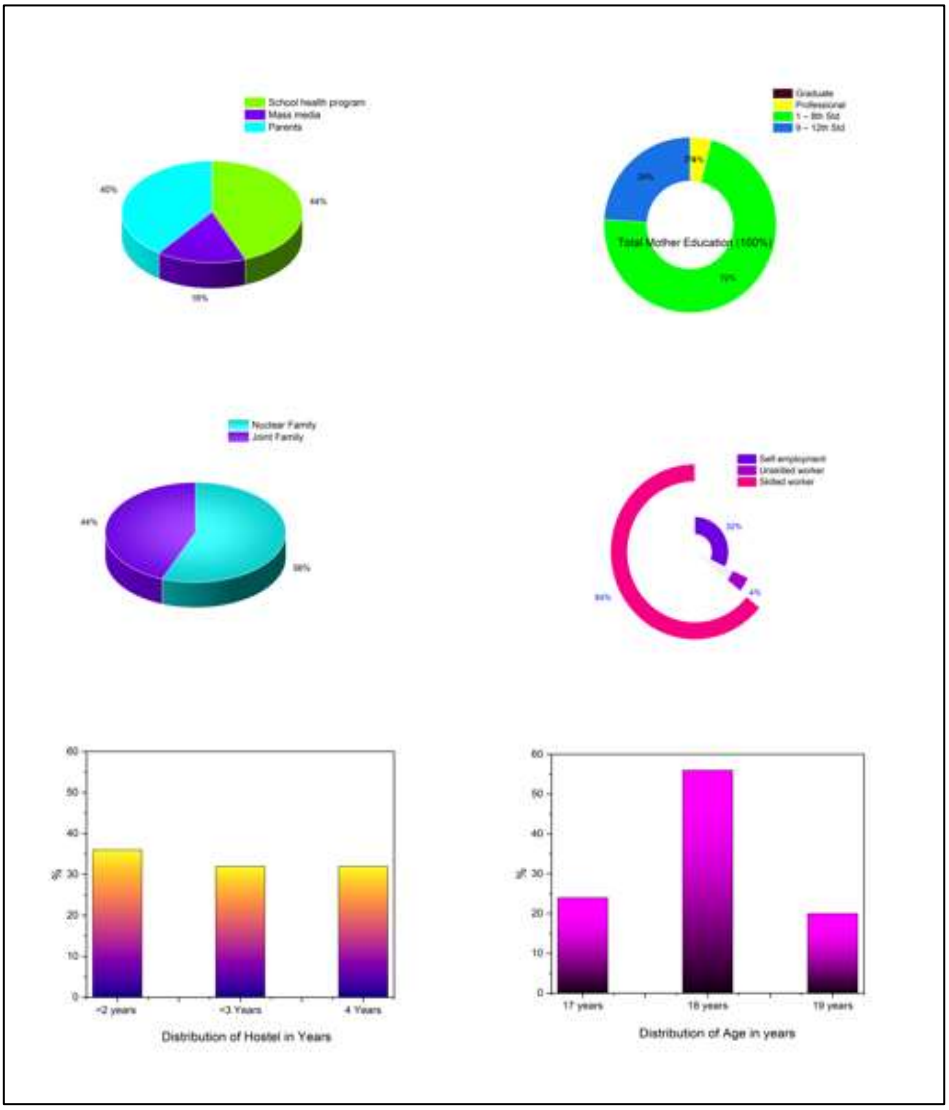

Fig. 1 Distribution of demographic variables among the study sample (N = 50)

3.2 Distribution of Knowledge Levels among Adolescents

Figure 2 describes the pre-test assessment of adolescents' knowledge regarding the prevention of candidiasis revealed that a substantial majority possessed only moderately adequate knowledge, with 92.0% (n=46) falling into this category. In contrast, a small proportion of the participants (8.0%, n=4) demonstrated inadequate knowledge about candidiasis prevention practices. Notably, none of the adolescents (0.0%, N=0) exhibited adequate knowledge in the pre-test phase, indicating a marked need for educational interventions targeting this population. The findings underscore the predominance of moderate awareness and the absence of high-level knowledge among the surveyed adolescents prior to any intervention.

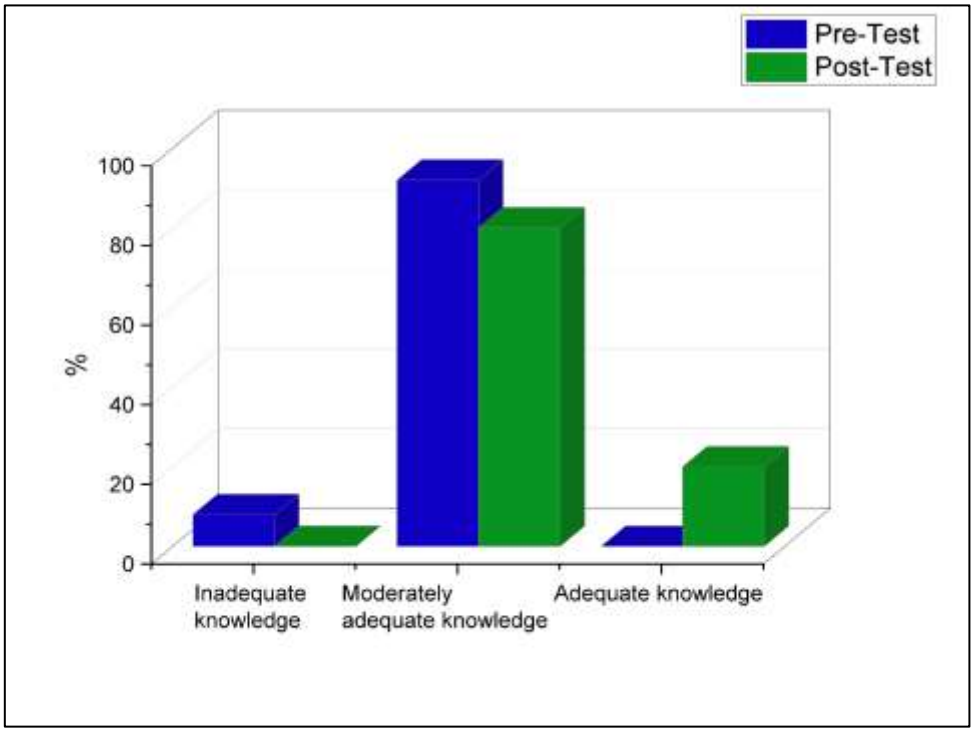

Fig. 2 Bar graph of level of knowledge on practice prevention of candidiasis in pre-test and post-test among adolescents

3.3 Distribution of Knowledge Levels on Candidiasis Prevention

Table 1: Distribution of level of knowledge on practice prevention of candidiasis in post-test among adolescents (N=50)

LEVEL OF KNOWLEDGE	KNOWLEDGE SCORE IN POST TEST	
	Frequency	**Percentage**
Inadequate knowledge	0	0.0%
Moderately adequate knowledge	40	80.0%
Adequate knowledge	10	20.0%
Total	50	100.0%

Table 1 presents the distribution of knowledge levels concerning practice prevention of candidiasis among adolescents in the post-test assessment. The findings reveal that none of the participants exhibited inadequate knowledge, with a frequency of 0 and a corresponding 0.0%. In contrast, the majority demonstrated moderately adequate knowledge, accounting for 40 respondents or 80.0% of the sample. Additionally, 10 participants, representing 20.0%,

achieved adequate knowledge following the intervention. These results indicate a positive shift towards improved awareness, with a substantial proportion of adolescents reaching at least a moderately adequate understanding of effective candidiasis prevention strategies. The total sample size assessed in the post-test was 50 participants, confirming comprehensive coverage in the analysis.

3.4 Effectiveness of Structured Teaching Program on Knowledge Enhancement

Analysis of the pre-test and post-test knowledge scores among adolescents regarding Candidiasis disaster management reveals a statistically significant increase in knowledge following the implementation of the structured teaching program as observed in Fig. 3. The mean difference in knowledge scores was 1.94, suggesting a significant improvement in participants' understanding post-intervention. The calculated standard deviation of 1.08 indicates moderate variability in the effectiveness scores across the participant group. Statistical analysis using a paired t-test resulted in a t-value of 12.739 with a corresponding p-value of 0.000, which is highly significant at the $p<0.001$ level. These results provide robust evidence that the structured teaching program was effective in enhancing knowledge among adolescents on candidiasis disaster management.

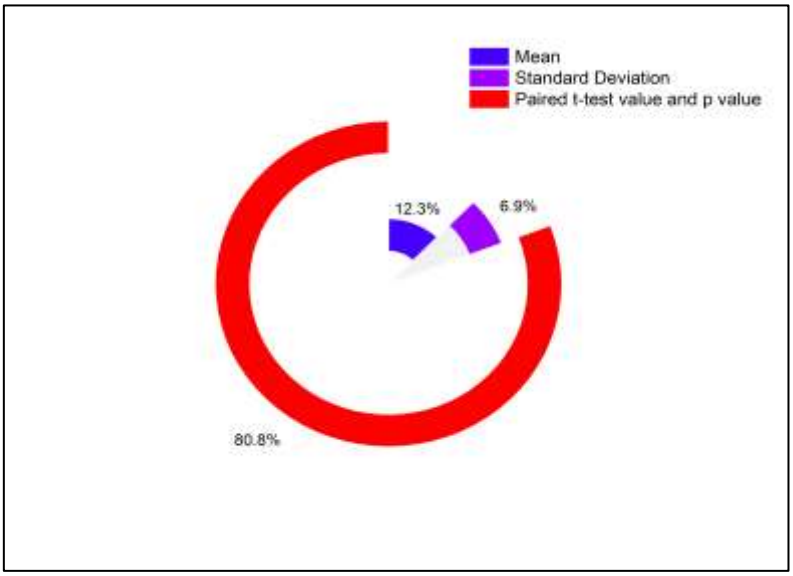

Fig. 3 Distribution of Mean, Standard Deviation, and Statistical Significance in Pre- and Post-Intervention Knowledge Scores among Adolescents on Candidiasis Disaster Management

3.5 Effectiveness of Educational Intervention on Adolescent Knowledge of Vaginal Candidiasis Prevention

Figure 5 presents a comparative analysis of pre-test and post-test knowledge scores pertaining to the prevention of vaginal candidiasis among adolescents. The mean pre-test score was 17.28 with a standard deviation of 1.80, while the mean post-test score increased to 19.22 with a standard deviation of 1.54. The observed mean difference was subjected to a paired t-test, yielding a t value of 12.739. The resulting p-value was less than 0.001, indicating a statistically significant improvement in knowledge following the intervention. Thus, the data demonstrate

that the educational intervention was highly effective in enhancing knowledge related to vaginal candidiasis prevention during adolescence.

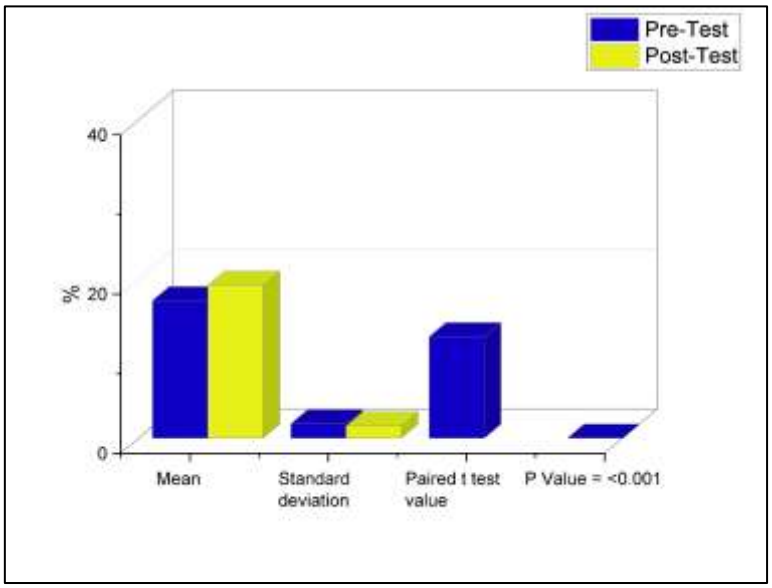

Fig. 4 Comparison of Pre-Test and Post-Test Knowledge Scores on Prevention of Vaginal Candidiasis Among Adolescents

3.6 Association between Demographic Variables and Pre-Test Knowledge on Candidiasis Prevention

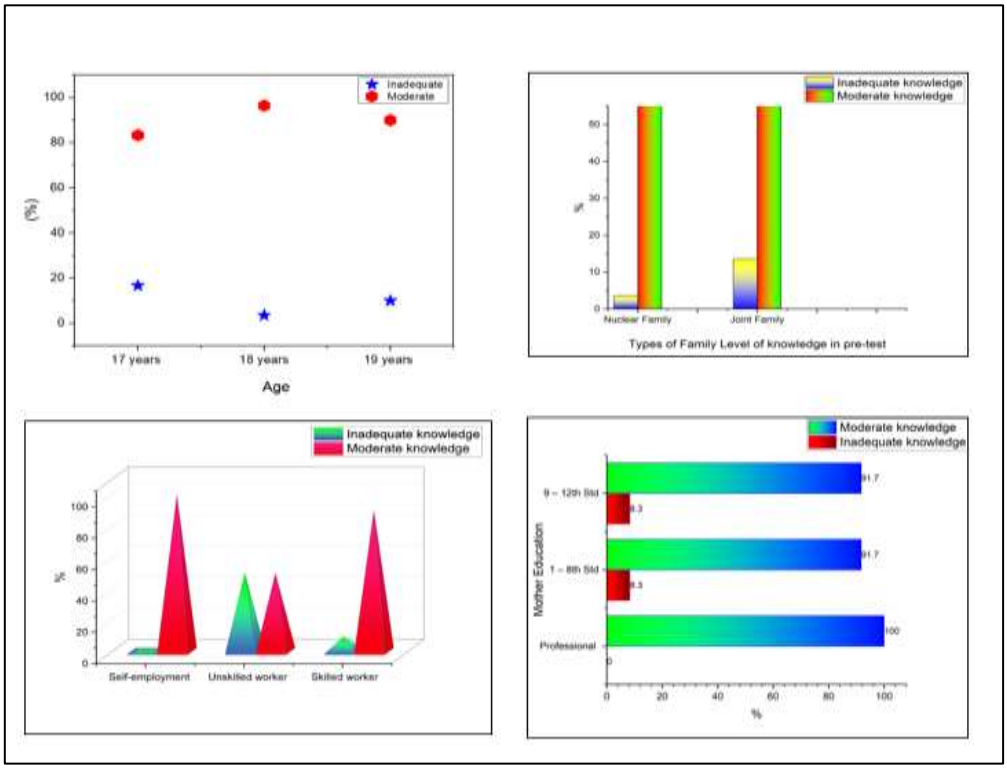

Fig. 5 Association Between Demographic Variables and Level of Knowledge in Pre-Test Among Participants

Table 2: Association between Level of Knowledge on Prevention of Candidiasis and Demographic Variables in the Pre-Test among Adolescents

Demographic variables	Level of knowledge in pre-test				Chi-square value and p value
	Inadequate knowledge		Moderate knowledge		
	No.	%	No.	%	
1. Age					$\chi^2 = 2.025$ d.f = 2 p= 0.363 (N.S)
a. 17 years	2	16.7	10	83.3	
b. 18 years	1	3.6	27	96.4	
c. 19 years	1	10.0	9	90.0	
2. Mother Education					$\chi^2 = 0.181$ d.f = 2 p= 0.913 (N.S)
b. Professional	0	0.0	2	100.0	
c. 1 – 8th Std	3	8.3	33	91.7	
d. 9 – 12th Std	1	8.3	11	91.7	
3. Types of Family					$\chi^2 = 1.696$ d.f = 1 p= 0.193 (N.S)
a. Nuclear					
b. Joint	1	3.6	27	96.4	
	3	13.6	19	86.4	
4. Father's Education					**$\chi^2 = 6.267$ d.f = 2 p= 0.044 ***
a. Self-employment					
b. Unskilled worker	0	0.0	16	100.0	
c. Skilled worker	1	50.0	1	50.0	
	3	9.4	29	90.6	
5. Hostel in year					$\chi^2 = 0.653$ d.f = 2 p= 0.721 (N.S)
a. <2 years	1	5.6	17	94.4	
b. < 3 years	1	6.3	15	93.8	
c. 4 years	2	12.5	14	87.5	

6. Source of Information					
a. School health program	1	4.5	21	95.5	$\chi^2 = 2.384$
b. Mass media	0	0.0	8	100.0	df = 2
c. Parents	3	15.0	17	85.0	p= 0.304 (N.S)

Table 2 summarizes the relationship between demographic factors and adolescents' knowledge of candidiasis prevention was examined using chi-square tests. Age, mother's education, family type, hostel stay, and information source showed no significant association with knowledge levels ($p > 0.05$). However, father's education demonstrated a significant association ($\chi^2 = 6.267$, d.f. = 2, $p = 0.044$). Adolescents with skilled worker fathers (90.6%) exhibited higher moderate knowledge compared to those with unskilled worker fathers (50%). This suggests paternal education and occupation significantly influence adolescents' awareness, while other demographic factors have no notable effect.

4. Discussion

The results of this study offer important insights into adolescent knowledge and practices concerning the prevention of candidiasis, particularly in the context of structured educational interventions. The initial findings revealed that the majority of participants displayed only moderately adequate awareness about candidiasis prevention, with a notable absence of highly knowledgeable individuals prior to intervention [11]. This underscores a critical gap in health education among adolescents and highlights the necessity of targeted programs in academic settings to address infectious disease prevention [6].

Following the implementation of a structured teaching program, there was a statistically significant improvement in knowledge scores. The marked increase in mean scores and a highly significant p-value ($p < 0.001$) suggests that such interventions are effective in enhancing health literacy regarding candidiasis. This aligns with prior research indicating that educational outreach can substantially improve disease prevention behaviors among youth. Interestingly, while various demographic factors such as age, mothers' education, type of family, duration of hostel stay, and sources of health information did not significantly influence knowledge outcomes, paternal education—specifically, the father's occupation as a skilled worker—was positively associated with moderate adolescent awareness [12]. This finding points to the nuanced role of family socioeconomic status and parental occupation, hinting that health education strategies may benefit from parental engagement and socioeconomic sensitivity.

The absence of significant associations for most demographic variables also suggests that broad, institution-based interventions may be necessary to reach all adolescents, regardless of background [13]. The results ultimately affirm the effectiveness and necessity of structured educational initiatives in bridging health knowledge gaps. However, further research should explore long-term retention of knowledge, the translation of awareness into preventive

behaviors, and the integration of parental roles in adolescent health education for more sustainable change.

5. Conclusion

This study demonstrates the significant effectiveness of a structured teaching program in enhancing knowledge about vulvovaginal candidiasis prevention among adolescent girls residing in a nursing college hostel. Prior to the intervention, most participants had only moderate awareness, with no one exhibiting adequate knowledge. Following the educational program, there was a statistically significant improvement in their understanding and preventive practices, confirming the value of targeted health education initiatives.

The findings also highlight the influential role of paternal education, particularly skilled occupational status, on adolescent knowledge levels, suggesting that family socioeconomic factors should be considered when designing health interventions. Other demographic factors did not show significant association with knowledge outcomes, underscoring the need for broad, inclusive educational programs in institutional settings to ensure equitable health literacy.

Overall, structured educational interventions are critical for empowering adolescents with essential reproductive health knowledge, reducing stigma, and promoting proactive health behaviors. Further research should investigate long-term knowledge retention and behavioral change, as well as strategies to involve parents for sustained impact.

Author contributions

AK and JB were involved in the conceptualization of the study. AK contributed to data management and analysis for the study and drafted the manuscript. JB reviewed the manuscript and provided suggestions. All authors have read and approved the final manuscript.

Ethical statement

The Institutional Research Advisory Committee members certify that the research project entitled "A Study To Assess The Effectiveness Of Structured Teaching Programme On Prevention Of Vulvovaginal Candidiasis Among B.Sc Nursing Students, Residing At Shenbagha College Of Nursing Hostel, Chennai." is a bonafide work done by Ms. ARPITA KABIRAJ, Associate Professor, OBG Department, Shenbagha College of Nursing on 29.11.2023. The Research Advisory Committee approved the project and the progress will be reviewed periodically. This approval is valid for three years.

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Conflict of interest: All authors confirm that they do not have any conflicts of interest to disclose.

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