**Research Article**

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# A Study to assess the knowledge and practices related to menstrual hygiene among girls studying at Sri Meenakshi Government Arts and Science College, Madurai.

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## ABSTRACT

**Background:** Menstrual health is a critical aspect of overall well-being, particularly for women, and is influenced by biological, social, and cultural factors. Aim of the Study: The aim of the study is to assess the level of knowledge and practices related to menstrual hygiene among girls studying at Sri Meenakshi Government Arts and Science College, Madurai. **Methodology:** This quantitative, evaluative research adopts a non-experimental (descriptive) design to assess menstrual hygiene knowledge and practices among college girls. The study sample comprised 500 girls selected using a non-probability (convenience) sampling technique. **Result:** The results revealed that 61.6% of participants had an average level of knowledge, while 31.6% demonstrated above-average knowledge, and 6.8% had poor knowledge. Regarding menstrual hygiene practices, 68.6% exhibited good practices, while 25% had poor practices. Statistical analysis indicated a significant correlation between knowledge and practice scores ($r = 0.92$, $p = 0.05$), with socio-demographic factors such as family income, father's occupation, and family structure influencing both knowledge and practices. **Conclusion:** The study highlights the importance of targeted educational interventions to improve menstrual hygiene awareness and practices, especially among girls in rural and economically disadvantaged backgrounds.

**Keywords:** Menstrual health, menstrual hygiene, College girls.

## INTRODUCTION

Menstrual health is a vital component of overall well-being, particularly for women due to their unique biological and reproductive roles. Menstruation, a normal and natural process signifying reproductive maturity, remains burdened by taboos and misconceptions, especially in societies like India. Around 1.8 billion people menstruate globally, yet many lack access to safe sanitary products, clean water, and proper education, affecting their dignity and participation in social and educational activities. WHO and UNICEF identify menstrual hygiene management as a fundamental human right connected to gender equality, health, and education (Pooja, 2025).

A female is biologically defined by the presence of two X chromosomes and the capacity for reproduction through ovulation and childbirth. Beyond biology, being female also reflects gender roles and social identities shaped by cultural expectations (Lydia, 2021).

Menarche, or the first menstrual period, typically occurs between ages 9 and 15 and marks the onset of reproductive capacity. It follows other pubertal developments such as breast growth and pubic hair development and often requires guidance and education to support emotional and physical adaptation during this transition (StatPearls).

Puberty itself is a biological and psychological transformation that prepares the body for reproduction, influenced by hormones like estrogen and testosterone. It involves changes such as body growth, hair development, and emotional shifts that shape self-identity. Proper education during this stage helps adolescents adapt healthily (MayoClinic.org).

The menstrual cycle, averaging 28 days, is controlled by hormones that regulate ovulation and uterine preparation for pregnancy. In the absence of fertilization, menstrual bleeding occurs. Women may experience physical symptoms like cramps or fatigue and emotional fluctuations such as irritability or mood changes, underscoring the importance of menstrual awareness and self-care (NIH.gov).

Monitoring menstrual changes is crucial because they reveal reproductive and overall health. Irregular cycles, heavy bleeding, or pain can indicate hormonal imbalances or disorders such as PCOS or endometriosis. Tracking these patterns helps in understanding fertility and detecting health issues early (Max Healthcare). Practicing menstrual hygiene—using clean products, maintaining cleanliness, and accessing safe sanitation—prevents infection, promotes comfort, and supports confidence and active participation in daily life. It is a cornerstone of women's health and empowerment (CDC).

## NEED FOR THE STUDY

Globally, over 500 million women and girls lack adequate menstrual hygiene facilities (UNICEF, 2021). Around one in ten girls in Africa miss school during menstruation due to the absence of sanitary products and toilets (World Bank, 2020). A South Asian review reported that only 39% of girls used hygienic materials, while 45–70% had insufficient menstrual knowledge (BMC Women's Health, 2020). Cultural taboos remain widespread, affecting more than 70% of girls (UNESCO, 2019).

In India, NFHS-5 (2019–21) indicates that 64% of women aged 15–24 use hygienic menstrual methods, with a clear urban–rural divide (77.3% vs. 48.6%). Poor menstrual hygiene is linked to a 70% higher risk of reproductive tract infections, while inadequate facilities contribute to around 23 million girls dropping out of school annually (Ministry of Health and Family Welfare, 2020).

State-level variations are striking. In Andhra Pradesh, districts like Visakhapatnam show over 75% hygienic product use, attributed to effective state pad distribution and awareness programs. Karnataka records 84.6% usage among young women, yet 44% still rely on cloth, demonstrating rural disparities. Districts such as Gadag and Bagalkot report only 25% exclusive use, whereas Udupi and Kolar exceed 75%, reflecting the need for context-specific interventions and education programs. Kerala leads with 93% hygienic-method use among women aged 15–49, up from 90% in NFHS-4, supported by strong public health initiatives. However, tribal and Scheduled Caste communities record slightly lower usage (86–88%), showing persistent equity gaps. District-level variations, particularly in less urbanized zones, warrant localized assessment of infrastructure and awareness programs to sustain inclusivity and eco-friendly disposal systems.

In Tamil Nadu, NFHS-5 reports 81.2% hygienic-method use among young women, though rural and peri-urban regions still lag behind. Studies from Tirunelveli and Madurai reveal that only 52–58% of girls have adequate menstrual hygiene knowledge. Despite initiatives like the Free Sanitary Napkin Scheme, challenges such as disposal practices, stigma, and uneven school-based education persist. District-focused research in Tamil Nadu could identify targeted strategies to bridge awareness and access gaps, particularly in rural and tribal belts.

## AIM OF THE STUDY:

The aim of the study to assess the level of knowledge and practice on menstrual hygiene among girls studying at selected college in Madurai.

## MATERIALS AND METHODS

### Study Design and Participants

This study adopts a quantitative evaluative research approach with a non-experimental (descriptive) design to assess knowledge and practices on menstrual hygiene among college girls. The target population includes girls studying at Sri Meenakshi Government Arts and Science College, Madurai, and the accessible population consists of girls present on the day of data collection. A sample size of 500 girls was selected using a non-probability (convenience) sampling technique.

### Inclusion and Exclusion Criteria

Participants included in the study were those who were present during the data collection period and who voluntarily agreed to participate in the study. Girls who were absent during the data collection or declined to participate were excluded from the study.

### Tools

The data collection tool consists of three sections: Section A gathers socio-demographic data such as age, course of study, religion, and age at menarche; Section B is a structured self-administered knowledge questionnaire consisting of 10 questions to assess menstrual hygiene knowledge; and Section C is a practice questionnaire with 20 items assessing menstrual hygiene practices. The scoring for knowledge is categorized as adequate, moderate, or inadequate, while practice is categorized as poor, fair, or excellent.

### Ethical Clearance

Ethical approval was obtained from the Principal of Sri Meenakshi Government Arts and Science College, the Medical Officer of the Primary Health Centre, and written consent was secured from each participant. Confidentiality was ensured, and participants were informed about their right to withdraw from the study at any time.

### Data Collection Procedure

Data collection occurred after receiving formal permission from the college principal. The purpose of the study was explained to the participants, and their consent was obtained before administering the self-administered structured questionnaires. Confidentiality of the responses was maintained throughout the study.

### Data Analysis

Descriptive statistics, including frequency and percentage distributions, were used to analyze the socio-demographic data and levels of knowledge and practice. Chi-square tests were employed to assess the association between knowledge and practices on menstrual hygiene with socio-demographic factors.

## RESULTS

### Social-Determinant Variables

The majority of participants (83.4%) were below 18 years of age, and most were enrolled in B.Sc. programs (42.8%). Over half of the mothers (56.6%) and fathers (57.4%) had schooling as their highest level of education. Most fathers (83%) and mothers (86.6%) were engaged in non-government occupations. A large proportion of families (72.2%) had a monthly income below Rs. 10,702, and 85% of participants lived in nuclear families. The majority (92.4%) were Hindu, and 86.2% attained menarche after 12 years of age. Family was the main source of menstrual information (70%), and most participants (89.4%) used sanitary pads.

### Level of Knowledge

Most respondents (61.6%) demonstrated an average level of knowledge regarding menstrual hygiene, while 31.6% had above-average knowledge and 6.8% had poor knowledge. The mean knowledge score was 10.96 ± 3.29, indicating a moderate understanding overall.

### Level of Practice

Regarding menstrual hygiene practices, 68.6% of participants demonstrated good practice, 6.4% had moderate practice, and 25% showed poor practice. The mean practice score was 8.49 ± 2.72, suggesting generally positive menstrual hygiene behaviors.

### Correlation between Knowledge and Practice

A strong positive correlation ($r = 0.92$, $p = 0.05$) was found between knowledge and practice scores, indicating that participants with higher knowledge levels also exhibited better menstrual hygiene practices.

**Table 1: Social-determinant variables of the participants (n = 500)**

| S.no | Social-determinant variables | Frequency (f) | Percentage (%) |
|---|---|---|---|
| **1** | **Age in years** | | |
| | <18 | 417 | 83.4 |
| | 18-20 | 61 | 12.2 |
| | >20 | 22 | 4.4 |
| **2** | **Course of study** | | |
| | B. A | 178 | 35.6 |
| | B.Sc. | 214 | 42.8 |
| | B. B. A | 20 | 4 |
| | Others | 88 | 17.6 |

| | | | |
|---|---|---|---|
| **3** | **Mother's education** | | |
| | Graduate | 33 | 6.6 |
| | Non formal education | 184 | 36.8 |
| | Schooling | 283 | 56.6 |
| **4** | **Father's education** | | |
| | Graduate | 37 | 7.4 |
| | Non formal education | 176 | 35.2 |
| | Schooling | 287 | 57.4 |
| **5** | **Father's occupation** | | |
| | Government | 22 | 4.4 |
| | Others | 415 | 83 |
| | Private | 63 | 12.6 |
| **6** | **Mother's occupation** | | |
| | Government | 13 | 2.6 |
| | Others | 433 | 86.6 |
| | Private | 54 | 10.8 |
| **7** | **Family monthly income** | | |
| | Rs. <10702 | 361 | 72.2 |
| | Rs. 10703-31977 | 75 | 15 |
| | Rs.31978-53360 | 30 | 6 |
| | Rs. 53361 and above | 34 | 6.8 |
| **8** | **Type of family** | | |
| | Joint family | 75 | 15 |
| | Nuclear family | 425 | 85 |
| **9** | **Place of domicile** | | |
| | Rural | 319 | 63.8 |
| | Urban | 181 | 36.2 |
| **10** | **Religion** | | |
| | Hindu | 462 | 92.4 |
| | Christian | 11 | 22 |
| | Muslim | 25 | 5 |
| | Others | 2 | 0.4 |

| | | | |
|---|---|---|---|
| **11** | **Birth order** | | |
| | 1 st order | 290 | 58 |
| | <1 st order | 210 | 42 |
| **12** | **Age at menarche** | | |
| | < 10 yrs | 32 | 6.4 |
| | 10-12 yrs | 37 | 7.4 |
| | >12 yrs | 431 | 86.2 |
| **13** | **Source of information** | | |
| | Family | 350 | 70 |
| | Peer group | 28 | 5.6 |
| | Social media | 68 | 13.6 |
| | All of the above | 54 | 10.8 |
| **14** | **Type of sanitary product** | | |
| | Sanitary pad | 447 | 89.4 |
| | Menstrual cup | 12 | 2.4 |
| | Tampon | 9 | 1.8 |
| | Cloth/towel | 32 | 6.4 |

**Table 2: Level of knowledge (n = 500)**

| Interpretation | Frequency (f) | Percentage (%) | Mean ±SD |
|---|---|---|---|
| Poor knowledge | 34 | 6.8 | 10.96±3.29 |
| Average knowledge | 308 | 61.6 | |
| Above average knowledge | 158 | 31.6 | |

**Table 3: Level of Practice (n = 500)**

| Interpretation | Frequency (f) | Percentage (%) | Mean ±SD |
|---|---|---|---|
| Poor practice | 125 | 25 | 8.49±2.72 |
| Moderate practice | 32 | 6.4 | |
| Good practice | 343 | 68.6 | |

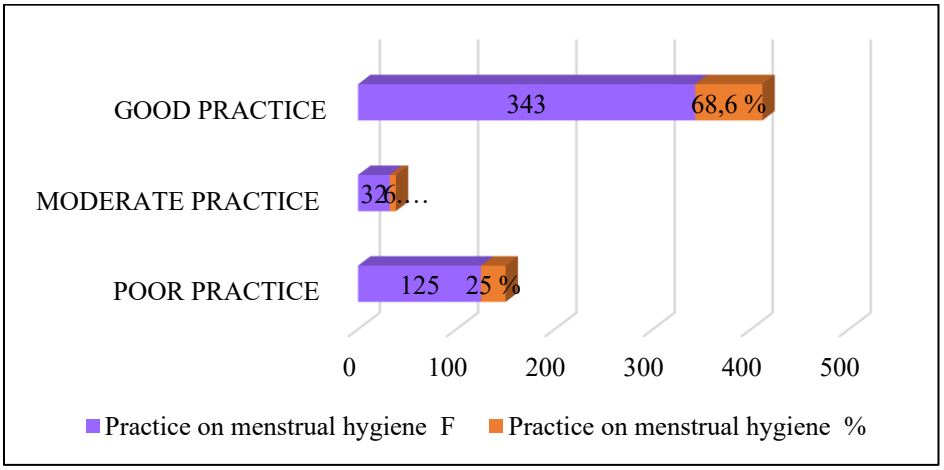


**Figure:1 Bar diagram representing the level of practice.**

**Table 4: Correlation between level of knowledge and practice on menstrual hygiene. (n = 500)**

| Correlation between | Mean gain score Mean ± SD | Karl Pearson Correlation coefficients |
|---|---|---|
| Level of knowledge vs practice score | 10.96 ± 3.29<br>8.49 ± 2.72 | r=0.92<br>p=0.05 |

## DISCUSSION:

The study conducted on menstrual hygiene among college girls revealed that most participants (61.6%) possessed an average level of knowledge, followed by 31.6% who had knowledge above average, and 6.8% who demonstrated below-average awareness. Regarding their practices, 68.6% showed good menstrual hygiene behaviors, 25% had poor practices, and 6.4% displayed moderate practices. Analysis indicated significant links between knowledge levels and socio-demographic factors including the father's occupation, monthly family income, family structure, religion, and sources of information. Additionally, a strong positive correlation ($r = 0.92$, $p = 0.05$) was observed between knowledge and practice scores, suggesting that an increase in knowledge significantly improved menstrual hygiene practices.

## CONCLUSION:

The study concluded that the majority of arts college students in the selected college in Madurai hold positive attitudes toward menstrual hygiene. Statistical analysis using the chi-square test indicated a significant association between the students' attitude levels toward menstrual hygiene and selected socio-demographic variables. This suggests that these demographic factors influence students' attitudes, emphasizing the need for targeted educational interventions to further improve menstrual hygiene awareness and attitudes among this population.

## RECOMMENDATION:

The study recommends replicating the research with smaller samples to enable broader generalization. It also suggests exploring the effectiveness of different teaching methods and aids to enhance menstrual hygiene awareness in future studies.

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