



A quasi experimental study to evaluate the knowledge on menstrual hygiene by structured teaching programme among adolescent girls (13-18 years) in a selected school at Sagar (M.P.)

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Abstract

Menstrual hygiene is a crucial aspect of adolescent health, yet many girls lack adequate knowledge and proper practices regarding it. This quasi-experimental study aimed to evaluate the effectiveness of a structured teaching program on menstrual hygiene among adolescent girls (13-18 years) in a selected school at Sagar (M.P.). A total of 60 participants were selected using non-probability convenient sampling technique. A pre-test was conducted to assess their baseline knowledge, followed by the implementation of a structured teaching program. After the intervention, a post-test was administered to evaluate the improvement in knowledge.

The results showed a significant increase in the participants' understanding of menstrual hygiene, including awareness of safe practices, hygiene management, and disposal methods. The statistical analysis confirmed the effectiveness of the structured teaching program in enhancing menstrual hygiene knowledge among adolescent girls.

The study concludes that structured teaching programs are an effective method for improving menstrual hygiene awareness. It recommends integrating menstrual health education into school curricula and encouraging collaborative efforts among educators, healthcare professionals, and parents to ensure better menstrual hygiene management among adolescent girls. Further research is suggested to explore long-term impacts and extend such interventions to different socio-cultural settings.

Keywords: Structured Teaching Program (STP), adolescent health, menstruation, menstrual hygiene, knowledge, health practices, attitude, adolescent girls

Introduction

Better to remain silent & be thought a fool than to speak out and remove all doubt” -Abraham Lincoln

Menstruation is a natural and normal physiological process for all healthy adult women, it has in many societies been surrounded by secrecy and myths in the past and even today. Few mothers openly talk about this with their daughters because of social and cultural taboos. So the very nature of the menstrual problem puts young girls into many embarrassing situations. As a result, the young girls become negatively oriented to this process and view it as a deplorable because part of life. Menstrual cycles are often irregular through adolescence, particularly the interval from the first to the second cycle. According to the World Health Organization's international and multicenter study of 3073 girls, the median length of the first cycle after menarche was 34 days, with 38% of cycle lengths exceeding 40 days. Variability was wide: 10% of females had more than 60 days between their first and second menses, and 7% had a first cycle length of 20 days. Most females bleed for 2 to 7 days during their first menses. Early menstrual life is characterized by an ovulatory cycles, but the frequency of ovulation is related to both time since menarche and age at

menarche. Early menarche is associated with early onset of ovulatory cycles. When the age at menarche is younger than 12 years, 50% of cycles are ovulatory in the first gynecologic year (year after menarche).

By contrast, it may take 8 to 12 years after menarche until females with later-onset menarche are fully ovulatory. Despite variability, most normal cycles range from 21 to 45 days, even in the first gynecologic year, although short cycles of fewer than 20 days and long cycles of more than 45 days may occur. Long cycles most often occur in the first 3 years post menarche, the overall trend is towards shorter and more regular cycles with increasing age. By the third year after menarche, 60% to 80% of menstrual cycles are 21 to 34 days long, as is typical of adults. An individual's normal cycle length is established around the sixth gynecologic year, at a chronological age of approximately 19 or 20 years.

Two large studies, one cataloging 275947 cycles in 2702 females and another reporting on 31645 cycles in 656 females, support the observation that menstrual cycles in girls and adolescents typically range from 21 to approximately 45 days, even in the first gynecologic year. In the first gynecologic year, the fifth percentile for cycle length is 23 days and the 95th percentile is 90 days. By the

fourth gynecologic year, fewer females are having cycles that exceed 45 days, but ovulation is still significant for some, with the 95th percentile for cycle length at 50 days. By the seventh gynecologic year, cycles are shorter and less varying, with the fifth percentile for cycle length at 27 days and the 95th percentile at only 38 days. Thus, during the early years after menarche, cycles may be somewhat long because of ovulation, but 90% of cycles will be within the range of 21 to 45 days.

Materials and Methods

“What you dislike in another take care to correct in yourself” Thomas Sprat

Study Design

This study is a quasi-experimental design aimed at evaluating the effectiveness of a Structured Teaching Program (STP) on menstrual hygiene among adolescent girls aged 13-18 years. The study was conducted in a selected school in Sagar, Madhya Pradesh.

Group	Pre	Intervention	Post
Experimental Group	O ₁	X	O ₂

Study Setting

The study was conducted at a Government Girls Senior Secondary School Sehora Sagar Madhya Pradesh, India. The school was chosen due to the availability of adolescent girls in the specified age group (13-18 years) and the willingness of the school authorities to participate.

Population

- **Target Population:** Adolescent girls aged 13-18 years.
- **Study Population:** Adolescent girls attending the Government Girls Senior Secondary School Sehora Sagar, M.P.

Sample Size

The sample size was (60 Adolescent girls) calculated using a standard formula for a quasi-experimental study, ensuring adequate power to detect the effect of the STP. A total of self-structured MCQ questionnaire for assessment of knowledge regarding menstrual hygiene from classes 8 to 12, who met the inclusion criteria, were selected for the study.

Sampling Technique

A non-probability convenient sample method was used to select participants. The students were one group research design age, maximum of adolescent girls 22 their percentage are (36%) were in the age group of 13-15 yrs. 15-18-year adolescent girls' frequency are 18 their percentage are 30.0%. 12-13 year their percentage are 17%. 18-20 year adolescent girls their percentage are 5.0%. Socio economic status, that maximum Socio-economic Status of low-class adolescent girls 31 percentage are 51%. Middle class adolescent girls 17 percentage are 28.3% and high-class adolescent girls 12 percentage are 20%.

Related to type of family Shows that maximum percentage of family background are nuclear family adolescent girls 25 their percentage are 41.7%, joined family 19 adolescent girls their percentage are 31.7% and extended family 16

adolescent girls their percentage are 26.7%. dietary pattern, maximum percentage of dietary pattern of adolescent girls are non-vegetarian 30 their percentage are 50% and vegetarian adolescent girls 30 their percentage are 50%. Maximum percentage of urban area of adolescent girl's 31 their percentage are 51.7% and rural area adolescent girls 29 their percentage are 48.3%. That maximum percentage of 11th class of adolescent girls 30 their percentage are 50% and 12th class 30 adolescent girls their percentage are 50%.

Analysis of overall pretest knowledge score

Analysis of overall pre-test knowledge score of adolescent girls regarding menstrual hygiene depicted in Shows, adolescent girls, overall percentage of knowledge on menstrual hygiene. They are having only 45.3% of knowledge on menstrual hygiene.

Knowledge on menstrual hygiene in general 28.3% of women are having poor knowledge and 71.7% of them having average knowledge and none of them having adequate knowledge.

Analysis of overall post-test knowledge score

Analysis of overall post-test knowledge score of adolescent girls regarding menstrual hygiene depicted in adolescent girls, overall percentage of knowledge on menstrual hygiene. They are having 83.7 percent of knowledge on menstrual hygiene.

Analysis of post-test level of knowledge

Analysis of adolescent girls regarding menstrual hygiene depicted in Shows the adolescent girls level of knowledge on menstrual hygiene none of adolescent girls are having poor knowledge, 15.0% of them having average knowledge and 85% of them having adequate knowledge.

Analysis of pretest level of knowledge

Analysis of pre-test knowledge score of adolescent girls regarding menstrual hygiene depicted in adolescent girls' level of on menstrual hygiene none of adolescent girls are having poor knowledge, 15.0% of them having average knowledge and 85% of them having adequate knowledge.

Analysis of comparison of overall knowledge score before and after structured teaching programme

The finding in comparison of overall knowledge before and after the administration STP. On an average, adolescent girls improved their knowledge from 18.12 to 33.67 after the administration of STP.

Analysis of effectiveness of structured teaching programme

Analysis of effectiveness of structured teaching programme on adolescent girls regarding menstrual hygiene depicted in Shows the effectiveness of the STP. Considering the overall aspects, adolescent girls gained 38.4 percent more knowledge on hygiene after the administration of STP. This 38.4 percent of knowledge gain is the net benefit of this study, which indicates the effectiveness of STP.

Association between pretest level of knowledge and their demographic variables

The association between demographic variables and their

pretest level of knowledge.

None of the demographic variables are significantly associated with their pretest level of knowledge.

Association between demographic variables and their pretest level of knowledge was analyzed using Pearson chi-square test/Yates corrected chi square test.

Association between post-test level of knowledge and their demographic variables

The finding in Shows the association between demographic variables and their posttest level of knowledge. Age, type of

area, class are significantly associated with their posttest level of knowledge. The age, the degree of freedom is 2, the χ^2 value is 7.82 and p value is 0.02 that is significant. Type of area, the degree of freedom is 1, χ^2 value is 6.97 and p value is 0.008 that is a significant. Class, the degree of freedom is 1 and χ^2 value is 8.64 and p value is 0.005 that is also significant. Elders, urban girls and 12th STD girls gained more knowledge than others. Association between demographic variables and their pretest level of knowledge was analyzed using Pearson chi-square test/Yates corrected chi square test.

Subheadings

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Footnotes

Better to remain silent & be thought a fool than to speak out and remove all doubt” -Abraham Lincoln

“What you dislike in another take care to correct in yourself” -Thomas Sprat

Results and Discussion

The major findings of the study revealed that the Analysis of comparison of pre-test and post-test level of knowledge on adolescent girls regarding menstrual hygiene depicted in the pretest and post-test level of knowledge on hygiene. Before the administration of STP, 28.3% of women are having poor knowledge and 71.7% of them having average knowledge and none of them having adequate knowledge after the administration of STP, none of adolescent girls are having poor knowledge, 15.0% of them having average

knowledge and 85% of them having adequate knowledge. Analysis of pre-test and post-test level of knowledge score on adolescent girls regarding menstrual hygiene depicted in Stuart-Maxwell test/Generalized McNamara’s chi square test, P=0.001 that shows the comparison of level of knowledge before and after the administration of STP. In pretest, 17 adolescent girls are having poor knowledge and 43 adolescent girls are having average knowledge. In posttest 9 adolescent girls are having average knowledge and 51 adolescent girls are having adequate knowledge, Out of 17 poor knowledge adolescent girls in pretest, 2 adolescent girls were move to average level and 15 adolescent girls move to adequate level of knowledge. Out of 43 average knowledge adolescent girls in pretest, 7 adolescent girls were move to average level and 36 adolescent girls move to adequate level of knowledge. Improvement of Pretest and posttest level of knowledge was

calculated using Stuart-Maxwell test/Generalized McNamara's chi-square test.

programme on knowledge related to menstrual hygiene of adolescent girls.

Comparison of overall knowledge score before and after structured teaching programme

Tables and Figures

T-Test to evaluate the effectiveness of structured teaching

Table 1: Shows the comparison of overall knowledge before and after the administration STP

Overall Knowledge Score	No of adolescent girls	Pretest Mean ±SD	Posttest Mean ±SD	Student's paired, t-test
	60	18.12±1.87	33.67±3.47	T=40.99, P=0.001, DF=59, Significant

Significant at $p \leq 0.05$ highly significant at $P \leq 0.01$ very high significant at $p \leq 0.001$

Table 1, Shows the comparison of overall knowledge before and after the administration STP. On an average, adolescent

girls improved their knowledge from 18.12 to 33.67 after the administration of STP.

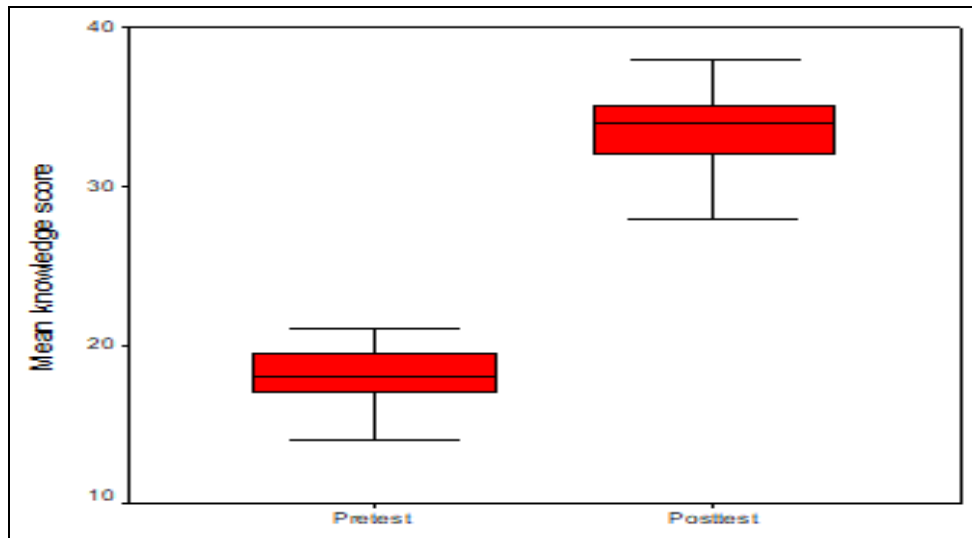


Figure 1, Line graph showing comparison of adolescent girls pretest and posttest knowledge score on menstrual

hygiene effectiveness of structured teaching programme

	% of Pretest	% of Posttest	% of knowledge gain
Knowledge	45.3%	83.7%	38.4%

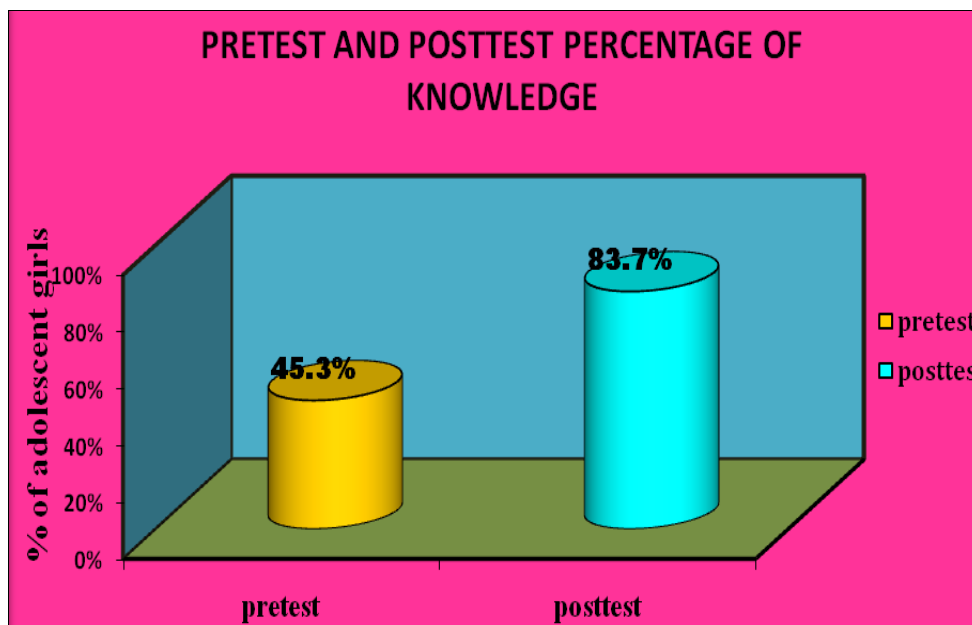


Fig 1: Cylindrical graph showing the pre-test and post-test percentage of knowledge

Table 2, (Figure 2) shows the effectiveness of the STP. Considering the overall aspects, adolescent girls gained 38.4 percent more knowledge on hygiene after the administration

of STP. This 38.4 percent of knowledge gain is the net benefit of this study, which indicates the effectiveness of STP.

Table 2: Comparison of pretest and posttest level of knowledge

Level of knowledge	Pre-test		Post-test	
	N	%	N	%
Poor knowledge	17	28.3%	0	0.0%
Average knowledge	43	71.7%	9	15.0%
Adequate knowledge	0	0.0%	51	85.0%

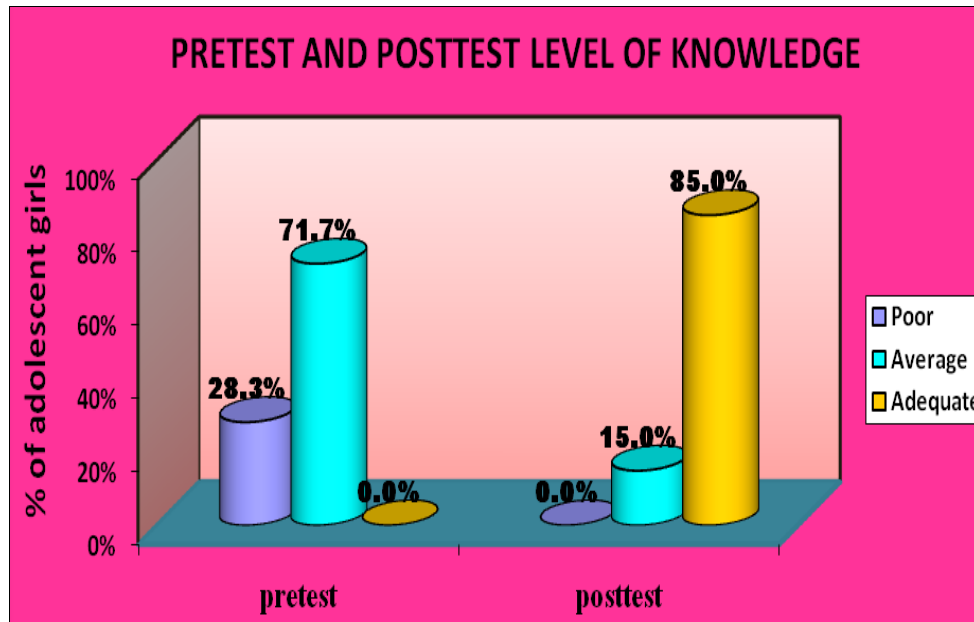


Fig 2: Show pretest and post-test level of knowledge

Table and Figure, Cylindrical graph Showing the pretest and post-test level of knowledge on hygiene

Before the administration of STP, 28.3% of women are having poor knowledge and 71.7% of them having average knowledge and none of them having adequate knowledge. After the administration of STP, none of adolescent girls are having poor knowledge, 15.0% of them having average knowledge and 85% of them having adequate knowledge.

**Equations
Mean**

Formula

$$\bar{X} = \frac{\sum X}{n}$$

**Standard Deviation
Formula**

$$\sigma = \sqrt{\frac{\sum (x - \mu)^2}{n}}$$

The obtained correlation was corrected for length by using Spearman Brown Prophecy formula

**Chi-Square Test
Formula**

$$\chi^2 = \sum \left[\frac{(O-E)^2}{E} \right]$$

**Paired T-Test
Formula**

$$T = \frac{\bar{X} - \bar{Y}}{S_d / \sqrt{n}}$$

Conclusions

The quasi-experimental study aimed to evaluate the knowledge on menstrual hygiene among adolescent girls (13-18 years) in a selected school at Sagar (M.P.) through a structured teaching program. The findings revealed a significant improvement in knowledge levels after the intervention. Prior to the structured teaching program, many participants had inadequate awareness regarding proper menstrual hygiene practices, including personal care, safe disposal methods, and the importance of using sanitary products. However, post-intervention results demonstrated a marked enhancement in their understanding and practices.

The study underscores the effectiveness of structured

teaching programs in improving menstrual hygiene awareness among adolescent girls. It highlights the necessity of integrating menstrual health education into school curricula to empower young girls with the necessary knowledge and skills for maintaining proper hygiene. Schools, parents, and healthcare professionals should work collaboratively to promote menstrual hygiene awareness, ensuring the overall well-being and confidence of adolescent girls.

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Conflict of Interest

Not available

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Not available

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