

A Study to Assess the Effectiveness of Structured Teaching Program on Knowledge and Practices Regarding Menstrual Hygiene Among Early Adolescent Schoolgirls at Kuppam

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Abstract

Background and Aims: Menstruation is a process that only impacts women. In current society myths and cultural beliefs regarding menstruation have an important menstrual practice, which causes teenage groups to be ignorant of the scientific information required to maintain excellent reproductive health. Due to ignorance of the menstrual cycle, menstruation is surrounded by psychological and religious stigmas. Many women in rural areas lack an understanding of the menstrual cycle, even though menstruation is a natural process. It is often linked to various social beliefs and customs that can negatively affect health. Therefore, the purpose of this study was to evaluate the impact of a structured teaching program on the knowledge and practices related to menstrual hygiene among early adolescent schoolgirls at Kuppam. **Material and Methods:** A total of 144 adolescent girls who met the inclusion criteria were selected using a convenient sampling method. Data was gathered through a structured questionnaire assessing knowledge and practices related to menstrual hygiene. **Results:** The findings showed that in the pretest, the majority, 134 (93.06%) had inadequate knowledge, 10 (6.94%) had moderate knowledge, and none (0%) had adequate knowledge. In the posttest, the majority, 116 (80.56%), had adequate knowledge, 26 (18.06%) had moderate knowledge, and 2 (1.39%) had inadequate knowledge. In pretest, the majority 88 (61.11%) of them had moderate practice, 55 (38.19%) had low practice and 1 (0.69%) had good practice and in posttest majority 112 (77.78%) of them had moderate practice, 27 (18.75%) had low practice and 5 (3.47%) had good practice.

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INTRODUCTION

The WHO established the age range of 10–19 as adolescence. During this time, there is a transition from childhood to adulthood [1]. Around one-fifth of all females worldwide are in their adolescent years. Girl adolescence, which is characterized by the beginning of menstruation, calls for particular and special treatment.

UNICEF (2020) has divided adolescence into two categories: early adolescence, which includes children between the ages of 10 and 14; and late adolescence, which includes those between the ages of 15 and 19 years [2].

Menstruation is a phenomenon that only affects women. In a current society, it is nonetheless, regarded as filthy or unclean [3, 4]. Myths and cultural beliefs regarding menstruation have an important menstrual practice, which causes teenage groups to be ignorant of the scientific information required to maintain excellent reproductive health. Due to ignorance of the menstrual cycle, menstruation is surrounded by psychological and religious stigmas. Many women in rural areas lack an understanding of the menstrual cycle processes. While menstruation is a natural event, it is often linked to various social beliefs and traditions that can negatively affect health.

NEED FOR THE STUDY

According to recent survey on sanitary protection every woman's health right was undertaken in India only 12% of Indians 355 million menstruating Bandoporo and Kwarau 4,57,000 sanitary napkins were supplied, of which only 1,16,598 napkins were sold. More than 88% of women use unconventional and unsanitary materials, such as cloth, ashes, and husk sand. Reproductive Tract Infections (RTIs) are 70% more prevalent among these women. The primary obstacle to using sanitary napkins is cost, with around 70% of women in India reporting that their families cannot afford them. As a result, 88% of women rely on old fabric, rags, or sand to manage their menstrual flow. This highlights significant entrepreneurial opportunities within this sector [5].

In Sub-Saharan Africa, one in ten girls miss school during their menstrual cycle, which, in some cases, can amount to as much as twenty percent of the school year. This absenteeism is primarily due to inadequate menstrual hygiene practices. Most students do not use sanitary napkins, and many girls eventually drop out of school once they begin menstruating [6].

In India, in regions with high mortality rates, reproductive tract infections (RTIs) are a leading cause of hospital admissions. Hospital data from areas with high female mortality rates reveal that up to 13% of inpatient deaths in gynecology wards are attributed to poor hygiene practices. In 2011, this amounted to around 556,000 cases in India and 1,354,000 cases in China. The prevalence of reproductive tract infections among Indian women ranged from 3% to 8% [7].

Objectives of the Study

1. To evaluate the knowledge and practices related to menstrual hygiene among adolescent schoolgirls.
2. To assess the impact of a structured teaching program on the knowledge and practices concerning menstrual hygiene among early adolescent schoolgirls.
3. To examine the relationship between demographic factors and the posttest knowledge and practice scores of menstrual hygiene among adolescent schoolgirls.

MATERIAL AND METHODS

- *Research approach:* A quantitative research method was employed in this study to evaluate the impact of a structured teaching program on the knowledge and practices related to menstrual hygiene among early adolescent schoolgirls at Kuppam.
- *Research design:* A pre-experimental research design using a one-group pretest posttest approach was utilized.
- *Research setting:* The study was carried out at the Government School in Begillepalli, Kuppam, located in the Chittoor district of Andhra Pradesh.
- *Population:* The study of the population consists of early adolescent schoolgirls who met the inclusion criteria.
- *Sample:* Study is conducted among 10–14 years of age whois studying V–IX class.

- *Sample size:* Based on power analysis the calculated sample was 144.
- *Sampling technique:* Convenient sampling technique.

Sampling criteria Inclusion criteria:

1. Schoolgirls who were aged between 10 and 14 years and attained menarche studying V–IX standard.
2. Able to speak Telugu and English.

Exclusion Criteria

1. Students with any gross learning disabilities.
2. Students who were not willing to participate in the study.

Research Variables

- *Dependent variables:* It refers to the structured teaching program on menstrual hygiene.

Development and description of tools: “a modified pretested structured questionnaire was developed on the basis of objectives, review of literature and the opinion from the experts to assess the knowledge and practice regarding menstrual hygiene among early adolescent schoolgirls at Kuppam.”

- *Description of the tool:* This tool was used to gather data from each participant within the study settings and is divided into three sections.
- *Part I Section A: Demographic data:* The study subjects’ characteristics included age, education, religion, type of family, place of residence, mother’s education, father’s education, mother’s occupation, monthly family income, number of siblings, and sources of information.
- *Part I Section B: Health variables like:* This includes the age at which the first menstruation occurred, menstrual hygiene practices, frequency of changing sanitary napkins per day, pain perception during menstruation, source of water supply, disposal methods, and toilet hygiene practices.
- *Part II Section C:* A pre- and post-test structured interview questionnaire was used to assess knowledge about menstrual hygiene among early adolescent schoolgirls at Kuppam. The questionnaire consisted of 20 multiple-choice questions, where each correct answer earned 1 point, and each incorrect answer received 0 points.
- *Part II Section D:* A pre- and post-test structured interview questionnaire was used to evaluate practices related to menstrual hygiene among early adolescent schoolgirls at Kuppam. The questionnaire contained 10 questions, with each correct answer awarding 1 point and each incorrect answer receiving 0 points.
- *Validity:* The tool was reviewed by nursing experts from the medical and surgical departments. Some items were revised based on their suggestions, and those with 100% agreement were included in the tool, ensuring its content validity.
- *Reliability:* The reliability of the tool was evaluated following a pilot study, using Cronbach’s Alpha formula. The reliability was tested on 15 subjects to assess the effectiveness of the structured teaching program on knowledge and practices regarding menstrual hygiene among early adolescent schoolgirls. The tool showed statistical significance, with a knowledge reliability coefficient of 0.82 and a practice reliability coefficient of 0.86.
- *Ethical clearance:* Ethical approvals were obtained from the Institutional Research Committee (IRC) and the Institutional Human Ethics Committee at PESIMSR, Kuppam.
- *Pilot study:* The pilot study was conducted from 11.10.2023 to 16.10.2023 to evaluate the feasibility and practicality of the study, as well as to finalize the plan for statistical analysis. The results were positive, allowing for the main study to proceed.
- *Data collection procedure:* Data collection took place over a period of 4 weeks, from 17.11.2023 to 16.12.2023. Formal approval was obtained from the ethical committee of PESIMSR. 144 early adolescent schoolgirls was selected by using convenient sampling

techniques. Samples were selected from V to IX standards girls. The investigator given a brief introduction to the participants. Verbal and written consent was obtained before test.

Everyday 5 to 6 samples were selected by using convenient sampling technique to assess knowledge and practice on menstrual hygiene by using knowledge and practice structured interview questionnaire and results were interpreted by using descriptive and inferential statistics.

RESULTS

The data is organized and presented under the following sections.

Section 1. Frequency and Percentage Distribution of Demographic Variables Among Early Adolescent Schoolgirls

Table 1 shows the following points:

- *Age:* The majority (34.72%) of participants were aged 13–14 years, followed by those aged 12–13 years (27.78%).
- *Education:* Most girls (37.50%) were in the VI grade, with others distributed across VII, VIII, and IX grades.
- *Religion:* A significant majority (69.44%) were Hindu, 29.17% were Christian, and 1.39% were Muslim.
- *Type of Family:* Most participants (97.22%) came from nuclear families.
- *Residence:* The majority (86.61%) lived in rural areas, with very few (1.39%) in urban areas.
- *Parental Education:* Most mothers and fathers (97.22%) had primary education, with very few having high school education or no formal education.
- *Mother's Occupation:* Most mothers (94.44%) were unemployed, with a few self-employed or employed.
- *Family Income:* The majority (79.86%) of families earned less than 10, 000 INR per month.
- *Siblings:* Most participants (73.61%) had one sibling.
- *Source of Information:* The main source of information about menstruation was friends (63.89%), followed by mothers (27.08%).

Table 1. Frequency and percentage distribution of demographic variables.

S.N.	Demographic Variables of Early Adolescent Girls	Frequency (f)	Percentage (%)
1	<i>Age</i>		
	(a) 10–11 years	27	18.75
	(b) 11.1–12 years	27	18.75
	(c) 12.1–13 years	40	27.78
	(d) 13.1–14 years	50	34.72
2	<i>Education</i>		
	(a) VI standard	54	37.5
	(b) VII standard	40	27.78
	(c) VIII standard	32	22.22
	(d) IX standard	18	12.5
3	<i>Religion</i>		
	(a) Hindu	100	69.44
	(b) Christian	42	29.17
	(c) Muslim	2	1.39
4	<i>Type of Family</i>		
	(a) Nuclear Family	140	97.22
	(b) Joint Family	4	2.78
	(c) Extended Family	0	0

5	<i>Residence</i>		
	(a) Urban (Town)	2	1.39
	(b) Rural (Village)	142	98.61
6	<i>Educational Status of the Mother</i>		
	(a) Illiterate	2	1.39
	(b) Primary school	140	97.22
	(c) High school	2	1.39
	(d) Higher secondary school	0	0
	(e) Graduate	0	0
7	<i>Educational Status of the Father</i>		
	(a) Illiterate	2	1.39
	(b) Primary school	140	97.22
	(c) High school	2	1.39
	(d) Higher secondary school	0	0
	(e) Graduate	0	0
8	<i>Occupational Status of the Mother</i>		
	(a) Employed	2	1.39
	(b) Unemployed	136	94.44
	(c) Self-employed	6	4.17
9	<i>Family Income Per Month</i>		
	(a) 10000	115	79.86
	(b) 10000–20000	27	18.75
	(c) 20000–30000	2	1.39
	(d) >30000	0	0
10	<i>Number of Sibling</i>		
	(a) 1	106	73.61
	(b) 2	32	22.22
	(c) 3 and above	6	4.17
11	<i>Source of Information</i>		
	(a) Mother	39	27.08
	(b) Father	0	0
	(c) Friends	92	63.89
	(d) Relatives	1	0.69
	(e) Mass Media	12	8.33

Section 2. Frequency and Percentage Distribution of The Health-Related Variables Regarding Menstrual Hygiene Among Early Adolescent Schoolgirls

Table 2 shows the following points:

- *Age at First Period:* Most girls (47.22%) attained their first period between 11 and 12 years, with varying distributions across other age groups.
- *Nature of Practice:* The vast majority (96.53%) used sanitary napkins, while a small minority (3.47%) used cloth.
- *Frequency of Changing Napkin:* Most girls (79.86%) changed their napkins twice a day, 13.19% changed them three times or more, and 6.94% changed them once a day.
- *Perception of Pain:* All participants (100%) reported experiencing pain during menstruation.
- *Source of Water Supply:* Nearly 40.97% used bore water, 35.42% used municipal water, and 23.61% used well water.
- *Method of Disposal:* A majority (64.58%) dumped sanitary pads, while others either threw them outside (18.06%) or burned them (17.36%).
- *Toilet Practice:* All participants (100%) used sanitary latrines.

Table 2. Frequency and percentage distribution of the health-related variables regarding menstrual hygiene.

S.N.	Health-Related Variables of Early Adolescent Girls	Frequency (f)	Percentage (%)
1	<i>Age at 1st Period Attained</i>		
	(a) 10–11 years	26	18.06
	(b) 11–12 years	68	47.22
	(c) 12–13 years	40	27.78
	(d) 13–14 years	10	6.94
2	<i>Nature of Practice During Menstruation</i>		
	(a) Cloth	5	3.47
	(b) Sanitary napkin	139	96.53
	(c) Others	0	0
3	<i>Frequency of Changing Napkin Per Day</i>		
	(a) Once	10	6.94
	(b) Twice	115	79.86
	(c) Thrice and above	19	13.19
4	<i>Perception of Pain During Menstruation</i>		
	(a) Never	0	0
	(b) Sometimes	0	0
	(c) Always	144	100
5	<i>Source of Water Supply</i>		
	(a) Well water	34	23.61
	(b) Municipal water	51	35.42
	(c) Bore water	59	40.97
6	<i>Methods of Disposal</i>		
	(a) Directly burn	25	17.36
	(b) Throw outside	26	18.06
	(c) Dumped	93	64.58
7	<i>Toilet Practice</i>		
	(a) Open field	0	0
	(b) Sanitary latrine	144	100

Section 3. Frequency and Percentage Distribution of Pre-Test and Post-Test Knowledge Scores Regarding Menstrual Hygiene Among Early Adolescent Schoolgirls *Improvement in Knowledge Levels*

The study aimed to assess the effectiveness of a structured teaching program on menstrual hygiene knowledge among early adolescent schoolgirls. The results indicate a significant improvement in knowledge levels from pretest to posttest, as shown in the Table 3.

- *Adequate Knowledge:* The number of participants with adequate knowledge increased from 20 (14%) in the pretest to 50 (35%) in the posttest. This notable improvement highlights the success of the structured teaching program in increasing the participants' knowledge of menstrual hygiene.
- *Moderate Knowledge:* Participants with moderate knowledge increased from 50 (35%) in the pretest to 80 (56%) in the posttest. This suggests that the educational intervention not only improved knowledge but also moved a significant portion of participants from inadequate to moderate knowledge levels.
- *Inadequate Knowledge:* The number of participants with inadequate knowledge drastically decreased from 74 (51%) in the pretest to 14 (9%) in the posttest. This reduction highlights the success of the structured teaching program in addressing and mitigating the gaps in menstrual hygiene knowledge among the participants.

The pretest results show that the majority, 134 (93.06%), had inadequate knowledge, 10 (6.94%) had moderate knowledge, and none (0%) had adequate knowledge about menstrual hygiene.

In posttest, majority 116 (80.56%) of them had adequate level of knowledge, 26 (18.06%) had moderate level of knowledge and 2 (1.39%) had inadequate level of adequate level of knowledge (Figure 1).

Table 3. Frequency and percentage distribution of pre- and post-test knowledge scores regarding menstrual hygiene.

Level of Knowledge	Pretest		Posttest	
	Frequency	Percentage	Frequency	Percentage
Adequate Knowledge	20	14%	50	35%
Moderate Knowledge	50	35%	80	56%
Inadequate Knowledge	74	51%	14	9%

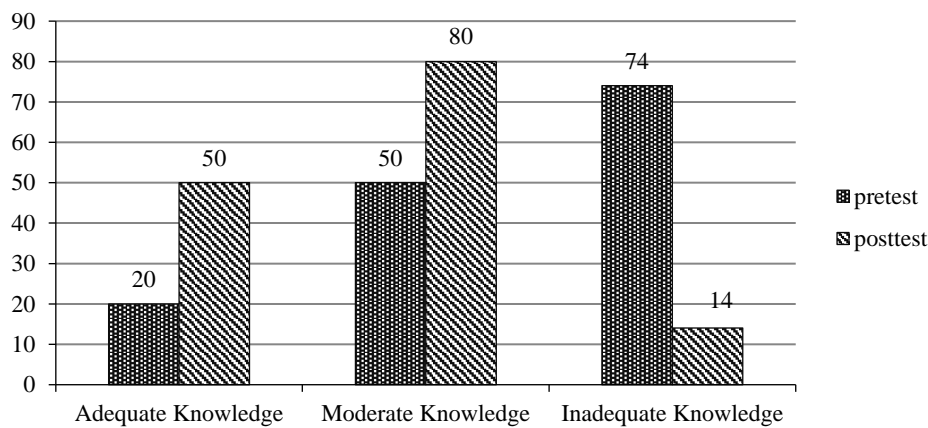


Figure 1. Graph showing frequency and percentage distribution of pre-test and post-test knowledge scores regarding menstrual hygiene.

Section 4. Frequency and Percentage Distribution of Pre-Test and Post-Test Practice Scores Regarding Menstrual Hygiene Among Early Adolescent Schoolgirls

Table 4 shows the frequency and percentage distribution of pre- and post-test practice scores regarding menstrual hygiene among early adolescent schoolgirls.

Table 4. Frequency and percentage distribution of pre- and post-test practice scores regarding menstrual hygiene.

Level of Practice	Pretest		Posttest	
	Frequency	Percentage	Frequency	Percentage
Low Practice	55	38.19	27	18.75
Moderate Practice	88	61.11	112	77.78
Good Practice	1	0.69	5	3.47

Section 5. Comparison of Pretest and Posttest Mean, SD “t” and p-Values of Knowledge Scores Regarding Menstrual Hygiene Among Early Adolescent Schoolgirls

Table 5 shows the comparison between the mean pretest and standard deviation value of knowledge score was mean 3.88 ± 1.75 and posttest mean score 15.08 ± 2.49 and the t value 50.39, p value < 3.00 indicate there was highly significant difference found in knowledge score in pre and posttest level. Hence the above findings support the H1 hypothesis, so the researcher accepts the H1 hypothesis.

Table 5. Comparison of pretest and posttest mean, SD “t” and p-values of knowledge scores regarding menstrual hygiene.

Knowledge Scores on Menstrual Hygiene Among Early Adolescent Girls Within Experimental Group	Mean	SD	t-Value	p-Value	Significance
Pretest	3.88	1.75	50.39	<0.000	Yes
Posttest	15.08	2.49			

Section 6. Comparison of Pretest and Posttest Mean, SD “t” and p-Values of Knowledge Scores Regarding Menstrual Hygiene Among Early Adolescent Schoolgirls

Comparison between the mean pretest and standard deviation value of practice score was mean 3.99 ± 1.23 and posttest mean score.

4.63 ± 1.40 and the t-value 4.92, p-value < 3.00 indicate there was highly significant difference found in practice score in pre- and post-test level. Therefore, the above findings support the H2 hypothesis, leading the researcher to accept it (Table 6).

Table 6. Comparison of pretest and posttest mean, SD “t” and p-values of knowledge scores regarding menstrual hygiene.

Practice Scores on Menstrual Hygiene Among Early Adolescent Girls Within Experimental Group	Number	Mean	SD	t-Value	p-Value	Significance
Pretest	144	3.99	1.23	4.92	<0.000	YES
Posttest	144	4.63	1.40			

Section 7. Association of Pretest Knowledge Score Regarding Menstrual Hygiene Among Early Adolescent Schoolgirls with Their Selected Demographic and Health-Related Variables

Describes the association between the pretest knowledge score with demographic and health related variables among early adolescent schoolgirls regarding menstrual hygiene, the results show significance on type of family, family income per month, perception of pain during menstruation ($p < 0.05$). Other demographic and health related variables, such as age, education, religion, residence, educational status of the mother, educational status of the father, occupational status of the mother, number of siblings, and source of information are not associated with the knowledge.

Section 8. Association of Pretest Practice Score Regarding Menstrual Hygiene Among Early Adolescent Schoolgirls with Their Selected Demographic and Health-Related Variables

Describes the association between the pretest practice score with demographic and health related variables among early adolescent schoolgirls regarding menstrual hygiene, the results show significance occupational status of the mother. Other demographic and health-related factors, including age, education, religion, type of family, place of residence, mother’s education, father’s education, monthly family income, number of siblings, and sources of information, do not show any association with the practices.

DISCUSSION

The first objective of the study was to evaluate the level of knowledge and practices related to menstrual hygiene among adolescent schoolgirls. The pretest results showed that most participants, 134 (93.06%), had inadequate knowledge, 10 (6.94%) had moderate knowledge, and none (0%) had adequate knowledge about menstrual hygiene. Regarding menstrual hygiene practices, the pretest revealed that 88 (61.11%) had moderate practice, 55 (38.19%) had low practice, and 1 (0.69%) had high practice [8].

The second objective of the study was to assess the impact of a structured teaching program on the knowledge and practices related to menstrual hygiene among early adolescent schoolgirls. The

posttest scores were higher than the pretest scores, with a p-value of less than 0.05, indicating a significant improvement in knowledge and practices following the intervention [9].

The third objective of the study was to examine the relationship between demographic variables and the posttest knowledge and practice scores on menstrual hygiene among adolescent schoolgirls. The findings revealed a significant association between the posttest knowledge score and demographic as well as health-related variables, including type of family, monthly family income, and the perception of pain during menstruation [10].

CONCLUSIONS

The study was conducted to evaluate the knowledge and practices related to menstrual hygiene among early adolescent schoolgirls at Kuppam. The structured teaching program on menstrual hygiene and its associated topics could serve as an effective educational tool in empowering adolescent girls to adopt proper menstrual hygiene practices. By providing them with crucial knowledge, the program helps improve menstrual hygiene practices and reduce the risk of complications arising from poor hygiene during menstruation.

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