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# A Study to Assess the Effectiveness of Structured Teaching Program on Knowledge Regarding Menstrual Hygiene Among the Adolescent Girls in Kanpur

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***Abstract***

***Background****: Adolescent girls are less aware or unaware about menstrual hygiene and diseases occurring from unhygienic menstrual practice. Therefore, the present study aims to assess the effectiveness of a structured teaching program in improving menstrual hygiene knowledge.* ***Method****: The study utilized a quasi-experimental, one-group pretest-posttest design, with 40 adolescent girls chosen as participants using a simple random sampling method.* ***Result:*** *The mean pretest knowledge score was 1.90, while the mean posttest knowledge score showed that all 40 (100%) adolescent girls had adequate knowledge after the intervention. The paired t-test yielded a value of 14.022, which is greater than the table value of 2.02 at 39 degrees of freedom, indicating a statistically significant improvement at the 0.05 level. These results suggest that the structured teaching program successfully improved adolescent girls' knowledge of menstrual hygiene. The study also found a significant relationship between knowledge levels and specific demographic factors, including the duration of menstrual bleeding.* ***Conclusion****: Study concluded that the knowledge of adolescent girls was adequate about menstrual hygiene.*

**Keywords:** Adolescent girls, menstrual hygiene, structured teaching program, knowledge improvement, quasi-experimental study

## INTRODUCTION

In the adolescence period, girls experience the onset of puberty, which brings alterations in hormones' levels and appearance of secondary sex characteristics including menstruation. Adolescent girls often have limited knowledge about reproductive health, including menstruation [1, 2]. Menstruation is a major developmental milestone during adolescence, with the first occurrence (menarche) usually between 11 and 15 years, averaging at 13 years. Adolescence is crucial for shaping the future of a nation, as the health of adolescents influences the well-being of future generations. Maintaining menstrual hygiene is a vital part of a woman's overall health. The physiological, pathological, and psychological aspects of menstruation are closely linked to women's overall health and well-being, making it a significant concern for female morbidity and mortality. During this period, women are particularly vulnerable to developing reproductive tract infections, urinary tract infections, and various

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sexually transmitted diseases [3, 4]. Menstrual hygiene addresses the specific healthcare needs and requirements of women during their monthly menstrual cycles. At any given time, more than 300 million women around the world are menstruating, while approximately 500 million lack access to menstrual products and adequate facilities for proper menstrual hygiene. In low-income countries, nearly half of schools do not provide sufficient water, sanitation, and hygiene services, which are crucial for girls and female teachers to manage menstruation safely. Research indicates that inadequate sanitary facilities negatively impact girls' school experiences, leading to absenteeism during menstruation or even school dropout. In contrast, schools that provide female-friendly facilities and incorporate menstrual education help lessen stigma and support improved educational and health outcomes [5].

> "*Access to sufficient water for personal hygiene and facilities for the proper disposal of used menstrual products."*

## OBJECTIVES OF THE STUDY

- To measure adolescent girls' knowledge of menstrual hygiene prior to and following the intervention.
- To evaluate how effectively a structured teaching program improves menstrual hygiene knowledge among adolescent girls.
- To investigate the correlation between post-intervention knowledge and selected socio-demographic variables of adolescent girls.

## MATERIAL AND METHODS

### Research Approach

Quantitative approach.

### Research Design

Quasi-experimental, one-group pretest-post-test design.

### Research Setting

The study was conducted in a selected school in Kanpur, Uttar Pradesh.

### Population

The study population included adolescent girls attending the selected school in Kanpur, Uttar Pradesh.

### Sampling Technique and Sample

A total of 40 adolescent girls were selected using a simple random sampling method.

### Research Tool

The study utilized a tool divided into two sections.

*Section I:* Consisted of 8 items gathering information on the socio-demographic characteristics of the participants.

*Section II:* Comprised an 18-item structured knowledge questionnaire to assess adolescent girls' understanding of menstrual hygiene. Before administering the questionnaire, participants were briefed on the study's objectives and anticipated outcomes. Informed consent was obtained, and the self-administered questionnaire was completed by the participants. Permission to carry out the study was secured from the relevant authorities.

## RESULTS

The data presented in Table 1 indicate that among the 40 participants, 7 (17.5%) were aged 14–15 years, 32 (80.0%) were aged 16–17 years, and 1 (2.5%) was aged 18–19 years. In terms of religion, 30 (75.0%) were Hindus, 7 (17.5%) were Muslims, and 3 (7.5%) were Christians. Regarding educational status, 2 (5.0%) were in 8th grade, 11 (27.5%) were in 9th grade, and 27 (67.5%) were in

 

10th grade. Concerning family income, 1 (2.5%) belonged to the Rs. 1,000–5,000 range, 13 (32.5%) to Rs. 6,000–10,000, 15 (37.5%) to Rs. 11,000–15,000, and 11 (27.5%) had an income above Rs. 15,000. Regarding family type, 16 (40.0%) of the participants belonged to nuclear families, 14 (35.0%) to joint families, 6 (15.0%) to extended families, and 4 (10.0%) to stepfamilies. Concerning age at menarche, none (0%) experienced it at 11 years, 1 (2.5%) at 12 years, 23 (57.5%) at 13 years, and 16 (40.0%) at 14 years. As for the source of information about menstruation, 7 (17.5%) received information through mass media, 14 (35.0%) from teachers, 14 (35.0%) from parents, and 5 (12.5%) from other sources. Regarding the duration of menstrual bleeding, 3 (7.5%) reported 1–2 days, 27 (67.5%) reported 3–5 days, 10 (25.0%) reported 6–8 days, and none (0%) reported more than 8 days.

**Table 1.** Distribution of sample according to socio-demographic variables (n=40).

| S.N. | Demographic variables | Frequency | Percentage (%) |
|---|---|---|---|
| 1. | *Age group* | | |
| | a) 12–13 years | 0 | 00% |
| | b) 14–15 years | 7 | 17.5% |
| | c) 16–17 years | 32 | 80.0% |
| | d) 18–19 years | 1 | 2.5% |
| 2. | *Religion* | | |
| | a) Hindu | 30 | 75.0% |
| | b) Muslim | 7 | 17.5% |
| | c) Christian | 3 | 7.5% |
| | d) Others | 0 | 00% |
| 3. | *Educational status* | | |
| | a) 7th class | 0 | 00% |
| | b) 8th class | 2 | 5.0% |
| | c) 9th class | 11 | 27.5% |
| | d) 10th class | 27 | 67.5% |
| 4. | *Family income (in Rupees)* | | |
| | a) 1000–5000 | 1 | 2.5% |
| | b) 6000–10000 | 13 | 32.5% |
| | c) 11000–15000 | 15 | 37.5% |
| | d) More than 15000 | 11 | 27.5% |
| 5. | *Type of family* | | |
| | a) Nuclear family | 16 | 40.0% |
| | b) Joint family | 14 | 35.0% |
| | c) Extended family | 6 | 15.0% |
| | d) Step family | 4 | 10.0% |
| 6. | *Age at menarche* | | |
| | a) 11 years | 0 | 00% |
| | b) 12 years | 1 | 2.5% |
| | c) 13 years | 23 | 57.5% |
| | d) 14 years | 16 | 40.0% |
| 7. | *Source of information* | | |
| | a) Mass media | 7 | 17.5% |
| | b) Teacher | 14 | 35.0% |
| | c) Parents | 14 | 35.0% |
| | d) Others | 5 | 12.5% |
| 8. | *Duration of menstrual bleeding* | | |
| | a) 1–2 days | 3 | 7.5% |
| | b) 3–5 days | 27 | 67.5% |
| | c) 6–8 days | 10 | 25.0% |
| | d) More than 8 days | 0 | 00% |

 

**Table 2.** Pre-test level of knowledge among adolescent girls regarding menstrual hygiene.

| Level of knowledge | Frequency | Percentage |
|---|---|---|
| Inadequate | 7 | 17.5% |
| Moderate | 30 | 75.0% |
| Adequate | 3 | 7.5% |

**Table 3.** Post test level of knowledge among adolescent girls regarding menstrual hygiene.

| Level of Knowledge | Frequency | Percentage |
|---|---|---|
| Adequate | 40 | 100% |

Table 2 illustrates the distribution of adolescent girls' pretest knowledge scores on menstrual hygiene. The results show that 7 (17.5%) girls possessed inadequate knowledge, 30 (75.0%) had moderate knowledge, and 3 (7.5%) demonstrated adequate knowledge (Figure 1).

While in post-test, tt is revealed that 40 (100%) adolescent girls had adequate knowledge regarding menstrual hygiene (Table 3).

The findings indicate that most adolescent girls had either inadequate or moderate knowledge in the pretest, while the majority showed adequate knowledge in the post-test regarding menstrual hygiene (Figure 2).

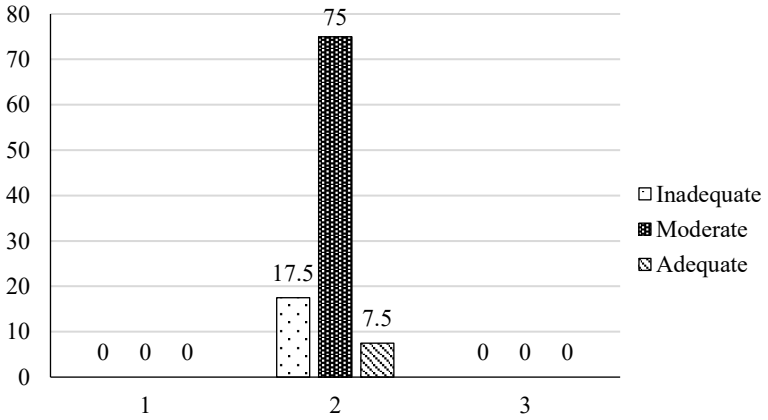


**Figure 1.** Bar diagram showing the knowledge of adolescent girls in pre-test.

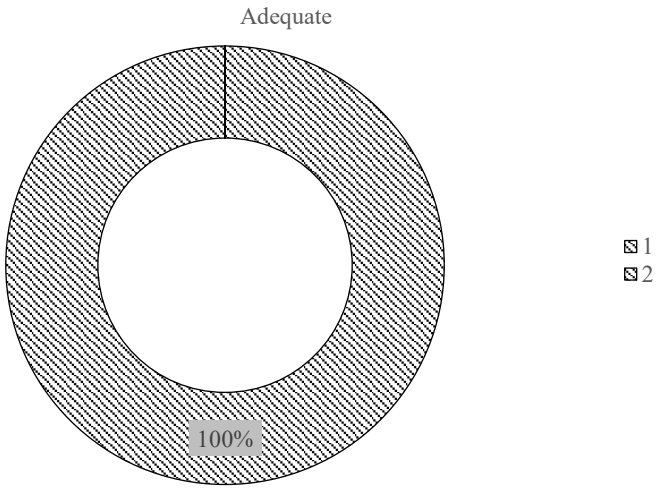


**Figure 2.** Doughnut diagram showing the knowledge of adolescent girls in post-test.

 

**Table 4.** Comparison between mean and standard deviation of pre-test and post-test knowledge regarding menstrual hygiene among adolescent girls.

| S.N. | Level of knowledge | Mean | Mean % | S.D. | Mean difference | T value | Table value | P value |
|---|---|---|---|---|---|---|---|---|
| 1. | Post-test | 3.0000 | 7.54 | .00000 | 1.1 | 14.022 | 2.02 | P<0.05 |
| 2. | Pre-test | 1.9000 | 4.75 | .49614 | | | | |

The Table 4 indicates that the overall mean pretest knowledge score regarding menstrual hygiene among adolescent girls was 1.9000 with a standard deviation of 0.49614, while the post-test mean score was 3.0000 with a standard deviation of 0.00000. A paired t-value of 14.022 shows that there is a significant difference between the pretest and post-test knowledge scores. The mean percentage of post-test knowledge was 7.54, while the mean percentage of pretest knowledge was 4.75, resulting in a mean difference of 1.1. This suggests that the structured teaching program successfully enhanced adolescent girls' knowledge of menstrual hygiene.

Thus, structured teaching program regarding menstrual hygiene was proven to be effective on the level of knowledge among adolescent girls.

The chi square test ($X^2$) was carried out to determine association between the pre-test knowledge and socio demographic variables such as age, religion, educational status, family income, type of family, age at menarche, source of information, and duration of menstrual bleeding, out of which, Age ($X^2_{cal}$=3.884) is less than $X^2_{tab}$=4.30, so it is not significant.

Religion ($X^2_{cal}$=3.210) is less than $X^2_{tab}$=4.30, so it is not significant. Educational status ($X^2_{cal}$=2.910) is less than $X^2_{tab}$=4.30, so it is not significant. Family income ($X^2_{cal}$=3.520) is less than $X^2_{tab}$=3.18, so it is not significant. Type of family ($X^2_{cal}$=1.381) is less than $X^2_{tab}$=3.18, so it is not significant. Age of menarche ($X^2_{cal}$=1.170) is less than $X^2_{tab}$=4.30, so it is not significant. Source of information ($X^2_{cal}$=1.768) is less than $X^2_{tab}$=3.18, so it is not significant. Duration of menstrual bleeding ($X^2_{cal}$=8.734) is more than $X^2_{tab}$=4.30, so it is significant.

## DISCUSSION

The findings of our study were analyzed in relation to previous research. The participants were assessed using demographic data and a knowledge questionnaire [6, 7]. The investigator has to identify the effectiveness of structured teaching program regarding Menstrual Hygiene among adolescent girls. The effort to improve the knowledge of the menstrual hygiene teaching was given by means of flash cards, chart paper, power point presentation, pamphlets on menstrual hygiene. Our study findings revealed the menstrual-related practices among the 40 adolescent girls. In the pretest, most participants had moderate knowledge, with 7 (17.5%) showing inadequate knowledge, 30 (75.0%) moderate knowledge, and 3 (7.5%) adequate knowledge regarding menstrual hygiene [8]. The post-test results revealed that all 40 (100%) adolescent girls achieved an adequate knowledge level, with no participants remaining in the inadequate or moderate categories. There was enhancement in knowledge level in post-test due to information related menstrual hygiene related problem. The mean pre-test score was 1,9000 with the standard deviation .49614, and post test score was 3.0000 with the standard deviation .00000, the mean difference was 1.1, obtained t value 14.022 was statically significant at $p<0.05$; so, it was inferred that the mean post-test level of the knowledge score was more than the pre-test level of the score [9, 10]. Our findings are supported by the study conducted by Prajapati and Patel [1], which reported similar results in improving the knowledge level of adolescent girls regarding menstrual hygiene. Their study also showed a significant improvement in knowledge from the pretest to the post-test.

## CONCLUSION

The findings of our study strongly highlight the need for educational programs to improve menstrual hygiene knowledge among adolescent girls. Educating adolescents can help minimize problems

 

associated with unhygienic menstrual practices and related health issues, ultimately reducing both morbidity and mortality linked to poor menstrual hygiene.

**Limitation**

The small sample size (40) limited the ability to generalize the study findings. Additionally, the use of a structured questionnaire for data collection restricted the depth of information obtained from participants. The study assessed only knowledge, without evaluating attitudes, due to time constraints and limited resources.

**Conflict of Interest**

Not available.

**Financial Support**

Not available.

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