



## An empirical study of managing menstrual hygiene in schools: A special reference to Government Upper Primary Schools in District Sambhal, Uttar Pradesh

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### ABSTRACT

The present study was intended to assess the knowledge, attitude and practice related to menstruation and menstrual hygiene and their determinants among rural school girls of the district of Sambhal in Western Uttar Pradesh. Adolescence is a crucial period for girls, marked by the onset of menstruation and associated morbidities. Basic information about the sociodemographic characteristics of the rural school girls, their exposure to mass media and the events related to menarche were also assessed to establish their relationship with the dependent variables. Studies conducted worldwide on menstrual hygiene revealed critical gaps in awareness, sanitation practices and policy. Using a descriptive analytical survey design and multistage sampling, the knowledge, attitude and practices on menstrual hygiene among 563 school girls of 13 to 17 years studying in standards 7 and 8 were identified. Multivariable regression analysis has shown that the knowledge of the respondents on menstrual hygiene was significantly associated with mother's education, attitude of student, and their habits of reading newspaper and periodicals. It was found that the attitude was significantly associated with the educational level of student, presence of grandmother in their house and mother's education. The practice of menstrual hygiene was significantly associated with age of the student and their standard of living index.

**Keywords:** menstruation, menstrual hygiene, menstrual morbidities, health seeking behavior, rural school girls

### Introduction

Menstruation is unique to females in the reproductive age group and it begins during puberty usually between 10 to 14 years. The rhythmic menstrual cycle is due to the coordinated activity of the hypothalamic-pituitary-ovarian axis. The age of menarche in a girl is influenced by many factors as geographic location, nutrition, environment and indulgence in strenuous physical activity. Menstruation is manifested by periodic vaginal bleeding; the amount of blood with each period approximates 50-80ml. Each menstrual cycle is of 28 days duration, which is measured from the first day of bleeding in a month to the first day of bleeding during the next month. Each period lasts for 3 to 5 days, and this cycle continues until the woman attains menopause usually at the age of 50 years.

Even though menstruation is a natural biological process, it is often linked with several taboos and myths. Girls experience fear, shame, guilt and embarrassment during menarche. Studies have proved that those girls who were aware of menarche had more positive attitude towards menstruation. Proper body hygiene is essential during menstruation, which

includes a daily bath, wearing clean dresses, changing the menstrual protective pads at least every six hourly and disposing them appropriately, and washing hands with soap and water each time attending to toilet. In order to maintain hygiene, the girl should have access to clean toilets, adequate privacy, safety and water with sanitation facilities.

Girls often have limited knowledge on the scientific aspects of menstruation which lead them to improper hygiene and consequently to various reproductive health problems. Each period may be accompanied by severe discomfort and dysmenorrhea in majority of the girls. Faulty and unhygienic management may result in several infections of the urinary and reproductive tracts. Many girls feel uncomfortable in talking about their menstrual problems as there is a silence that surrounds the menstruation all over the world. Even there is an inhibition in discussing the topic between mothers and daughters. Most of the mothers do not have correct information and skills about menstrual hygiene; hence they convey false attitudes, beliefs and practices.

It has been known that many people are unaware of the challenges faced by menstruating women and girls worldwide. She has pointed out five things about menstruation hygiene. The first point is that menstruation is heavily stigmatized due to lack of awareness and education about the basics of menstruation. According to her, many women and girls do not have access to feminine hygiene products. Even in urban India, 43% of girls use reusable cloth, which is often washed without soap or clean water. Drying of these cloths under the sunlight or storing them hygienically till next use is difficult. A study conducted in Nairobi, revealed that adolescent girls reported having sex with older men to afford basic needs like

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sanitary pads. About 73% of Bangladeshi garment workers reported they miss work for an average of six days per month due to vaginal infections caused by use of unsanitary menstrual pads. The third point that she has announced was that there is discrimination against women during menstruation so that they lack access to places having private toilets. Further, she has noted that many girls are terrified during menarche because they lack information. She has suggested both women and men need to be educated about menstrual hygiene to change the social stigma.

Many schools do not have adequate sanitation facilities to support girls and female teachers to manage menstruation hygienically and with dignity. Limited access to functioning toilets remains a barrier for proper menstrual hygiene. Surveys conducted in 2012 have revealed that 40% of the government schools lacked functioning toilet and another 40% did not have a separate toilet for girls. Several studies have reported that girls do not change their pads while at school (Thakre et al., 2011). Even when toilets are available, the use of such toilets during menstruation is limited because of existing cultural practices and taboos. Disposal of menstrual waste is another challenge faced by girls. It varies from throwing the used item unwrapped or wrapped into fields, keeping pads somewhere in the toilet itself, flushing the pads into the closets, disposing them with kitchen wastes or burying and burning. Incinerators installed in some of the schools also possess several negative impacts. It is estimated that India generates about 9000 tons of menstrual waste every year, which is sufficient to fill about 24 hectares (Manasi, 2016). Poor quality sanitation protection can cause stress and embarrassment due to the fear of staining clothes. Teachers also may not give due consideration to the girls' needs. Girls may become absent from school during menstruation or drop out completely, violating their right to equality and education.

Apart from the social issues, girls often suffer from many physical and emotional problems during menstruation. The morbidities associated with menstruation can be warning signs of many serious gynecological problems. It has been revealed that poor menstrual hygiene can even lead to cervical cancer. Heavy bleeding makes the girls prone to develop anemia. The secret nature, and the myths and misconceptions associated with menstruation prevent the girls from getting appropriate medical care for their menstrual morbidities.

Menstruation is a normal physiological phenomenon having many issues, challenges and consequences for all women around the world, regardless of their age, geographic location or social class. Policies to improve menstrual hygiene in India have been initiated yet did not receive top priority. Little attention has been given to identify the perception of rural school girls regarding menstruation, their menstrual morbidities and their treatment seeking behaviour. Hence the current study was undertaken to focus the rural school girls and their menstrual hygiene management.

## Results

Socio-demographic data Socio-demographic characteristics of the rural school girls analyzed in this study have been described on the basis of the standard in which the girls study, their age in completed years, birth order, monthly income of family, presence of grandmother in the family, educational level and occupation of parents, the standard of living index (SLI) and the respondents' exposure to commonly available mass media.

- In the present study, 56% of the girls were 7th standard students and 44% were 8th standard students.

- More than 17% of the students had completed 13 years of age, 21% had completed 14 years, 22% were 15 years and 19% completed 17 years. The Mean age of the students was calculated as 15.03 years.

- Classification of the students based on their birth order disclosed that an equal proportion (42.5%) belonged to first and second ordinal positions. Twelve percentages of the girls were the third child and only three percentage reported as the 4<sup>th</sup> or 5<sup>th</sup> child in the family.

- Reports about the occupation of the parents of the students in this study unveiled that 84% of the fathers and 61% of the mothers were manual laborers, mainly engaged in agricultural works. About eight percentages of the parents were self — employed. Slightly more than seven percentage were employed either in private offices or govt. offices. About 28% of the mothers were unemployed.

As the research question was related to menstrual hygiene, an attempt was made to understand the events related to the first menstruation (menarche) of the respondents.

- In this study, majority of the students (58.3%) attained menarche at the age of 12 years, 23% before 12 years and 18% after the age of 12. The mean age of menarche in this group was 11.97 years.

- It is quite natural that the event of menarche will be reported to somebody else, and in this study, 56% of the girls reported the event to their mothers first, followed by friends (26%). About nine percent of the students reported the first occurrence of menstruation to their teachers, 6.4% to their sisters, and 2.4% to their grandmother.

- It was identified that 86% of the girls in this study were aware about menstruation prior to its occurrence and only 14% were not aware of. The girls who were aware of menstruation got the information from many sources -friends (27%), teacher (24%), mothers (21%), grandmother (10%), health personnel (11%), and sisters (7%).

- Further enquiry on the type of information the students have received from the different persons revealed that, it mainly focused on the cultural aspects of menstruation.

- Exploration of the students' reaction during menarche identified that 56% felt afraid of the event and 18% felt anxious. About 17% reported to be happy about the event whereas nine percent of the girls did not have any special reaction. It was reported that about 72% of the students used cloth pad during menarche and only 28% used sanitary pad. Nobody has reported the use of any other materials for menstrual protection other than sanitary pad and cloth.

### Knowledge on menstruation and menstrual hygiene

Analysis of the cumulative score on knowledge on menstruation and menstrual hygiene revealed that the score obtained varied from 3.34 to 15.84 (the maximum possible score was 20) with a mean score of 10.75 and S.D.+2.08

Based on the cumulative knowledge score, the respondents were classified in three categories: poor (<10), average (10.01 to 15) and good (15.01 to 20). Accordingly, in the present study 34.8% of the respondents had poor knowledge on menstruation, 64.2% had 'average' knowledge and only 1% had 'good' knowledge.

### Attitude towards menstruation

The maximum possible cumulative score for attitude towards menstruation was 90. The obtained score ranged from 56 to 85 with a mean score of 73.2 and S.D 5.53. Accordingly, the respondents were classified into three categories — unfavorable (score  $\leq 60$ ), neutral (61-75) and favourable (76-90). Based on the obtained score in this study, only about 2.8% of the girls expressed an unfavourable attitude and 40.8% had favourable attitude towards menstruation. Rest of the students, (56.4%) belonged to the 'neutral' category.

### Practice of menstrual hygiene

Total score obtained for practice of menstrual hygiene in this study varied from 0 to 5, with mean score 2.7 and S.D.+0.97. Based on the practice of menstrual hygiene the respondents were classified into three categories: poor (score  $\leq 3$ ); average (4-5) and good (6). Accordingly, it was shown that 80.5% of the respondents had poor practice, 19.5% had average practice and none of them had good practice.

- None of the students reported any harmful practices in cleansing the perineum or using any undesirable substances as menstrual absorbents. The reasons for not changing the pad during school time included the short interval between classes, queue to use toilet and lack of privacy for disposing the pad.

### Menstrual disorders and morbidities

The menstrual disorders and morbidities among rural school girls have been identified and described under three categories - menstrual pattern disorders, symptoms of UTI/RTI and physical/emotional symptoms.

- It was found that one or more of the menstrual pattern disorders were reported by about 49% of the respondents. These disorders were irregular periods (15.5%), periods occurring in 35 days or longer (10.7%), scanty bleeding (8.9), periods occurring in less than 21 days (6.2%) and excessive bleeding (5.4%).

- None of these girls reported symptoms suggestive of reproductive tract infection.

- Pain during micturition (15.7%) frequent urination (10.1%), urgent urination 3% and urethral discharge (0.2%) were the symptoms of urinary infection reported by the respondents.

- One or more of the physical/emotional symptoms were reported by about 90% of the participants. Of these, dysmenorrhea (67.2%), back pain (53%) fainting (31%) and anger (49.5%) were the predominant symptoms.

Treatment seeking behavior in relation to menstrual morbidities

- Out of the respondents who suffered from menstrual pattern disorders (n=248) 71% did not get treatment.

- Those who had symptoms of UTI, (n=194) 56% did not seek any treatment.

- Those who suffered from physical/emotional symptoms during menstruation (n=450), 31% did not get treatment.

- It was unveiled that those respondents who had been for treated their menstrual morbidities, done it mainly from allopathic doctors (16% with menstrual pattern disorders, 15% with symptoms of urinary infection and 11% with physical /emotional symptoms). It was also revealed that, a few of them had been treated with Ayurvedic medicine and local herbs.

Some of them have tried their own methods like application of hot water bags over the abdomen, wrapping shawl tightly around the abdomen, drinking ginger water and taking rest and analgesics ((48%) when they had physical/emotional symptoms.

- Probing into the reasons for not taking any treatment for the menstrual problems could reveal many of their misconceptions. About 50% reported there is no need for treatment because these problems are quite normal during menstruation, about 20% recorded these problems will be resolved after marriage, about 9% reported their parents did not agree for treatment and only 0.2% could not treat because of financial problem. It was also noted that about 21% were of opinion that women have to bear these problems, and if treatment of any kind is taken in the younger ages, it will lead to greater problems in married life (Opoku, 2015).

### Correlation between the dependent variables

- Statistically significant correlation was found between knowledge on menstruation and attitude towards menstruation.
- Negative correlation was obtained between knowledge vs. practice
- Statistically significant negative correlation was found between attitudes vs. practice.

### Determinants of knowledge, attitude and practice

The present study identified many variables that attribute to the knowledge on menstruation and menstrual hygiene among the rural school girls which included age of the student, total attitude score, educational level of student, and education of mother, reading newspaper, health magazines and periodicals.

The determinants of attitude towards menstruation identified in this study were, educational level of student, monthly family income, and presence of grandmother, education of mother, and reading newspaper and periodicals.

The influencing factors for practice of menstrual hygiene in this study were age of the student and standard of living index.

### Discussion

The main objective of the study was to assess the knowledge, attitude and practice of rural school girls regarding menstruation and menstrual hygiene. Basic information about the sociodemographic characteristics of the rural school girls, their exposure to mass media and the events related to menarche were also assessed to establish their relationship with the dependent variables.

#### Age of attaining menarche

The age of attaining menarche, reported in this study ranged from 9 to 15 years with mean age 11.97 years and median 12 years. The mean age of menarche obtained in this study is congruent with the results obtained in a study conducted in India (Yasmin, 2019), where the mean age of menarche was found to be 11.95 years, and another study conducted in Nigeria (Ofuya, 2007), where it was found to be 11.71 years.

However, this finding did not agree with the findings in several other studies, where the mean age of menarche was higher. It was 12.5 years in the U.S. (Anderson, 2005), 12.41 years in Kuwait (Awadhi, 2013) 13.66 years in Northern Ghana, (Ameade & Garte 2016) 13.72 in Thripura (Saha, 2015) and 13 years among rurals in Kanyakumari District (Johnson



2014). It shows that there is no cut off age to start menarche and the timing is influenced by female biology, genetic, environmental and nutritional factors (Lakra, 2016, 2015). Worldwide, age of menarche varies significantly by geographic location, race, ethnicity and other characteristics.

### **Awareness about menstruation prior to menarche**

Majority of the rural school girls (86%) in this study were aware of menstruation prior to its occurrence. The higher percentage of girls aware of menstruation prior to its occurrence in this study could be due to their peer interaction and the special celebrations during menarche.

Most of the studies conducted in India and abroad agree that a certain proportion of the study participants had prior awareness about menstruation. A study conducted in Andrapradesh among 489 girls, consisting of scheduled tribes, dalits, other backward castes and other castes from different economic background and occupations revealed 94% had awareness prior to menarche (Sudha, 2011). Gothankar, Patil and Plkar(2015) reported that in their study conducted in a private University in Pune, more than 86% of the participants were aware of menarche. A descriptive cross sectional study conducted in West Bengal revealed that 67.5% of the adolescent secondary school girls had prior awareness (Dasgupta, 2008).

Many other studies reported less awareness among the participants. An epidemiological study conducted in Manipal, India (among 550 adolescent school girls showed that only 34% of them had prior awareness (Kamath, 2013). A community based cross sectional study on 387 school girls conducted in Nagpur revealed that 37% were aware of menstruation (Thakre, 2011, 2012).

### **Practice of menstrual hygiene**

Assessment of the practice of menstrual hygiene among rural school girls showed, about 80.5% of them had overall poor hygiene practice during menstruation. Of the total respondents, 42% had used sanitary pad during menstruation and 34% used cloth pad. A combination of sanitary pad and cloth pad was used by rest of the girls (24%).

With regard to the method of disposal of sanitary pad, only 36% of the girls disposed it ideally. 61% of them they flushed it down the toilet and 3% either left it on toilet floor or thrown into surrounding area. Those who used cloth pad, though reported they washed, dried and kept for next use. Only 2.58% of the girls changed the pad 4 times daily, 62% of the girls did not change during school time.

These findings regarding the practice of hygiene during menstruation in the present study were compared with the findings in similar studies. The results of an epidemiological study done among 550 school girls in India agreed with the type of menstrual protective pads used.

### **Correlation between knowledge attitude and practice**

There was a positive correlation found between knowledge on menstruation and attitude towards menstruation. But a negative correlation was found between knowledge and practice and that between attitude and practice. The negative correlation of practice of menstrual hygiene with the knowledge and attitude need to be considered with serious importance, because knowledge and attitude alone will not contribute to good practice, unless and otherwise conducive

infrastructure with access to water and sanitation facilities are available.

### **Implications**

The present study identified that rural girls are attaining menarche even at the age of nine years (mean 11.97 years and mode 12 years). This age is far below the average age of menarche attainment in India (12.43 years) and in many other countries. Studies also have proven that there is a decline in monarchical age of 0.11 years per decade. Many biological and environmental factors have been identified, which are contributory to the early occurrence of menarche. These findings make it imperative that the girls must be prepared by making them educated about menarche even when they are studying at the primary school level itself.

There is no specific time or place for the onset of menstruation. It can occur at any time and at any place occupied by the girl: house, school, and hostel or during journey. Moreover, nobody can have a control over the onset. Studies have revealed that the girls report the event to her mother, friend, relatives, and teacher. The present study identified that the information thus conveyed to the girls mainly included the cultural aspects rather than the scientific facts on menstruation and menstrual hygiene. This finding makes it necessary that the menstrual hygiene education need to be initiated at the community level also to dispel the myths and taboos on menstruation.

This study revealed that about 61% of the girls have flushed down the used menstrual pads in the toilets. Subsequently this act will lead to clogging of the toilets and which leads to environmental pollution. It was also found that there was a negative correlation existing between knowledge and practice and with attitude and practice. The infrastructure of the school, particularly the toilets must be in good hygiene condition, proportional to the number of students, must have continuous water supply, and user friendly to suit the need during menstruation.

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