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# A Cross Sectional Study on Menstrual Hygiene Practices Among Adolescent School Girls

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## Abstract

**Introduction:** Menstrual hygiene is an important component of adolescent girls reproductive health and well-being. Inadequate knowledge, poor access to sanitary materials, and cultural taboos can negatively affect health, education, and quality of life. In Nepal, socio-cultural practices and limited resources often hinder proper menstrual hygiene management among school girls. This study was conducted to assess menstrual pattern and hygiene practices during menstrual cycle among adolescent school girls.

**Methods:** A cross sectional study was conducted among 210 adolescent school girls from grade 7 to 10 of secondary schools located at Balkot, Bhaktapur. Data were collected using a pre-tested, self-administered questionnaire covering menarche age, menstrual patterns, hygiene practices and availability of facilities. Data were analyzed using SPSS version 23, with descriptive statistics recorded.

**Results:** A total of 210 participants were included in the study. Mean age of menarche was 11.86±1.09 years. During menstruation, 95.24% used commercially available sanitary pads only. All the participants practiced proper disposal of sanitary materials, and had access to private washing facilities at school. Good menstrual hygiene practice was observed among most of the participants.

**Conclusion:** Menstrual hygiene practices among adolescent school girls in Nepal remains a challenge. Majority of participants in our study reported availability of separate girls toilet with access to water and soap/handwash, however sanitary pads weren't available at school. Improving school based menstrual education, ensuring the availability of sanitary pads, and enhancing water, sanitation, and hygiene infrastructure in schools are essential to promote better menstrual health and reduce school absenteeism.

**Keywords:** adolescent girls; menstrual hygiene; sanitary pads

## Introduction

Menstruation is a natural physiological phenomenon that marks the onset of a woman's reproductive phase in life.[1] For centuries, menstrual hygiene has remained a significant concern for women and girls across all age groups.[2-4] Even within educated communities, long-standing practices and misconceptions about menstrual cycle continue to be widely observed. Due to social stigma, cultural traditions, and religious restrictions, menstrual practices are often seen as a major barrier to proper menstrual hygiene management.[5]

Variations in menstrual pattern is frequently observed among young females.[3] Disorders in cycles or its irregularities are a major gynecological problem among female adults especially adolescent[4,5] and a major source of anxiety to them and their family.

Menstrual hygiene encompasses essential practices such as the use of sanitary pads or other clean and soft absorbents, proper cleaning of the genital area, safe disposal of used materials, and addressing other specific healthcare needs during menstruation. Maintaining good hygiene during menstrual cycle is crucial as it helps prevent adverse health outcomes. In many parts of Nepal, however, menstrual hygiene management is still regarded as a taboo subject. Traditional and supernatural beliefs

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associated with menstruation can negatively influence the self-esteem, health, and educational opportunities of adolescent girls.[6–8]

Although there are several literature on various aspects of menstrual hygiene, limited studies in Nepal had focused on finding menstrual health data along with hygiene practices.[4,6,7] Therefore, this study was conducted to identify menstrual health status and menstrual hygiene practice among school girls in Bhaktapur district, Nepal. The results of this study may offer valuable insights for healthcare professionals and administrators in designing appropriate policies. Additionally, the findings can serve as a baseline for future research.

## Methods

A descriptive cross sectional study was conducted among school girls of 3 secondary schools of Balkot, Bhaktapur. This study was conducted from June to August 2025 after obtaining ethical clearance from institutional review committee of Kathmandu Medical College (Ref. 25052025/08). Adolescent girls from grades 7 to 10 who reported menarche and gave verbal consent were included in the study. Written consent was obtained from their parents.

The participants were provided with pre-designed and pretested structured questionnaire. The questionnaire included various components of menstrual pattern, menstrual hygiene such as material used during menstruation, disposal practices of such materials (home and school), and facilities provided at school.[6,7] A total of 210 students were included in the study.

Sample size was calculated using the formula:

$n= [z^2pq/e^2]/1+ z^2pq/e^2$

n = 192

with 95% level of confidence interval (z=1.96) and 5% margin of error (e=0.05).

p=0.67, 67% of respondents practiced good menstrual hygiene in a study done by Bhusal.[7]

Considering 10% non-response rate, the final sample size was adjusted to 210.

Girls who did not report menarche till the time of study and those who were absent on the day of the data collection were excluded from the study. Data was collected from 3 secondary schools of Balkot, Bhaktapur. by purposive sampling method. The study's objective was explained to the principal and class teachers of respective schools and the parents of the girls before the start of the study. The questionnaire was well explained to all of the participants and data was collected in the classroom with the help of class teacher. Data was collected during leisure time without affecting the regular classes. Privacy of the participants was maintained. Thus obtained information was kept confidential and used only for this research.

Statistical Analysis: Questionnaire sheets were collected, checked for errors, missing values, outliers, and inconsistencies. Data was then entered in SPSS version 23, codes were assigned wherever needed. Descriptive statistics like mean±SD, frequency and percentage were obtained.

## Results

A cross sectional study was conducted on menstrual hygiene practices among 210 adolescent school going girls by using purposive sampling method. Findings of this study are as follows.

**Table 1:** Menstrual pattern and related characteristics among adolescent school girls (N = 210).

| Menarche Age (mean±sd) years | | 11.86±1.09 | Range: 10 – 14 years | N= 210 |
|---|---|---|---|---|
| **Characteristics** | | **Frequency (n)** | **Percentage (%)** | **Total** |
| Cycle length | <21 days | 11 | 5.2% | 210 |
| | 21-35 days | 177 | 84.3% | |
| | >35 days | 22 | 10.5% | |
| Irregular Cycle | Yes | 78 | 37. 1% | 210 |
| | No | 132 | 62.9% | |
| Duration of menstruation | 3-7 days | 185 | 88.1% | 210 |
| | <3 days | 10 | 4.8% | |
| | >7 days | 15 | 7.1% | |
| Dysmenorrhea | Yes | 112 | 53.3% | 210 |
| | No | 98 | 46.7% | |
| Premenstrual syndrome | Yes | 138 | 65.7% | 210 |
| | No | 72 | 34.3% | |
| Severity of PMS | Mild | 56 | 40.6% | 138 |
| | Moderate | 63 | 45.7% | |
| | Severe | 19 | 13.8% | |
| Absenteeism from school during menstruation | Yes | 72 | 34.3% | 210 |
| | No | 138 | 65.7% | |

Table 1 shows different parameters of menstrual cycle. The mean age at menarche among the participants was 11.86±1.09 years, with the earliest onset at 10 years and the latest at 14 years. The majority 62.9% reported that their menstrual cycles were regular, while 37.1% experienced irregular cycles. Most (84.3%) of the participants reported a cycle duration of 21-35 days. Only 7.1% experienced bleeding for more than 7 days. Dysmenorrhea was experienced by 53.3% of study participants, while premenstrual syndrome was reported by 138 (65.7%) participants.

**Table 2:** Menstrual hygiene practice and related characteristics among adolescent school girls (N = 210)

| Characteristics | | Frequency (n) | Percentage (%) | Total |
|---|---|---|---|---|
| Type of Absorbent used | Disposable sanitary pad | 200 | 95.24% | 210 |
| | Cloth | 0 | 0% | |
| | Both (pad &cloth) | 10 | 4.76% | |
| Reuse of sanitary pad/cloth | Yes | 0 | 0% | 210 |
| | No | 210 | 100% | |
| Frequency of changing sanitary pads/cloth | <3 times a day | 91 | 43.33% | 210 |
| | ≥3 times a day | 119 | 56.67% | |
| Cleaning/washing of external genitalia | ≥2 times a day | 123 | 58.57% | 210 |
| | ≤2 times a day | 30 | 14.28% | |
| | Only during bathing | 57 | 27.15% | |
| Materials used for washing | Soap and water | 36 | 17.14% | 210 |
| | water | 174 | 82.86% | |
| Frequency of bathing during menstruation | Every day | 21 | 10% | 210 |
| | Occasional | 86 | 40.95% | |
| | Only on day 4 | 103 | 49.05% | |
| | Never | 0 | 0% | |
| Disposal of sanitary pad/cloth | Dustbin | 210 | 210% | 210 |
| | Bury | 0 | 0% | |
| | Burn | 0 | 0% | |
| Availability of Separate girls toilet at school | Yes | 210 | 100% | 210 |
| | No | 0 | 0% | |
| Availability of water at school toilet | Yes | 210 | 100% | 210 |
| | No | 0 | 0% | |
| Availability of soap/hand wash at school toilet | Yes | 210 | 100% | 210 |
| | No | 0 | 0% | |
| Dust bin for pad/cloth disposal | Yes | 210 | 100% | 210 |
| | No | 0 | 0% | |
| Sanitary pads available at school | Yes | 0 | 0% | 210 |
| | No | 210 | 100% | |

Table 2 shows parameters of menstrual hygiene practices. During menstruation, 95.24% of the girls used commercially available sanitary pads only, while 4.76% reported using cloth and sanitary pad. Only 56.67% reported changing pads/cloth at least three times per day. 49.05% participants reported bathing on only day 4 of menstruation. Only 10% practised daily bathing during menstruation.

Proper disposal of sanitary materials was practised by all of them by wrapping and discarding in a dustbin. All of respondents reported that their schools had a functional, private wash-room for girls. Access to water and soap for hand washing was available. Sanitary pads were not available in school for emergency.

## Discussion

Menstrual cycle is a natural and essential part of a woman's life. It functions as an important parameter of sexual and reproductive health status. Menarche is influenced by factors like nutrition, socioeconomic background, general health and genetic inclination. Normally menarche occurs between the ages of 12 and 13 years. In the present study, the mean menarche age was similar with findings from previous research conducted in Nepal.[12]

Majority of participants (84.3%) reported a normal cycle length (21-35 days), findings comparable to other studies.[12,14] In our study, normal flow duration of 3-7 days was found among 88.1% of participants, which is also consistent with earlier researches.[12,14] In contrast, only 71.6% of participants reported a normal blood flow duration in a research done by Nabila et al.[13]

Irregular menstrual cycles and dysmenorrhea were reported as the commonest menstrual disorders. In current study, 78 participants (37.1%) reported irregular cycles, a prevalence comparable to similar studies.[11,13,15] Sharma et al.[12] found high rate (64.2%) of irregular cycles in their study in Pokhara. Higher prevalence of Premenstrual syndrome (PMS) was observed in our study, affecting 65.7% of participants. Additionally, Nabila et al.[13] documented a higher rate of PMS in their research. 72 students reported school absenteeism during menstrual period.

The present study assessed adolescent girls' practices regarding menstrual hygiene. The findings highlight that majority of participants demonstrated satisfactory menstrual hygiene practices. In our study, majority of students used sanitary pads (95.34%) in contrast to rural based studies in Nepal[6,7] and India,[1,5] possibly due to better market access and socioeconomic status in the study area. However, a small segment of girls still relied on cloth along with sanitary pads (4.76%), which if not properly cleaned and dried can increase the risk of infections. However, no one reported reuse of cloth. 56.67% of girls in our study reported changing sanitary pad/cloth ≥3 times a day.

Only 10% of the girls reported daily bathing during menstruation, 49.05% reported taking bath on fourth day of menstruation. which is lesser than the findings of Chaudhary et al. (2019).[1] Present study revealed that 58.57% girls were having good practice of satisfactory cleaning (≥2 times a day) of external genitalia. However, 27.15% reported cleaning only during taking bath. Variable findings have been reported by different authors in this regard.

Disposing of used sanitary napkins in dustbins was the most common method among the participants. Similar disposal practices have been reported in several other studies.[2-4] All students reported the availability of toilet facility at school, with availability of water, soap/hand wash and dust bin for sanitary pad disposal.

The present study has some limitations. Since purposive sampling was employed, the findings may be subject to sampling bias and cannot be generalised to all adolescent girls. The study relied on self reported information, which may have introduced recall bias and social desirability bias, as menstruation is often considered a sensitive topic and participants might have underreported or misrepresented their practices. To minimize bias, clear and objective inclusion and exclusion criteria were established to ensure consistency in participant selection. Participants were chosen from multiple schools representing diverse socio-economic and cultural backgrounds to enhance the representativeness of the sample. Data collectors were adequately trained to maintain neutrality and avoid leading questions, thereby reducing interviewer bias.

## Conclusion

Inadequate access to sanitary products in schools has been consistently identified as one of the major barriers to effective menstrual hygiene practices, leading to discomfort, reduced participation in class, and increased absenteeism during menstruation. In Nepal, several government initiatives to provide free sanitary pads particularly in public schools has been initiated. However, none of our study participants reported availability of sanitary pad at school. To ensure sustainable improvement, regular and adequate supply of sanitary pads, awareness programs for both students and teachers is essential. Upgrading water, sanitation, and hygiene infrastructure, coupled with the inclusion of menstrual/reproductive education in schools, is required.

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