



## A Cross-Sectional Study on Practices & Unmet Need of Menstrual Hygiene of Adolescent Girls of Rural Area of Haryana

Sharma M\*, Lall Manveen K\*\*, Adlakha M\*\*, Chauhan N<sup>^</sup>, Srivastav M<sup>#</sup>, Ahlawat V<sup>@</sup>

\*Associate Professor, Department of Community Medicine, AFSMS & RC, Faridabad

\*\*Associate Professor, Department of Physiology, AFSMS & RC, Faridabad

<sup>^</sup> Assistant Professor, Department of Community Medicine, Amrita SOM, Faridabad

<sup>#</sup> Statistician, Department of Community Medicine, AFSMS & RC, Faridabad

<sup>@</sup> Postgraduate student, Department of Community Medicine, AFSMS & RC, Faridabad

*(Received: 07 January 2024*

*Revised: 12 February 2024*

*Accepted: 06 March 2024)*

### KEYWORDS

Menstrual hygiene, adolescent girls, sanitary pads, MPNS-36

### ABSTRACT:

#### Introduction

The use of a hygienic method of menstrual management is imperative for health and personal hygiene and, vital for empowerment, development and dignity of adolescent girls.

#### Objectives

The main objective of the study was to assess the existing menstrual practices and unmet needs of these practices of adolescent girls of Pali village of Haryana.

#### Material and Methods

In a community based cross-sectional observational study in Pali village of Haryana. 255 adolescent girls were interviewed regarding menstrual hygiene practices and their level of satisfaction. Systematic random sampling technique was used for selection of respondents. Predesigned and pretested questionnaire was used in local language.

#### Results

The mean age of girls in this study was 14.7 whereas, the mean age for attainment of menarche was 12.5 years. Majority (80%) belonging to lower socioeconomic status. Mother of majority (89%) of these girls were housewives and major source of information. Most (84.3%) of them used sanitary pads.

Mean score of MPNS -36 was 1.47 and SD 0.02 which indicates unmet needs regarding menstrual hygiene management. In domain wise scoring, Mean score was less than 2, in transport and school environment needs, material reliability concern and change and disposal insecurity.

#### Conclusions

Though there is increased sanitary pad usage, measurement of menstrual hygiene practices should also include the level of satisfaction experienced by the adolescent girls when they are outside their home. Mothers are major source of information in most cases but school curriculum should integrate menstrual hygiene to overcome social myths and cultural beliefs and practices.



## INTRODUCTION

Adolescence is a period that requires specific attention as it marks the onset of menarche, an important milestone. In females, good hygienic practices during menstruation are crucial to maintain a healthy life. Menstruation is surrounded by various psychological and religious barriers due to lack of knowledge about the scientific process of menstruation and it is an important issue concerning morbidity and mortality of female population<sup>1</sup>. It is during this period a woman is regarded most vulnerable for developing any kind of reproductive tract infections, urinary tract infections, and various sexually transmitted diseases<sup>2</sup>.

Improving the accessibility of a safe water supply, hygiene, sanitation facilities and affordability of menstrual products and promoting maternal education are mandatory and should be part of government-level public health policy. The girls from rural areas have poorer hygienic habits, in comparison to the urban areas. Cultural restrictions such as sitting outside the house during menstruation and restricting play are more in the rural girls<sup>3</sup>. The United Nations Population Fund (UNFPA) and the Government of India in their decadal Census statistics consider adolescents to include persons aged 10–19 years. Under this population sub-group, there are about 1.19 billion people globally. There are 253.2 million adolescents in India, of which, 119.8 million are girls (47.3 per cent). The health and well-being of adolescents is a key determinant of the country's overall health scenario<sup>4</sup>.

Much of menstrual health and hygiene research and practice is focused on understanding and improving women's and girls' experiences of menstruation. Yet, there are few tools available to quantitatively capture aspects of this experience or track improvements over time. The measuring practices undertaken (for example, the type of menstrual material used such as a pad or cloth, or the location of disposal) fail to capture how women and girls experience these behaviours. We do not know if the practices undertaken are preferred, acceptable, or experienced positively.

Menstrual practices are the actions undertaken to manage menstrual bleeding. This includes accessing, storing, and

transporting acceptable menstrual materials (e.g., pads, cloth), changing and disposing of used materials, washing and drying reusable materials, as well as cleaning the hands, genitals, and body. In assessing menstrual practices, it is also important to capture the environments women may use to undertake these practices. That is, the spaces women use to change materials, dispose of them, and clean their bodies and materials. For example, the sanitation facilities that the adolescent girls used throughout the day to change their menstrual materials or the locations they used to dry reusable menstrual materials.

Further, unmet needs regarding menstrual hygiene were consistently described as leading to distress and had implications for participants' health, well-being, education, and social participation. There were few tools available to measure this aspect. Girls had expressed varied experiences of comfort, reliability, acceptability, and concerns about cleanliness, privacy, and safety related to the practices undertaken to manage menstrual bleeding<sup>5</sup>. Therefore, this study aimed to estimate the pooled prevalence of good menstrual hygiene practices and associated factors among adolescent girls.

## **OBJECTIVES**

The main objective of the study was

1. To assess the existing menstrual practices of adolescent girls of Pali village of Haryana.
2. To find out the level of satisfaction and unmet needs of their menstrual hygiene practices using the MPNS-36 questionnaire<sup>5</sup> was the second objective.

## **MATERIAL AND METHODS**

### **Study design**

A cross-sectional community-based observational study was carried out in a rural area of Haryana. The study was conducted from September 2023 to February 2024 in Pali village.

### **Sample size calculation and sampling technique**

Considering the prevalence of sanitary pad usage among school-going urban and rural adolescent girls as 70%, [6] with  $\alpha = 10\%$ ,  $\beta = 20\%$ , error of margin = 5%, the minimum sample size was found to be 227 using the formula,  $n = P \times (100 - P) \times z^2/d^2$  where  $P$  is the anticipated prevalence;  $d$  is the desired precision;  $z$  is the



standard normal distribution for the desired confidence level.<sup>[6]</sup> We finally took a sample of 255 adolescent girls. A systematic random sampling technique was used for collection of required samples. Pali village has around 1000 households, with 790 adolescent girls. All household was numbered from 1 to 1000, The first household was selected using the lottery method between household number 1 to 3, and then every 3<sup>rd</sup> (sampling interval) household was selected. The calculation of sampling interval was done using the formula – total sample/sample size (790/255 =3).

A total of 255 girls were interviewed by a trained female investigator. A pre-tested and pre-structured questionnaire translated into the local language was used to collect data. During data collection, personal identifiers such as the names and phone numbers of the participants were not recorded to ensure confidentiality; instead, numbers were assigned for coding purposes. The parameters in this questionnaire included demographic details, age at menarche, awareness of menstruation, and sources of information about menstruation. Socioeconomic status was assessed using the Modified BG Prasad Scale <sup>[7]</sup>. Menstrual hygiene practices and their level of satisfaction were assessed during the interview.

## Study instrument

The MPNS-36 questionnaire was used<sup>5</sup> which is a self-report quantitative tool. The scale asks about individual experiences that must be reported by each participant.

Another set of questionnaires for socio-demographic profiles and practices related to menstrual hygiene was used.<sup>[8]</sup> It often makes sense to deliver the tool as a whole so that participants can familiarise themselves with the response options (on the 4-point response scale) and standardize responses across each item asked. A pilot study was conducted beforehand.

The time required for each interview was around 20-30 minutes. After collecting data, any queries of students regarding menstrual hygiene were solved and health education regarding the same was given in small groups at Anganwadis. MPNS -36 questions have been divided into five categories under the heading of Material and home environment needs, transport and school environment needs, material reliability concerns, change

and disposal insecurity, and reuse category. The reuse category was optional, wherever required.

## Inclusion and Exclusion criteria

Adolescent girls of age 10 to 19 who had achieved menarche residing in Pali village and were willing to participate were included. Severely ill and not willing to participate were excluded.

## Ethical Consideration

Ethical permission was taken from the Institutional Ethics Review Committee. Written informed consent in local vernacular was taken from girls and their parents before the interview.

## Statistical analysis

Data was compiled in Microsoft Excel. Mean, proportion, percentages, and standard deviation were calculated from the data using SPSS version 21.

## RESULTS

In this study, data collection was done on 255 adolescent girls from Pali village. The mean age of adolescent girls in this study was 14.7 years whereas, the mean age for attainment of menarche was 12.5 years. The majority (80%) belong to lower socioeconomic status. Mothers of the majority (89%) of these girls were housewives. (Table 1)

The mean duration of menstruation was 4 days. Most (96%) of them were aware of menstrual hygiene and the mother was the source of information for 85% of girls. (Table2)

The majority (84.3%) of them used sanitary pads and only 15.7 percent girls used cloth during their menstrual cycle. More than 80% changed pad 2 to 3 times a day. About 95 % of respondents used dustbins for disposal. More than 80% cleaned their vagina with water three to four times a day followed by 17.6% who used soap and 4.8% who used Dettol for genital cleaning. (Table 3)

The mean score of MPNS -36 was 1.47 and SD was 0.02. The mean score was not significantly associated with demographic characteristics. The mean score was less than 2, in transport and school environment needs, material reliability concerns, and change and disposal insecurity. This indicates unmet needs regarding the



above domains. Whereas the mean score was satisfactory for Material and home requirement needs.(Table 4)

## **DISCUSSION**

Adolescent health is very important and menstrual hygiene management is a core requirement for safe motherhood. It is known that menarche is an important milestone in a girl's life as it marks the beginning of the reproductive phase. A total of 255 adolescent girls were interviewed regarding menstrual hygiene management in this study. The mean age of girls was 14.7 years and the mean age of attainment of menarche was 12.7 years.

In a study by Vidhi et al, a total of 127 subjects were studied, out of which a majority were in the age of 18 years (51.2%), 24.4% were in the age of 17 years, and 24.4% were in the age of 19 years. The mean age of menarche was  $14 \pm 2$  years<sup>9</sup>. Another study by Thakre et al. showed that the age of menarche ranged from 12 to 17 years<sup>10</sup>.

The majority of them were aware of menstrual hygiene and the mother was the source of information. Mothers of the majority of these girls were housewives. In a study by Garg et al, again mother (62.6%) was the main source of information regarding menstruation followed by teachers (24.3%) and then by friends (12.2%)<sup>11</sup>. Also, in a study by Pragathi et al, the mother was the prime source of information for 71% of the respondents. In this study, the majority belonged to lower socioeconomic status. Also, in this study

, the girls primarily belonged to poor families (69.4% BPL). Here, the main reasons for not using sanitary pads were their high cost (19%) and lack of family support (20%)<sup>12</sup>.

The majority (85%) used sanitary pads, while only 15.7 percent girls used cloth during menstrual cycle. Similarly, in a study by Sonali et al, about 73.79% of girls were using sanitary pads, while 26.21% of girls were using clothes<sup>13</sup>.

The mean duration of menstruation was 4 days in this study. In a study by Sonali et al, the duration of bleeding was two to six days for the majority of the girls (87.93%). The menstrual cycle was regular for most adolescent girls (85.86%)<sup>13</sup>.

More than 95 % used dustbins for disposal. In another study, regarding the disposal of sanitary napkins, a few girls also reported burying the used sanitary napkins but the burning was not preferred. The study by Chander et al. reported disposal by burning or in the dustbin<sup>14</sup>. Another study reported that 90.6% practiced disposing of the absorbent material in the trash can<sup>9</sup>.

In this study, more than 80% changed the pad 2 to 3 times a day, 9.8% changed more than four times a day and about 5.9 percent used one sanitary pad a day. In a study by Pragyan et al, they also knew that sanitary pads should be changed at least 3–4 times per day<sup>15</sup>.

More than 80% cleaned their vagina with water three to four times a day followed by 17.6% who used soap and 4.8% who used Dettol for genital cleaning. In a study by Vidhi Parikh et al nearly half of the adolescent girls used water only for cleaning, whereas 9.4%, 9.4%, and 30.5% used soap and water, Dettol, and other agents, respectively.<sup>9</sup> In a study conducted by Dasgupta et al.,<sup>16</sup> it was found that 97.5% of girls used both soap and water for cleaning. These differences in practices could be because the students are being taught the basics of hygienic practices as a part of their curriculum.

In this study, the Mean total score of MPNS-36 was 1.47 and SD 0.02. All 36 questions of MPNS-36 were divided into 5 domains. The material and home environment needs mean score was good, whereas the score was poor in transport and school environment, menstrual reliability concerns, and change and disposal security domains.

In another study in rural Haiti, MPNS-36 scoring was used to assess menstrual hygiene among adolescent and young adult females. The mean score for materials and home environment was 2.3 (SD: 0.16) and 50% of participants had unmet needs related to materials and home environment<sup>17</sup>. The mean score for transport and school environment needs was 2 (SD: 0.24); The mean score for menstrual reliability concerns was 1.8 (SD: 0.17) The mean score for change and disposal security was 2.2 (SD: 0.17)



## **CONCLUSIONS**

Though there is increased sanitary pad usage, measurement of menstrual hygiene practices should also include the level of satisfaction experienced by adolescent girls when they are outside their homes. Mothers are a major source of information in most cases but school curricula should integrate menstrual hygiene to overcome social myths and cultural beliefs and practices.

It was observed that the use of hygienic materials has increased to about 75%, but still, behaviour change communication regarding menstrual hygiene practices has to be introduced regarding the frequency of material change, and proper disposal techniques of sanitary waste. Adequate water supply and availability of soap have to be made more rigorously in schools. To increase the awareness about the use of menstrual hygiene products which provide environmental sustainability and are also cost-effective.

Mothers should encourage their daughters to maintain personal hygiene. It is also essential for the teachers, to impart reproductive health education, including menstrual hygiene to their students. Schools should be another entry point for improving menstrual health by integrating menstrual hygiene into the curriculum, provision of toilets and even supplying sanitary napkins. Visits to schools by health staff should also focus on imparting health education regarding menstrual hygiene practices and make them aware of government schemes for the same

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#### Tables:

**Table 1: Socio-demographic characteristics of study subjects (n = 255)**

Characteristics	n (%)
Age Group (in years)	
10-14	121 (47.5)
15-19	134 (52.5)
Religion	
Hindu	249 (97.6)
Muslim	6 (2.4)
Type of Family	
Nuclear	133 (52.2)
Joint	122 (48.8)
Per capita income	
Upper (I)	3 (1.2)
Upper Middle (II)	12 (4.7)
Middle (III)	44 (17.3)
Lower Middle (iv)	105 (41.2)
Lower (v)	91 (35.7)
Working status of mother	
Housewife	226 (88.6)
Working	29 (11.4)

**Table 2**

Menstrual profile	n (%)
Duration of menstrual flow	
≤2	33 (12.9)
3-5	184 (72.2)
>5	38 (14.9)
Menstrual cycle	
Regular	181 (71.0)
Irregular	74 (29.0)
Amount of menstruation	
Excess	30 (11.8)
Normal	192 (75.3)
Scanty	33 (12.9)
Are you aware of menstruation & menstrual hygiene?	
Yes	244 (95.7)
No	11 (4.3)
Who is your source of information (after menarche)	
Friends	4 (1.6)
Mother	215 (84.3)
Sister	22 (8.7)
Mother & Sister both	8 (3.1)
Others	6 (2.3)

**Table 3:**

Variables	n (%)
What kind of material are you using during menstruation	
Cloth	40 (15.7)
Pad	215 (84.3)
How many pads/ clothes do you change in a Day	
1	15 (5.9)
2	102 (40.0)
3	113 (44.3)
4	25 (9.8)
How do you dispose your used pad/cloth	
Dustbin	244 (95.7)
Burn/Flush	11 (4.3)
How many times do you wash your genitals in a Day during menstruation	
<3	31 (12.2)
≥4	224 (87.8)
What are you using for cleaning purpose	
Dettol	12 (4.8)
Soap	45 (17.6)
Water	198 (77.6)



**Table 4**

Variables	Mean score	S.D.
Material and home environment needs	2.4	0.16
Transport and school environment need	1.9	0.11
Material reliability concerns	1.2	0.15
Change and disposal insecurity	0.4	0.18

## Legends to Tables

**Table 1: Socio-demographic characteristics of study subjects (n = 255)**

**Table 2: Distribution of menstrual profile (n = 255)**

**Table 3: Distribution of menstrual hygiene variables (n = 255)**

**Table 4: Mean score of various domains**