Original Article

Effectiveness of Structured Teaching Programme on Knowledge regarding Menstrual Hygiene among Adolescent Girls

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ABSTRACT

Background: Menstruation is monthly uterine bleeding for 4-5 days, regularly coming every 28 days from puberty till menopause in a woman's reproductive life. This study intended to assess the knowledge of adolescent girls regarding menstrual hygiene in selected senior secondary schools with the implementation of the structured teaching program. The study was conducted to assess the pre and post-interventional level of knowledge, evaluate the effectiveness of structured teaching programs, and determine the association between the levels of knowledge with selected demographic variables.

Method: Using a quantitative research approach. The study used a pre-experimental one-group pre and post-test design. Sixty samples were selected by using a non-probability simple random sampling technique. The Variable was adolescent girls regarding menstrual hygiene and knowledge.

Result: The results showed that in the overall knowledge level of adolescent girls regarding menstrual hygiene, in pre-test there were 37 number (61.67%) adolescent girls with inadequate knowledge, 23 number (38.33%) of adolescent girls with a moderate level of knowledge, whereas in posttest 21 number (35%) of adolescent girls had moderate knowledge, 39 numbers (65%) had adequate knowledge regarding menstrual hygiene. The posttest knowledge mean percentage was found higher (knowledge mean percentage was 76.12% with SD of 1.57 when compared with pre-test mean percentage knowledge mean percentage which was 52.04% with SD of 3.07).

Conclusion: Knowledge mean percentage enhancement was 24.08%. The statistical paired 't' test implies that the difference in the pre-test and posttest value was found statistically significant at 5% level ($p<0.05$) with a paired 't' test value of 14.27. The study's overall findings showed that the structured teaching programme significantly improved adolescent girls' knowledge score regarding menstrual hygiene.

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Introduction

"How long is a girl, a child? She is a child, and then one morning, you wake up she is a woman and a dozen different people of whom you recognize none".
- Louise L'Amour

Adolescence has been recognized as a period that signifies the transition from girlhood to womanhood. Menstruation is a phenomenon unique to all females. The Age of menarche is between 10-16 years, with an average age of 13.5 years in India. Every woman has an individual cycle of menstruation. A woman gets 13 menses in a year and around 400 menses in her reproductive life (Deshpande et al., 2018; Saritha, 2016). There are 243 million adolescents comprising 20% of the total population in India, which clearly shows that India has more young people. It includes 10% of schoolgirls aged between 12 to 14 years, most of whom live in rural areas. They do not know how to care for themselves hygienically during menstruation, adversely affecting their health.[2] Menstruation is a physiological phenomenon unique to females that begin in adolescence. It is monthly uterine bleeding for 4-5 days, regularly every 28 days. Usually, females get 13 menses in a year and around 400 menses in their reproductive life. The first menstruation is termed "menarche." The Age of menarche is between 10- 16 years in India. Though menstruation is a natural and normal physiological process for all healthy adult women as ever, it has been surrounded by secrecy, negativity, and myths in much of society (Chauhan et al., 2019; Wang et al., 2018)

Menstrual education is a valid aspect of health education. Adolescent Girls constitute a valuable group, particularly in India; a female child is neglected. Menstruation is still regarded as something unclean or dirty in Indian society[4]. Lack of menstrual knowledge, poor access to sanitary products, and a non-facilitating school environment can make it difficult for girls to attend school. In India, interventions have been developed to reduce the burden of menstruation for schoolgirls and government and non-governmental organizations (NGOs) (Belayneh & Mekuriaw, 2019; Sivakami et al., 2019). A study was conducted to assess knowledge, beliefs, and source of information regarding menstruation and hygiene by using a cross-sectional study. It was carried out in an urban slum area among 100 adolescent girls. The study reported that menstrual hygiene was unsatisfactory among adolescent girls, which indicated the need for education about the facts of menstruation and proper hygienic practices (Deshpande et al., 2018; Garba et al., 2018).

The researcher viewed that girls do not wish to attend school during menstruation due to poor sanitation facilities and prefer to use homemade cloth during menstrual (Agarwal et al., 2018; Rose et al., 2022; Sharma et al., 2019). As a result, they grow up with low self-esteem and disempowerment from poor educational attainment. Due to unhygienic practices of menstrual hygiene, some complications, like cervicitis, bacterial vaginitis, fungal infections, inflammatory diseases, etc., are prevalent among females. The girls should be educated about the significance of menstruation and the development of secondary sexual characteristics, the selection of a sanitary menstrual absorbent, and its proper disposal. Hence, the researcher felt the need to assess the effectiveness of the structured teaching program on knowledge regarding menstrual hygiene, which promotes healthy practices and reduces the ill effects of infection.

Objectives this research ware To assess the pre and post-interventional level of knowledge on menstrual hygiene among adolescent girls, To compare the pre and post-interventional levels of knowledge on menstrual hygiene among adolescent girls, and To find the association between the level of knowledge on menstrual hygiene among adolescent girls with selected demographic variables. Hypothesis: H_1: Adolescent girls' posttest knowledge scores regarding menstrual hygiene will be significantly higher than pre-test knowledge scores. **H_2:** There will be a significant association between the posttest knowledge score and selected socio-demographic variables.

Methods

Using a quantitative research approach, the study used a pre-experimental one-group pre and post-test design. The study was conducted among adolescent girls from selected senior secondary schools (St. Teresa's College, Lucknow). Sixty samples were selected by using a non-probability simple random sampling technique. This conceptual study framework is based on Betty Neuman's System Model. The tool consists of a structured questionnaire consisting of two sections, Section- A: Consists of items on demographic variables about adolescent girls such as Age, standard, type of family, source of information, and menstrual status. Section B: Consists of a structured knowledge questionnaire. Each question has one correct answer among four options, and it is awarded a score of 1 for the correct response according to the pre-determined key. The investigator conducted the pilot study by selecting five samples using non -a probability convenient technique in the community area and found the feasibility, practicability, and possibility of conducting the main study during the main study conduction pre-test conducted on the very first day along with an assessment of demographic variables & knowledge questionnaire. Post-test was conducted one week after administering the structured teaching program. The investigator prepared the tool after reviewing related literature in gynecology and community health nursing textbooks and electronic sources. The tool was modified, rearranged, and tested for reliability based on the validator's suggestions. The reliability of the tool was r = 1. Hence the tool is considered highly reliable for carrying out the main study. The data obtained were analyzed by using both descriptive and inferential statistics. The research obtained ethical clearance.

Results

Table 1. Frequency and Percentage distribution according to socio-demographic variables among Adolescents Girls (N=60)

No.	Demographic Data	Category	Frequency (N)	Percentage (%)
1	Age (In Years)	a. 10-12	37	62
		b. 13-15	23	38
		c. 16-19	0	0
2	Standard	a. 5^{th} - 6^{th}	21	35
		b. 7^{th} -8^{th}	39	65
		c. 9^{th} -10^{th}	0	0
		d. 11^{th} -12^{th}	0	0
3	Type of Family	a. Nuclear	34	57

No.	Demographic Data	Category	Frequency (N)	Percentage (%)
		b. Joint	25	42
		c. Extended	1	1
4	Source of Information	a. Mother or sister	42	70
		b. Teachers	2	3
		c. Friends	7	12
		d. Mass media	9	15
5	Menstruation Status	a. Menstruated	34	57
		b. Non- Menstruated	26	43

Table 1 shows the frequency and percentage distribution of social demographic characteristics of adolescent girls. Regarding Age revealed that the majority (61.67%) of adolescent girls were in the age group of 10yr-12yr. As per the standard, the majority (65%) of adolescent girls were in the seventh-eighth standard. Regarding the type of family, most adolescent girls (56.66%) belong to the nuclear family. As per the source of information majority (70%) of adolescent girls had information given by their mothers or sister. Regarding menstrual hygiene, among 60 adolescent girls,' the majority (57%) of adolescent girls belonged to menstruated group.

Table 2. Frequency, percentage, and mean distribution of pre-interventional level of knowledge on menstrual hygiene among adolescent girls (N=60)

Knowledge Level	Scores	Frequency	Percentage %
Inadequate	0 - 13	37	61.67
Moderate	14 – 19	23	38.33
Adequate	20 – 25	0	0
TOTAL	25	60	100%

Table 3. Frequency, percentage, and mean distribution of post-interventional level of knowledge on menstrual hygiene among adolescent girls (N=60)

Knowledge Level	Scores	Frequency	Percentage %
Inadequate	0 – 13	0	0
Moderate	14 – 19	21	35
Adequate	20 – 25	39	65
TOTAL	25	60	100%

Table 4. Frequency, percentage, and mean comparison of Pre-test and Post-tests knowledge scores among adolescent girls according to the level of knowledge on menstrual hygiene. (N=60)

Aspects	Mean	Mean%	SD	Paired 't' Test	Df
Pre-Test (6 – 18)	13.01	52.04	3.07	14.27*	24
Post-Test (16 -23)	19.03	76.12	1.57		
Enhancement	6.02				

Table 5: Association between levels of knowledge on menstrual hygiene among adolescent girls with selected demographic variables. (N=60)

No	Demographic Variables	Inadequate		Moderate		Adequate		Df	P Value	X^2 Value
		N	%	N	%	N	%			
1	Age (in Years)									
	10-12	26	43.33	11	18.3	0	0	2	** .082	3.022
	13-15	11	18.33	12	20	0	0			
	16-19	0	0	0	0	0	0			
2	Standard									
	5th- 6th	18	30	3	5	0	0	1	* .005	7.9
	7th-8th	19	31.66	20	33.3	0	0			

No	Demographic Variables	Inadequate		Moderate		Adequate		Df	P Value	X^2 Value
		N	%	N	%	N	%			
	9th-10th	0	0	0	0	0	0			
	11th-12th	0	0	0	0	0	0			
3	Type of Family									
	Nuclear	16	26.66	18	30	0	0	1	* .007	9.95
	Joint	21	35	4	6.66	0	0			
	Extended	0	0	0	0	0	0			
4	Source of Information									
	Mother	21	35	21	35	0	0	3	* .029	9
	Teachers	2	3.33	0	0	0	0			
	Friends	7	11.66	0	0	0	0			
	Mass Media	7	11.66	2	3.33	0	0			
5	Menstruation Status									
	Menstruated	16	26.66	18	30	0	0	1	* .008	7.08
	Non- Menstruated	21	35	5	8.33	0	0			

*=Significant, **= Non-Significant *Significant, at p<0.05 level.

Discussion

Table 2 shows that the majority (61.67%) of the adolescent girls had inadequate knowledge level, followed by (38.33%) who had moderate knowledge regarding menstrual hygiene in the pre-test. The post-test frequency showed that the majority (65%) of the adolescent girls had adequate knowledge level, followed by (35%) who had moderate knowledge regarding menstrual hygiene. Hence, it was concluded that most adolescent girls had adequate knowledge regarding menstrual hygiene after conducting a structured teaching program.

Table 3 compares pre-interventional and post-interventional knowledge of menstrual hygiene among adolescent girls. The mean 19.3 post-test score was more than the mean 13.01 pre-test score of adolescent girls. The comparison of pre and post-interventional levels of knowledge had a significant difference with the 't' value (14.27) at p<0.05 level of significance. Hence, it was concluded that there was a significant difference between pre-and post-interventional knowledge on menstrual hygiene among adolescent girls. Hence the formulated Hypothesis H_1, the posttest knowledge score of adolescent girls regarding menstrual hygiene will be significantly higher than pre-test knowledge scores was accepted. It shows a significant improvement in the knowledge levels of adolescent girls regarding menstrual hygiene.

Table V shows that the researcher calculated the chi-square value to find out the association between the level of pre-test knowledge score with their selected socio-demographic variable among adolescent girls at p<0.05 level of significance. The data shows that there was a significant association between the level of knowledge with standard ($\chi^2 = 7.90$), type of family ($\chi^2 = 9.95$), source of information ($\chi^2 = 9.00$), and menstrual status ($\chi^2 = 7.08$) and there was no association between level of knowledge with Age ($\chi^2 = 3.02$) at p<0.05 at the level of significance. Hence, the formulated Hypothesis H2, there will be a significant association between the pre-test knowledge score and selected socio-demographic variables, was accepted. The findings were supported by the following (Bulto, 2021; Choudhary & Gupta, 2019; Majeed et al., 2022; Suganya, 2017) conducted a study to assess the

effectiveness of structured teaching programs on the knowledge and attitude of adolescent girls on menstrual hygiene management at selected schools of Uttar Pradesh. Using one group pre and post-test research design, 30 samples were selected through purposive sampling. The results showed that a structured teaching program effectively enhanced the knowledge and changed adolescent girls' attitudes regarding menstrual hygiene and management. Another study conducted (Suganya, 2017) on the effectiveness of structured teaching programs on knowledge and attitude regarding menstrual hygiene among adolescent girls (Karki et al., 2018; Nnennaya et al., 2021; Rajbhandari et al., 2018) by utilizing a quantitative research approach with one group pretest-posttest research design. The study was conducted among eighth and ninth-standard students. The samples were 50 selected by using a convenient sampling technique. The overall pre-test and post-test knowledge showed that 72% of the students had inadequate knowledge, and after administering structured teaching, 78% had adequate knowledge.

Moreover, the overall attitude in the pre-test and post-test showed 36% had an unfavorable attitude on the pre-test, and 72% had a favorable attitude on the post-test. An evaluative study was conducted by (Khandare et al., 2018) on the effectiveness of a structured teaching program on knowledge regarding menstrual hygiene among adolescent girls. Using a convenient sampling technique, 60 adolescent girls were chosen from Dnyana Ankur Vidya Mandir School, Aurangabad. The results revealed that in the pre-test, 11(18.33%) girls had poor knowledge, 37(61.66%) of them had average knowledge and 12 (20%) of them had good knowledge regarding menstrual hygiene. It was revealed that in the post-test, 7(11.66%) participants had poor knowledge, 43(71.66%) participants had average knowledge, and 10 (16.66%) participants had good knowledge regarding menstrual hygiene. The study's findings supported the effectiveness of STP in increasing the knowledge regarding menstrual hygiene among adolescent girls. Another study was conducted by (VN Kumar, 2020) to evaluate the effectiveness of a structured teaching program (STP) to increase the knowledge and practices on menstrual hygiene among adolescent schoolgirls. A Pre-experimental group pre-post test study design was applied, and the results showed that pre-test knowledge among respondents regarding menstrual hygiene showed 49.21% moderate and 50.79% adequate knowledge, respectively. In the post-test, all of them demonstrated adequate knowledge, and none of them showed inadequate knowledge. Pre-test practices among respondents regarding menstrual hygiene were recorded as 3.75% inadequate, 61.25% moderate, and 35.0% adequate.

No significant association was found between knowledge regarding menstrual hygiene among adolescents with socio-demographic variables. The study concluded that the Structured Teaching Programme is an effective strategy for improving knowledge and practices regarding menstrual hygiene for adolescent girls (Karki et al., 2018; Kole et al., 2018; Mohammed & Larsen-Reindorf, 2020) An analytical study was conducted to evaluate the effectiveness of structured teaching program on menstrual hygiene using one group pre-test – post-test design conducted among 100 adolescent schoolgirls studying in a public school in Palpa. Pretested semi-structured questionnaire was used to assess knowledge and practice, whereas a valid MAQ (Menstrual Attitude Questionnaire) was used for attitude. This was followed by a structured teaching program consisting of

information on menstruation, myths, and hygiene. The study resulted in statistically significant knowledge, attitude, and practice improvements after implementing the structured teaching program.

Conclusion

The conclusion drawn based on the study findings includes: Overall pre-test mean score on knowledge regarding menstrual hygiene among adolescent girls was 52.04% showing inadequate knowledge, which suggested the need for a teaching program for adolescent girls regarding menstrual hygiene. Overall posttest means score on knowledge adolescent girls regarding menstrual hygiene among adolescent girls was 76.12% shows adequate knowledge. The calculated paired 't' values for knowledge scores were statistically highly significant at 0.05. There is no significant association between knowledge score on menstrual hygiene among adolescent girls and the selected socio-demographic Variable such as Age (χ^2 =3.02), and There is a significant association between knowledge score and the selected socio-demographic Variable such as standard (χ^2 = 7.90), type of family (χ^2 = 9.95), source of information (χ^2 = 9.00) and menstrual status (χ^2 = 7.08). Hence, the stated hypothesis was accepted.

Prevention is simple, cost-effective, and better than cure. The current study aims to impart knowledge and encourage healthy menstrual hygiene practices that prevent reproductive tract infection among adolescent girls and ultimately promote reproductive health. The study's findings showed that structured teaching programs significantly improved their knowledge levels. Thus, health education increases and motivates them to improve their health and tends to decrease associated infections to promote the well-being of their future reproductive life among adolescent girls. Recommendations: The same study can be conducted among a large sample. It can be conducted to assess adolescent girls' knowledge, attitude, and practice levels regarding menstrual hygiene. A comparative study can be undertaken among rural and urban area living girls or day scholar/hostler girls to identify the gaps or to compare.

Authors Contributions

The author carries out tasks from data collection, data analysis, making discussions to making manuscripts

Conflicts of Interest

There is no conflict of interest

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