Effectiveness of a Planned Teaching Programme on Knowledge of Psychosocial Problems related to Menstrual Abnormalities among Adolescent Girls in selected High schools at Bangalore

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ABSTRACT

Adolescent girls often face psychosocial problems related to menstrual abnormalities, which can negatively affect their health and well-being. Lack of knowledge and awareness may worsen these issues. This study is aimed at evaluating the effectiveness of a planned teaching programme on knowledge regarding psychosocial problems due to menstrual abnormalities among adolescent girls in selected high schools at Bangalore. Conceptual framework described by Polit and Hungler with pre-test and post-test was adopted. A total of 60 adolescent girls were selected using purposive sampling technique. Data were collected using a structured knowledge questionnaire before and after the planned teaching programme. The results showed a significant improvement in post-test knowledge scores compared to pre-test scores($p < 0.05$). These findings indicate that the planned teaching programme was effective in enhancing knowledge of adolescent girls about psychosocial problems associated with menstrual abnormalities. The study recommends integrating such teaching programmes into school health education to promote adolescent well-being.

I. INTRODUCTION

Adolescence is a crucial developmental stage marked by physical and psychosocial changes, with menstruation being a key milestone. Menstrual abnormalities are highly prevalent among adolescent girls [1–6] and can have far-reaching effects beyond physical discomfort [7–10]. Abnormalities such as irregular cycles, excessive bleeding, and dysmenorrhea are common during this period and often lead to psychosocial problems including stress, anxiety, low self-esteem, social withdrawal, and poor academic performance. Cultural taboos and lack of awareness further worsen these challenges, leaving many girls without adequate guidance or support. These issues, if unaddressed, may hinder educational achievement, emotional well-being, and long-term reproductive health.

Despite the seriousness of the problem, menstruation remains a socially sensitive topic, surrounded by stigma and misconceptions [11–14]. Many adolescent girls lack proper knowledge and support systems to manage menstrual abnormalities effectively [15, 16]. Addressing this gap through structured health education is crucial, as it not only enhances knowledge but also empowers girls to cope with psychosocial challenges in healthier ways.

Several studies have examined the prevalence, psychosocial consequences, and educational impacts of menstrual abnormalities among adolescent girls. For instance, menstrual abnormalities are linked with absenteeism and psychosocial issues. In Bangalore, Krishnaiah et al. (2023) [17] reported that around 30 percentage of girls experienced school absenteeism during menstruation, primarily due to pain, shame, and lack of hygiene facilities. In Chennai, a cross-sectional study [18] found that 67 percentage of girls reported psychosocial problems such as stress, mood changes, and irritability during menstruation, highlighting the importance of menstrual health education. In Tamil Nadu, research [19] among 350 adolescent girls revealed that 87.7 percentage experienced at least one menstrual problem, with 78.5 percentage unable to attend school and 51.1 percentage unable to engage in sports or household activities. Intervention studies suggest that educational programmes offer significant benefits: a quasi-experimental study [20] in Mysore showed that health education raised the proportion of girls with good menstrual knowledge from 62.9 percentage to 95.2 percentage, indicating a strong impact. In urban Bengaluru slums, a cross-sectional survey [21] revealed that 68 percentage of girls had good menstrual health knowledge, yet only 37.3 percentage sought treatment for irregular or excessive bleeding, underlining gaps in healthcare-seeking behavior despite awareness. Evidence also shows that educational programmes significantly improve knowledge and practices. A structured teaching programme in Punjab reported

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substantial gains in menstrual hygiene awareness among schoolgirls [22]. Comprehensive interventions combining interactive teaching, handbooks, and demonstrations were even more effective, with one study [23] reporting an 88.8 percentage improvement in menstrual health knowledge (Sharma et al, 2024).

Despite these promising findings, many adolescent girls continue to face challenges, particularly in psychosocial adjustment to menstrual abnormalities. School-based health education is an effective strategy to address these issues. In this regard, a structured and well-planned teaching programme can play a vital role in early awareness: it improves knowledge, dispels misconceptions, and helps adolescent girls cope better with psychosocial problems associated with menstrual abnormalities. The present study was designed to evaluate the effectiveness of such a planned teaching programme in enhancing adolescent girls' knowledge of psychosocial problems associated with menstrual abnormalities in selected high schools in Bangalore. By focusing on education within the school environment, this research highlights the role of structured teaching as a preventive strategy to promote menstrual well-being and psychosocial health among adolescent girls. The main contributions of this paper are:

- Context-specific evidence: It provides empirical data from high schools in Bangalore, where limited studies have been conducted on this issue.
- Focus on psychosocial problems: Unlike many earlier studies that concentrated primarily on menstrual hygiene or biological aspects, this research emphasizes psychosocial challenges linked to menstrual abnormalities.
- Educational intervention assessment: It evaluates the impact of a structured, school-based teaching programme, highlighting its effectiveness in enhancing knowledge and potentially reducing stigma and misconceptions.
- Policy and practice relevance: Findings can inform school health initiatives, curriculum design, and adolescent health programmes to better support girls during menstruation.

Hence, by addressing both the biological and psychosocial dimensions, this novel study seeks to fill a gap in school health education research where psychosocial outcomes are often overlooked. In the following sections, we first build a theoretical framework for our problem, then establish a research methodology, and finally present and discuss our findings.

II. THEORETICAL FRAMEWORK

This study is based on the conceptual framework described by Polit and Hungler (1999) [24], which emphasizes the relationship between independent and dependent variables in nursing research. According to their model, research begins with identifying key concepts, followed by establishing the relationships between independent and dependent variables to guide systematic inquiry.

By applying Polit and Hungler's framework, the study ensured clarity in variable identification, logical flow in hypothesis testing, and a structured approach to evaluating the effectiveness of the intervention. This theoretical grounding not only guided the methodology but also provided a robust basis for interpreting findings within the broader field of nursing research.

In the present study, the **independent** variable is the planned teaching programme on psychosocial problems due to menstrual abnormalities, while the **dependent** variable is the knowledge level of adolescent girls regarding these psychosocial problems.

The framework assumes that structured health education serves as an intervention that can positively influence knowledge levels. Improved knowledge, in turn, is expected to correct misconceptions, promote awareness, and support better coping with psychosocial challenges surrounding menstruation.

Thus, the framework provides a logical basis for assessing the effectiveness of the teaching programme in enhancing adolescent girls' knowledge related to psychosocial problems caused by menstrual abnormalities.

III. METHODOLOGY

An evaluative research approach was employed, as the study aimed to assess the effectiveness of a planned teaching programme on knowledge regarding psychosocial problems due to menstrual abnormalities among adolescent girls.

This study adopted a pre-experimental one-group pre-test post-test design within an evaluative research framework. The design enabled measurement of knowledge levels among adolescent girls before

and after the implementation of a Planned Teaching Programme (PTP) on psychosocial problems associated with menstrual abnormalities. This design was considered appropriate to evaluate the effectiveness of the intervention.

Figure 1: Schematic representation of the research design

In this schematic, O1 represents **Pre-test**: administration of a questionnaire to the adolescent girls on Day 1, X represents a **Planned teaching Programme**: Administration of planned teaching module on knowledge regarding psychosocial problems due to menstrual abnormalities to the adolescent girls on Day 1, and O2 represents **Post-test**: Administration of self administered questionnaire to the adolescent girls on Day 7, after administration of the planned teaching programme.

The study was conducted in selected high schools in Bangalore. The target population comprised of adolescent girls studying in these selected high schools. The accessible population included those available during the period of data collection.

In our study, we had a sample size of 60 (adolescent girls). We adopted non-probability purposive sampling technique. The inclusion criteria for this study were adolescent girls willing to participate, available during data collection, and able to understand English or Kannada. Whereas, the exclusion criteria comprised of girls unwilling to participate, previously exposed to similar teaching modules, with medical emergencies, or absent during the days of data collection.

We used a structured knowledge questionnaire which was developed after literature review, expert consultation, and pilot testing, as the tool for data collection. This tool comprised of the following parts: Part I: Demographic data (5 items), Part II: Knowledge questionnaire (30 multiple-choice items) covering: 1. General information and menstruation, 2. Menstrual hygiene, 3. Menstrual abnormalities, 4. Psychosocial problems, 5. Coping strategies, 6. Health education and awareness. Each correct response scored 1 point; maximum score = 30. Scores were interpreted as: Inadequate (<50 %), Moderate (50–75 %) and Adequate (>75 %). Content validity was established by seven different experts. Reliability was confirmed through split-half method using Spearman Brown Prophesy formula. The reliability coefficient of the tool was found to be 0.82. The pilot study was conducted in selected hospitals at Bangalore to assess the feasibility and practicability of the design.

The planned teaching programme (60 minutes) was delivered using lecture-cum-discussion with audiovisual aids (charts, flashcards, flip charts).

The data collection procedure was as follows:

Day 1: Pre-test questionnaire administered, followed by intervention. Day 7: Post-test conducted using the same questionnaire.

Data were analyzed using descriptive and inferential statistics. Frequencies and percentages were used for demographic variables. The mean, median and standard deviation for the knowledge scores were calculated. The effectiveness of the intervention was tested using a paired t-test ($p < 0.05$). Association between post-test knowledge and demographic variables was tested using Chi-square. Moreover, for this study approval was obtained from the institutional ethical committee and school authorities. Informed consent was secured from participants, and confidentiality and anonymity were strictly maintained.

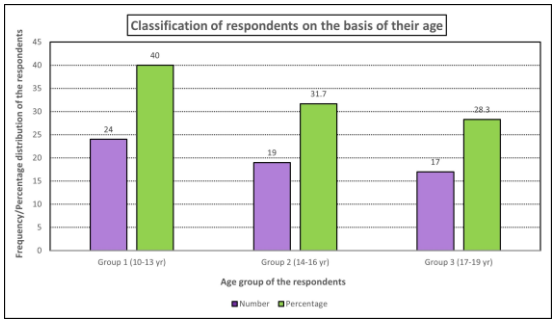
IV. RESULTS

This section deals with the analysis and interpretation of the data collected from 60 adolescent girls in selected high schools of Bangalore to assess the effectiveness of a planned teaching programme on knowledge regarding psychosocial problems due to menstrual abnormalities. The result of study was computed using descriptive and inferential statistics based on the following objectives of the study: (i) To assess the level of pre-test and post-test knowledge of psychosocial problems among adolescent girls with menstrual abnormalities, (ii) To evaluate the effectiveness of a planned teaching programme on knowledge of psychosocial problems among adolescent girls by comparing pre-test and post-test knowledge scores, and (iii) To find out the association between post-test knowledge scores of psychosocial problems among adolescent girls due to menstrual abnormalities with their selected socio- demographic variables.

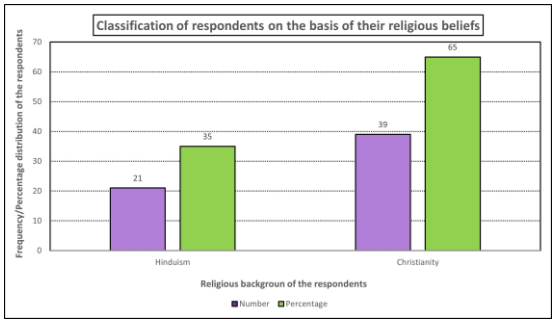
The obtained data was then entered into the master sheet for tabulation and statistical processing. This analysed data has been organized and presented under the following subsections:

A. Demographic Characteristics of Respondents

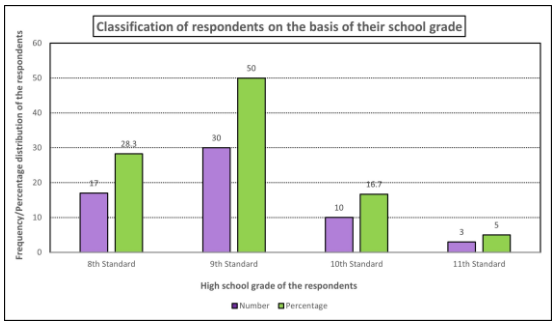
In this study, the socio-demographic variables are described in terms of the respondents' age, religion, grade, parents' education level, and previous exposure to any information. The respondents, i.e., 60 adolescent girls were classified on the basis of these socio-demographic variables.



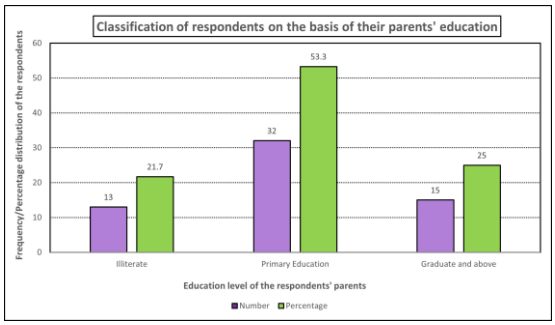
(a) Plot illustrating the frequency and percentage distribution of respondents on the basis of their distinctive age groups



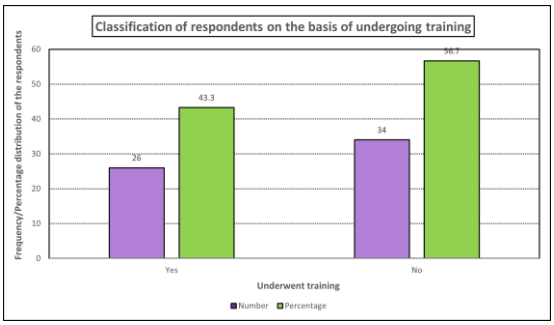
(b) Plot illustrating the frequency and percentage distribution of respondents on the basis of their religious beliefs



(c) Plot illustrating the frequency and percentage distribution of respondents on the basis of their respective high school grades



(d) Plot illustrating the frequency and percentage distribution of respondents on the basis of the education level of their parents



(e) Plot illustrating the frequency and percentage distribution of respondents on the basis of undergoing training on psychosocial problems owing to menstrual abnormalities

Figure 2: Plots describing various socio-demographic characteristics of 60 adolescent girls in selected high schools of Bangalore, Karnataka, India

The above plots highlight the fact that the 60 adolescent girls belonged to a wide variety of socio-demographic backgrounds, thus enabling our study to improve representativeness, increase generalisability, capture diversity of perspectives, reduce bias that might arise out of homogeneous samples, and also enable sub-group analysis. The corresponding data for these plots are provided in Appendix Section A.

B. Pre-test knowledge of the respondents

The respondents (60 adolescent girls) were further classified under the following three sub-groups on the basis of their pre-test knowledge level on psychosocial problems due to menstrual abnormalities:

(i) Inadequate pre-test knowledge (< 50% of maximum obtainable test score), (ii) Moderate pre-test knowledge (50% – 75% of maximum obtainable test score), and (iii) Adequate pre-test knowledge (>75% of maximum obtainable test score).

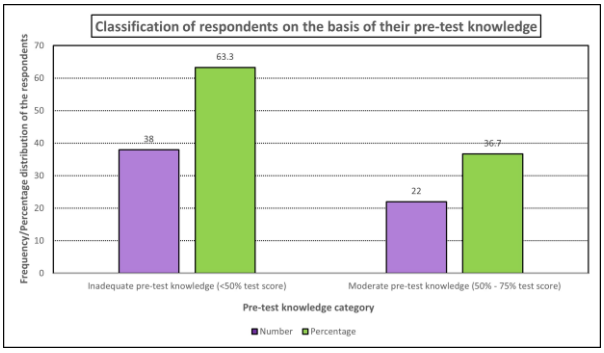


Figure 3: Plot describing the pre-test knowledge level of 60 adolescent girls on psychosocial problems due to menstrual abnormalities

The above plot reveals the fact that 63.3% of adolescent girls had inadequate knowledge, while 36.7% of adolescent girls had moderate knowledge and no girls (0%) had adequate knowledge during the pre-test on psychosocial problems due to menstrual abnormalities. These findings highlight the need of a planned teaching programme in order to educate adolescent girls about menstrual abnormalities and related psychosocial problems.

C. Post-test knowledge of the respondents

After educating the respondents about psychosocial problems due to menstrual abnormalities, a similar survey was performed in order to ascertain the success of the teaching programme on improving the respondents' menstrual healthcare knowledge. Following this survey, the 60 adolescent girls were again classified under the aforementioned three sub-groups on the basis of their post-test knowledge level. The findings are highlighted in the following plot:

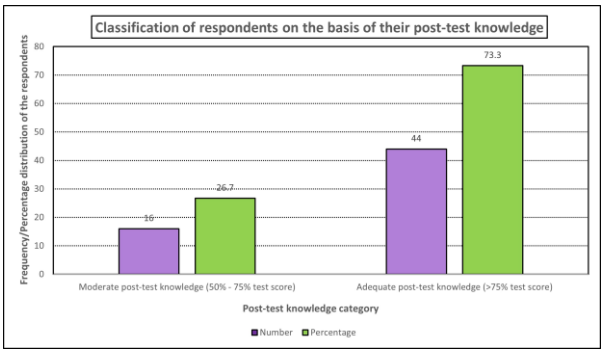


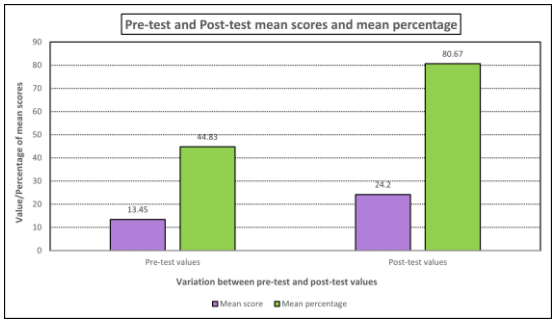
Figure 4: Plot describing the post-test knowledge level of 60 adolescent girls on psychosocial problems due to menstrual abnormalities

The above plot reveals a significant increase in menstrual healthcare knowledge among adolescent girls following the teaching programme. In the post-test survey, 26.7% of the adolescent girls had moderate knowledge and 73.3% of them had adequate knowledge on psychosocial problems due to menstrual abnormalities. On the other hand, in the post-test survey none of the girls had inadequate knowledge, which is in stark contrast to the results obtained in the pre-test survey.

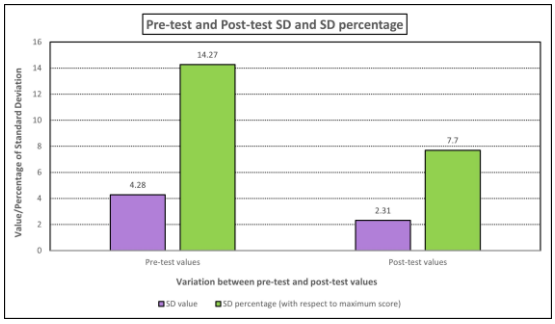
D. Statistics of the pre-test and post-test knowledge scores

From the data obtained in this study, the mean, standard deviation, mean percentage and standard deviation percentage (relative to the maximum score) of the scores obtained in the pre-test and the

post-test surveys were calculated. The findings have been presented in the following plots:



(a) Plot illustrating the mean value and mean percentage of the pre-test and post-test scores



(b) Plot illustrating the SD value and SD percentage of the pre-test and post-test scores

Figure 5: Plots describing the variation of different statistical parameters between the pre-test and post-test scores

From Fig. 5a, it is evident that the mean knowledge level of the respondents has significantly improved following a planned teaching programme on psychosocial problems due to menstrual abnormalities. Whereas Fig. 5b shows a decrease in both Standard Deviation and Standard Deviation percentage in the post-test scores. This suggests that the scores became more consistent or uniform after the intervention. The planned teaching programme had a standardizing or equalizing effect: not only did the respondents improve, but they did so more evenly. Further, the enhancement of mean and Standard Deviation and the paired t test value were calculated and tabulated as follows:

Aspects	**Maximum Score**	**Mean**	**SD**	**Mean (%)**	**SD (%)**	**Paired t-test value**	**Critical t-test value**
Pre-test	30	13.45	4.28	44.83%	14.27%	**19.02***	**1.96**
Post-test	30	24.20	2.31	80.67%	7.70%		
Enhancement	30	10.75	–1.97	35.84%	–6.57%		

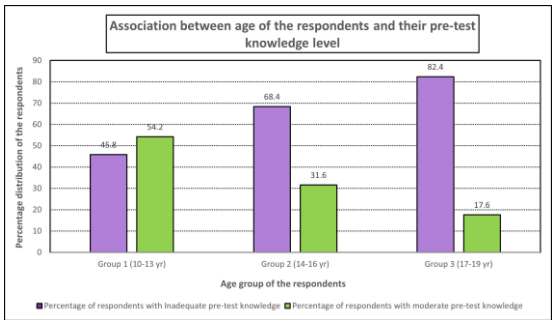
* Significant at 5% level; $r = 0.23$.

Table I: Comparison of the overall pre-test and post-test mean knowledge scores related to psychosocial problems due to menstrual abnormalities

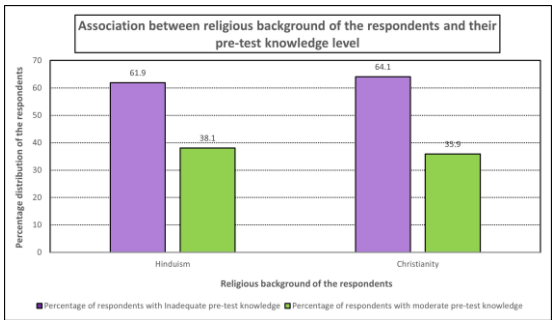
While calculating the paired t test value, the correlation factor r between the pre-test and post-test values was taken to be 0.23 since the pre- and post-test scores are weakly correlated. The mean score before the intervention was 13.45 (44.83%), while the post-test mean increased to 24.20 (80.67%). This indicates a 35.84% enhancement in mean percentage following the intervention. The paired t test yielded a value of 19.02 (which is much bigger than the critical value of 1.96), demonstrating a statistically significant increase in knowledge at $p < 0.05$. These results highlight the effectiveness of the planned teaching programme in enhancing the adolescent girls' understanding of psychosocial problems due to menstrual abnormalities.

E. Association between demographic variables and pre-test knowledge level

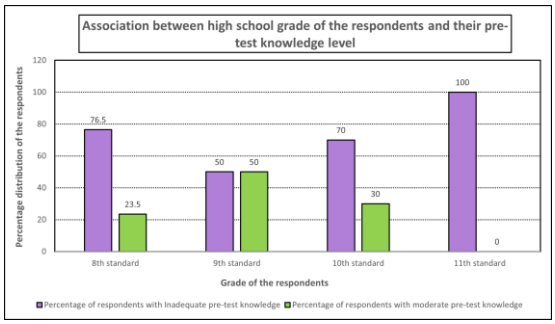
The 60 adolescent girls chosen for this study belonged to a wide variety of socio-demographic backgrounds. Naturally one would expect an association between the different socio-demographic variables and the respondents' pre-test knowledge level on psychosocial problems due to menstrual abnormalities. This requires a careful statistical analysis on the data so as to determine if any such association actually exists. The following plots highlight the association between the aforementioned socio-demographic variables and the pre-test knowledge level of the adolescent girls.



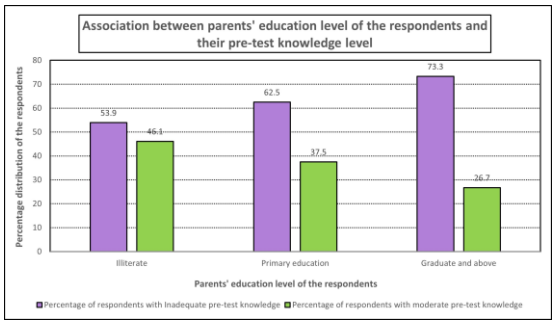
(a) Plot illustrating the association between the different age groups of the respondents and their pre-test knowledge level



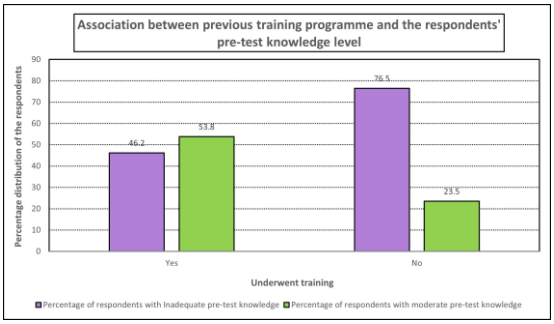
(b) Plot illustrating the association between the religious background of the respondents and their pre-test knowledge level



(c) Plot illustrating the association between the high school grade of the respondents and their pre-test knowledge level



(d) Plot illustrating the association between the education level of the respondents' parents and their pre-test knowledge level



(e) Plot illustrating the association between training programme on psychosocial problems due to menstrual abnormalities and the respondents' pre-test knowledge level

Figure 6: Plots describing the association between various socio-demographic characteristics of 60 adolescent girls and their pre-test knowledge level

From Fig. 6a, there appears to exist some correlation between the age group of the respondents and their pre-test knowledge level (since the percentage of respondents with inadequate pre-test knowledge increases with an increase in their age). Similarly from Fig. 6e, it appears that students who had underwent previous training programme on menstrual healthcare had a better pre-test knowledge level as compared to the ones who lacked previous training. Moreover, it appears from Fig. 6d that respondents' parents education level had an impact on their pre-test knowledge since the percentage of the girls with moderate pre-test knowledge rises with an increase in their parent's education level. But, this is non conclusive without further statistical analysis. On the other hand, no conclusion can be drawn from Fig. 6c about the association between the student's high school grade and their pre-test knowledge level. Finally, from Fig. 6b, it appears that respondents belonging to Hinduism had more pre-test knowledge than their Christian counterparts. However, we need more statistical evidence before reaching to a conclusion.

In the following table, we have calculated the χ^2 value for each demographic variable in order to find out if the association between that variable and the girls' pre-test knowledge level is indeed statistically significant.

Demographic Variables	Category	Sample (n)	Inadequate		Moderate		χ^2 Value	Critical χ^2 (at 5%)
			Number (N)	%	Number (N)	%		
Age group (years)	Group 1 (10–13)	24	11	45.8	13	54.2	6.03 (S)	5.991
	Group 2 (14–16)	19	13	68.4	6	31.6		
	Group 3 (17–19)	17	14	82.4	3	17.6		
Religion	Hinduism	21	13	61.9	8	38.1	0.03 (NS)	3.841
	Christianity	39	25	64.1	14	35.9		
Grade	8th	17	13	76.5	4	23.5	5.49 (NS)	7.815
	9th	30	15	50.0	15	50.0		
	10th	10	7	70.0	3	30.0		
	11th	3	3	100.0	0	0.0		
Parents' education	Graduate and above	15	11	73.3	4	26.7	1.16 (NS)	5.991
	Primary education	32	20	62.5	12	37.5		
	Illiterate	13	7	53.9	6	46.1		
Training Programme	Yes	26	12	46.2	14	53.8	5.83 (S)	3.841
	No	34	26	76.5	8	23.5		
Combined		60	38	63.3	22	36.7	–	–

Table II: Association between the various socio-demographic variables and pre-test knowledge levels of the respondents. (*NS = Not significant and *S= significant at 5% level).

Among the 60 participants, 24 adolescent girls were aged 10 – 13 years, with 13 (54.2%) showing moderate knowledge and 11 (45.8%) having inadequate knowledge. In the 14 – 16 years age group (19 girls), 6 (31.6%) had moderate knowledge while 13 (68.4%) demonstrated inadequate knowledge. For those aged 17 – 19 years (17 girls), only 3 (17.6%) had moderate knowledge, and 14 (82.4%) showed inadequate knowledge. The χ^2 value obtained was 6.03, which is above the critical value of 5.991 at $p < 0.05$, indicating a statistically significant association between age group of the respondents and their pre-test knowledge.

Similarly, among the 60 participants, 21 girls practiced Hinduism, with 8 (38.1%) showing moderate knowledge and 13 (61.9%) having inadequate knowledge. In the Christianity group (39 girls), 14 (35.9%) had moderate knowledge while 25 (64.1%) demonstrated inadequate knowledge. The χ^2 value obtained was 0.03, which is below the critical value of 3.841 at $p < 0.05$, indicating no statistically significant association between religion of the respondents and their pre-test knowledge.

A similar analysis of the relationship between the pre-test knowledge scores of adolescent girls and their academic grade can be made: among the participants, 17 girls were in 8th grade, with 4 (23.5%) showing moderate knowledge and 13 (76.5%) having inadequate knowledge. In the 9th grade group (30 girls), 15 (50%) had moderate knowledge while 15 (50%) demonstrated inadequate knowledge. For 10th grade (10 girls), 3 (30%) had moderate knowledge and 7 (70%) showed inadequate knowledge. In the 11th grade (3 girls), none had moderate knowledge while all 3 (100%) showed inadequate knowledge. The χ^2 value was 5.49, which is below the critical value of 7.815 at $p < 0.05$, indicating no statistically significant association between the girls' grade levels and their pre-test knowledge.

Likewise, among the 60 participants, 15 girls had parents with graduate and higher level of education, with 4 (26.7%) showing moderate knowledge and 11 (73.3%) having inadequate knowledge. In the primary education group (32 girls), 12 (37.5%) had moderate knowledge while 20 (62.5%) demonstrated inadequate knowledge. For the girls with illiterate parents (13 girls), 6 (46.1%) had moderate knowledge and 7 (53.9%) showed inadequate knowledge. The χ^2 value was 1.16, which is below the critical value of 5.991 at $p < 0.05$, indicating no statistically significant association between the respondents' parents' education level and their pre-test knowledge (although the plot in Fig. 6d suggested otherwise).

Finally, let us analyse the relationship between the pre-test knowledge level of the adolescent girls and their previous participation in a training programme: Among the 60 participants, 26 girls had undergone previous training programmes, with 14 (53.8%) showing moderate knowledge and 12 (46.2%) having inadequate knowledge. Whereas, in the non-trained group (34 girls), 8 (23.5%) had moderate knowledge while 26 (76.5%) demonstrated inadequate knowledge. The χ^2 value was 5.83, which is well above the critical value of 3.841 at $p < 0.05$, indicating a strong statistical association between the respondents' previous participation in training programme and their pre-test knowledge level.

V. DISCUSSION

This study assessed the effectiveness of a planned teaching programme on knowledge regarding psychosocial problems due to menstrual abnormalities among adolescent girls in selected high schools of Bangalore. The findings revealed that prior to the intervention, the majority of participants (63.3%) had inadequate knowledge, while only 36.7% demonstrated moderate knowledge. Following the programme, 73.3% of the participants attained adequate knowledge and 26.7% showed moderate knowledge, with the mean score improving significantly from 13.45 (SD = 4.28) in the pre-test to 24.2 (SD = 2.31) in the post-test (t = 19.02, $p < 0.05$). These results clearly establish the effectiveness of structured educational interventions in improving awareness among adolescent girls about menstrual well-being.

The findings align with those of Santhanakrishnan *et al* (2018) [25], who reported significant gains in menstrual health knowledge following health education interventions, and with Thakre *et al* (2020) [26] and Shailini *et al* (2023) [27] , who observed that structured programmes reduced misconceptions and improved coping strategies regarding menstrual healthcare. Similarly, Sadiq and Salih (2013) [28] emphasized that inadequate menstrual knowledge is strongly associated with psychosocial distress, highlighting the importance of health education in this domain.

The present study also noted significant associations between knowledge level of the respondents on menstrual health and selected demographic variables, particularly their prior exposure to training programmes. This is consistent with previous reports that adolescents with prior educational input demonstrate higher baseline awareness (Patel *et al*, 2021 [29]). Moreover, it was noticed that younger respondents (10-13 years) had a better prior knowledge level suggesting their better engagement/receptivity: they may be more attentive, curious, or open to learning about menstrual health than older girls who might have been exposed earlier to knowledge regarding menstrual well-being but that was not reinforced on them. However, no associations were found with other socio-demographic factors, such as high school grade, religion or parents' educational level of the respondents, which may be due to the homogeneity of the sample.

Overall, the results indicate that adolescent girls benefit substantially from structured teaching interventions, which can bridge knowledge gaps, reduce stigma, and promote positive psychosocial outcomes. These findings hold practical implications for school health programmes, suggesting that nurses and educators should integrate menstrual health education into routine school-based health promotion activities. However, the study's limitations include its small sample size, purposive sampling, and short-term evaluation of knowledge retention, which may limit generalizability. Future research with larger, more diverse populations and longitudinal follow-up is recommended to examine the sustained impact of such interventions on both knowledge and behavioral outcomes.

VI. CONCLUSION AND IMPLICATIONS

This study demonstrated that adolescent girls had inadequate baseline knowledge regarding psychosocial problems related to menstrual abnormalities, which improved significantly following the planned teaching programme. The intervention proved effective in enhancing awareness, highlighting the importance of structured health education in school settings. Findings suggest that regular counseling and educational initiatives are essential to address psychosocial issues associated with menstruation and to promote adolescent well-being. Moreover, the post-intervention scores of the respondents improved significantly, irrespective of their different socio-demographic backgrounds, suggesting that a planned teaching programme on menstrual healthcare can cause awareness among the adolescent girls belonging to different sections of the society and may help dispel the social dogma surrounding menstruation.

While the results are promising, limitations such as small sample size, purposive sampling, absence of a control group, and lack of follow-up surveys restrict the generalizability of our findings. Future research should adopt larger experimental designs with longitudinal follow-up to evaluate sustained impact.

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REFERENCES

[1] P. Negi, A. Mishra, and P. Lakhera, Journal of family medicine and primary care **7**, 804 (2018).
[2] S. R. Rajiwade, H. Sagili, R. Soundravally, and L. Subitha, The Journal of Obstetrics and Gynecology of India **68**, 58 (2018).
[3] P. Sharma, C. Malhotra, D. Taneja, and R. Saha, The Indian Journal of Pediatrics **75**, 125 (2008).
[4] G. B. Slap, Best practice & research Clinical obstetrics & gynaecology **17**, 75 (2003).
[5] M. A. Jamieson, Pediatric Clinics **62**, 943 (2015).
[6] J. S. Montoya, A. H. Cabezza, O. M. Rojas, R. C. Navarrete, and M. Keever, Bol Med Hosp Infant Mex **69**, 60 (2012).
[7] N. Jha, A. S. Bhadoria, Y. Bahurupi, K. Gawande, B. Jain, J. Chaturvedi, and S. Kishore, Journal of Education and Health Promotion **9**, 313 (2020).
[8] K. C. van Iersel, J. Kiesner, M. Pastore, and R. H. Scholte, Journal of Adolescence **49**, 81 (2016).
[9] A. C. R. Pitangui, M. R. d. A. Gomes, A. S. Lima, P. A. Schwingel, A. P. d. S. Albuquerque, and R. C. de Araújo, Journal of pediatric and adolescent gynecology **26**, 148 (2013).
[10] M. Yu, K. Han, and G. E. Nam, Journal of affective disorders **210**, 43 (2017).
[11] N. Rizvi and T. S. Ali, Journal of Asian Midwives (JAM) **3**, 46 (2016).
[12] R. Patil, L. Agarwal, M. I. Khan, S. K. Gupta, D. Vedapriya, M. Raghavia, and A. Mittal, Indian Journal of Medical Specialties **2**, 23 (2011).
[13] N. Sahay, J Womens Health Dev **3**, 154 (2020).
[14] S. Deepa, T. Agrawal, T. Attokaran, F. N. Fathima, and A. R. Johnson, International Journal of Community Medicine and Public Health **6**, 1126 (2019).
[15] V. Chothe, J. Khubchandani, D. Seabert, M. Asalkar, S. Rakshe, A. Firke, I. Midha, and R. Simmons, Health promotion practice **15**, 319 (2014).
[16] R. Abraham, M. P. Rajan, A. John, *et al.*, Indian Journal of Public Health Research & Development **14**, 399 (2023).
[17] B. Krishnaiah, S. Reddy, and P. Rao, Indian Journal of Community Health **35**, 250 (2023).
[18] T. Sundari, A. J. George, and E. Sinu, Journal of mental health education **3**, 47 (2022).
[19] R. Ravi, P. B. Shah, S. Edward, P. Gopal, and B. Sathiyasekaran, International journal of adolescent medicine and health **30** (2018).
[20] A. Lonimath, K. Ravish, S. RanganathT, *et al.*, RGUHS National Journal of Public Health **2** (2017).
[21] M. HS, R. TS, *et al.*, (2019).
[22] H. Kaur and N. Sharma, International Journal of Nursing Education **15**, 112 (2023).
[23] R. Sharma and A. Dutta, International Journal of Adolescent Health **36**, 45 (2024).
[24] D. F. Polit, B. P. Hungler, and B. P. Hungler, *Study guide to accompany nursing research: Principles and methods* (Lippincott Williams & Wilkins, 1998).
[25] I. Santhanakrishnan and V. Athipathy, International Journal of Medical Science and Public Health **7**, 468 (2018).
[26] S. Thakre, S. Thakre, M. Reddy, N. Rathi, K. Pathak, and S. Ughade, J Clin Diagn Res **5** (2010).
[27] M. Shalini, M. Parashram, and I. Vairagi, International Journal of Advanced Research in Science, Communication and Technology , 426 (2023).
[28] M. Sadiq, Journal of General Practice **02** (2013).
[29] P. Patel, T. Puwar, N. Shah, D. Saxena, P. Trivedi, K. Patel, S. Yasobant, M. Fancy, H. Matela, S. Savaliya, P. Kalpana, and R. Rana, Indian Journal of Community Medicine **43**, 12 (2018).

Appendix A: Data obtained during the study

Data related to the demographic characteristics of the respondents

We have adopted the following index: Age: 1: 10-13 years, 2: 14-16 years, 3: 17-19 years; Religion: 1: Hinduism, 2: Christianity ; School grade: 1: 8th standard, 2: 9th standard, 3: 10th standard, 4:11th standard; Parents' education level: 1: illiterate, 2: primary, 3: graduate and above; Underwent Training: 1: Yes, 2: No.

Student ID	Age Group	Religion	Standard	Parents Education	Underwent Training
1	1	1	1	1	1
2	1	1	1	1	1
3	1	1	1	1	1
4	1	1	1	1	1
5	1	1	1	1	1
6	1	1	1	1	1
7	1	1	2	1	1
8	1	1	2	1	1
9	1	1	2	2	1
10	1	1	1	1	1
11	1	1	2	2	1
12	1	1	1	1	1
13	1	1	1	1	1
14	1	1	1	1	1
15	1	1	1	1	1
16	1	1	1	2	1
17	1	1	1	2	1
18	1	2	2	2	1
19	1	1	1	2	1
20	1	2	2	2	1
21	1	1	1	2	1
22	2	1	1	2	1
23	2	1	1	2	2
24	2	2	2	2	2
25	2	2	2	2	2
26	1	2	2	2	1
27	1	2	2	2	1
28	2	2	2	2	2
29	2	2	2	2	2
30	1	2	2	2	1
31	2	2	2	2	2
32	2	2	2	2	2
33	2	2	2	2	2
34	2	2	2	2	1
35	2	2	2	2	2
36	2	2	2	2	2
37	2	2	2	2	2
38	2	2	2	2	2
39	2	2	2	2	2
40	2	2	2	2	2
41	3	2	2	2	2
42	3	2	2	2	2
43	3	2	2	2	2
44	3	2	2	3	2
45	2	2	2	2	2
46	3	2	3	3	2
47	3	2	3	3	2
48	2	2	2	2	2
49	3	2	3	3	2
50	3	2	3	3	2
51	3	2	3	3	2
52	2	2	2	3	2
53	3	2	3	3	2
54	3	2	3	3	2
55	3	2	3	3	2
56	3	2	4	3	2
57	3	2	3	3	2
58	3	2	3	3	2
59	3	2	4	3	2
60	3	2	4	3	2

Table III: Master Data sheet on student demographics