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Menstrual hygiene among the school-going early adolescent girls (10-14 Years): A socio-cultural study in Bankura District, West Bengal, India

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ABSTRACT The onset of menstruation is a significant milestone in female puberty, marking the transition from girlhood to womanhood and initiating the reproductive phase of a woman's life. In Indian society, menstruation is associated with a myriad of traditions, myths, misconceptions, taboos, and superstitions. Open discussions about menstruation management are rare. Various socio-cultural influences propagate negative or erroneous information among girls, detrimentally affecting their understanding of menstrual hygiene and safe practices. This cross-sectional study focuses on early adolescent girls (aged 10-14 years) from a high school in the Bankura district of West Bengal, illuminating the socio-cultural factors that prevent them from gaining appropriate knowledge, attitudes, and practices concerning menstrual hygiene. The study found that 11.87% of the girls viewed menstruation as a result of a divine curse, 1.70% perceived it as a disease, and 54.23% lacked a clear understanding of this crucial life phase. Additionally, the majority were ignorant of the source of menstrual bleeding. A mere 8.47% of the girls had knowledge of menstruation before experiencing their first period (menarche). Most of girls didn't even hear about menstruation before menarche. Thus, menstruation and its associated practices are overshadowed by prevalent taboos and socio-cultural misconceptions.

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Introduction

Adolescence is a developmental phase bridging childhood and adulthood, typically spanning from 10 to 19 years (WHO 1989). Healthy menstruating females experience 1-7 days of blood loss from the uterine endometrium monthly from the onset of menarche until menopause (Udayar 2016). Menarche, the first menstrual period in a female adolescent, usually occurs between the ages of 10 to 16, with an average onset age of 12.4 years (Marques et al. 2022). Globally, menstruation and associated practices are obscured by myriad taboos and socio-cultural constraints. In Indian society, this issue is entangled with various traditions, myths, misconceptions, and superstitions, making open discussions about menstrual preparedness and management uncommon. Such misinformation often leads to confusion among early adolescent girls about menstrual hygiene, subsequently increasing the risk of reproductive tract infections (Hakim et al. 2017; Shah et al. 2013).

Numerous studies worldwide have indicated that cultural and social limitations, rooted in myths and misconceptions, burden adolescent girls during menstruation

(Kumar and Srivastava 2011; Kumari 2017; Sahay 2020). The South Pacific Region's Pacific Island Countries and Territories (PICTs) comprise diverse cultural beliefs, traditions, and practices (Maulingin-Gumbaketi et al. 2022). In most local cultures, menarche holds significant cultural importance, often linked to restrictive behaviors due to the belief in the toxicity of menstrual blood, affecting girls' and women's menstrual health. However, global perceptions of menarche and menstruation vary considerably.

Various bio-social and environmental factors, such as birthweight (Adair 2001; Dos Santos Silva et al. 2004), current body metrics (Frisch & Revelle, 1971; Simondon et al. 1997), parental education (Thomas et al. 2001), and family dynamics (Cameron and Nadgdee 1996), influence the age of menarche. Studies indicate that early life conditions, including socio-economic background, impact menarche timing, with optimal childhood growth and superior socio-economic status correlating with earlier menarche (Krzyżanowska et al. 2016). Furthermore, the implications of menstrual taboos on the emotional and mental well-being of adolescent girls in Andhra Pradesh were documented by Udayar (2016) and Garg and Anand (2015).

An Indian study delineating the correlation between menarcheal age and socio-economic status observed that mean menarcheal age rises with decreasing per capita income (Bagga and Kulkarni 2000). While menarche signifies biological maturity (Iyengar 2008) and embodies a woman's reproductive potential (Omidvar and Begum 2010), it remains a topic shrouded in embarrassment for many girls. This reticence can be attributed to a tapestry of traditions, beliefs, myths, and misconceptions (Neilson 2010). Proper menstrual hygiene is linked to factors such as absorbent material use, sanitary habits, and genital cleanliness, necessitating access to clean water and sanitation services. Ensuring menstrual hygiene is pivotal for reproductive health, as neglect can elevate risks of reproductive and urinary tract infections, pelvic infections, cervical cancer, and other health concerns (Neilson 2010; Seenivasan et al. 2016). Additionally, menstrual hygiene is fundamental for achieving educational and financial equality (Adams et al. 2009).

Despite the myriad studies, misconceptions persist, especially among adolescent girls, about menarche, the health implications of menstruation, and safe menstrual practices. This study seeks to elucidate the knowledge, attitudes, and practices regarding menstrual hygiene of early adolescent school-going girls in rural Bankura District, West Bengal. It endeavors to understand the link between inadequate menstrual hygiene practices and socio-demographic factors such as age, occupation, education, religious beliefs, and the socio-economic conditions of family members.

Materials and Methods

Study Area

The study was carried out at Bikna K.P.S Vidyapith in Bikna village, situated in the Bankura II CD block of Bankura district, West Bengal, India (Fig. 1). This village is positioned in the northern portion of the district (Fig. 2). The school was selected deliberately due to the researcher's existing association with it and its potential

for facilitating accessible data collection.

Methodology

A cross-sectional study was undertaken amid the COVID-19 pandemic among school-going adolescent girls aged 10-14 years, from classes V to VIII. The ethnographic approach underpinned the research, providing insights into the socio-cultural practices, traditions, taboos, and myths associated with menstruation and hygiene.

With permission secured from school authorities, the teachers of classes 7th to 9th were briefed about the study's objectives. Building rapport with the female students was essential, and their verbal consents were acquired after detailing the study's aims.

A comprehensive questionnaire, which had been pre-designed, pretested, and structured, facilitated data collection. It encompassed questions on awareness, information sources, hygiene habits, and activities restricted during menstruation. Additional data, such as parents' education and occupation, housing conditions, house type, sanitation facilities, and water availability, were gathered. The chronological age and the Age at Menarche (AAM) were noted, with AAM determined based on the recalled date of the first menstruation. The questionnaire also delved into the types of absorbents used, their storage, cleanliness, change frequency, personal hygiene practices during menstruation, and more. Self-reported data from the girls was prioritized, with no cross-referencing done with parents, guardians, or official documents.

The research spanned March to July 2021. A total of 118 girls from classes 5th through 9th were strategically and randomly chosen. Data collection was achieved through interviews and telephonic methods. Only verbal consent was deemed necessary from the participants.

Study Population

Ethnic Division (Caste/Tribe Composition)

The participating group comprised various ethnicities, namely Kayastha, Sadgope, Goalagope, Tamli, Brahmin, Kamar, Napit, Kumbhokar, and Teli. The Kayasthas were the most represented at 30.50%, followed by Sadgope (13.55%), Goalagope (22.88%), and Kamar (12.71%). Kumbhokar and Napit had the lowest representation at 1.69% and 3.38% respectively. Typically, these groups engage in handicrafts and tasks relevant to their ethnic communities.

Inclusion and Exclusion Criteria

The study encompassed adolescent girls aged 10-14 from classes V-IX present in the school during the research period, with the study's purpose and processes explicitly explained to them. However, girls who had not yet

Table 1. Initiation of menarche among the respondents.

Age of menarche (years)	No. of students	Percentage (%)
< 10	6	5.09
10-12	66	55.93
13-15	46	38.98
>15	0	0
Not attained menarche	0	0
Total	118	100

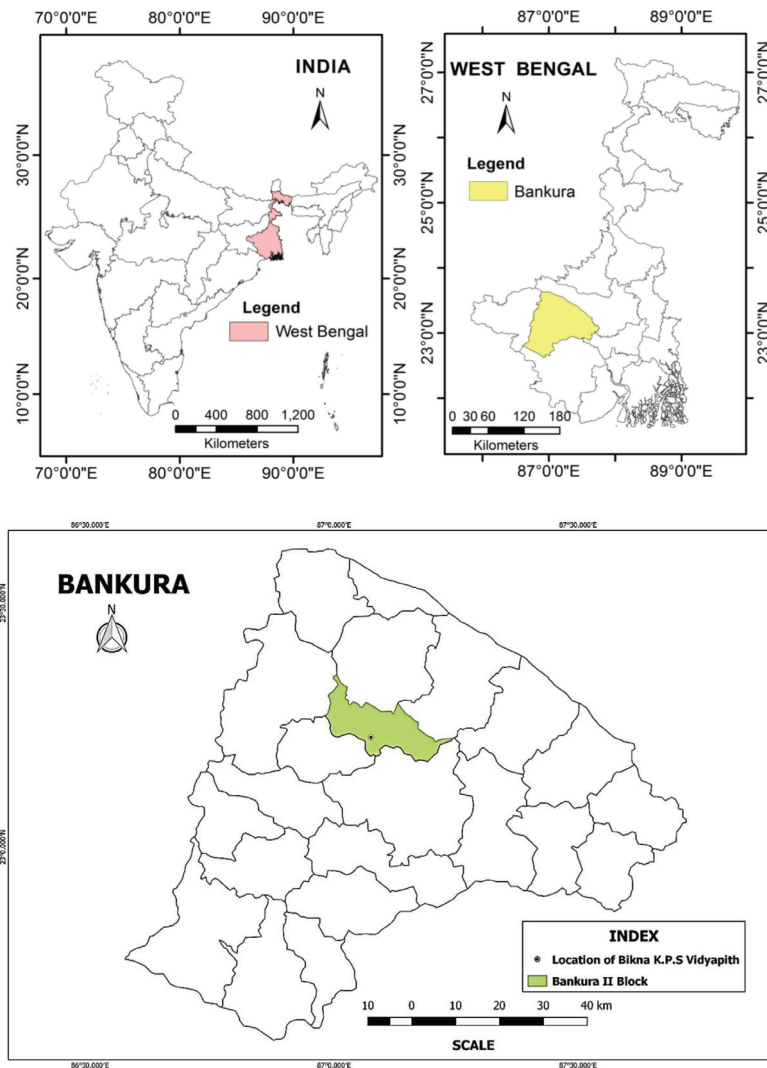


Figure 1. Study location and map of Bankura.

experienced menarche or were sick or reluctant were not considered.

Results and Discussion

The investigation underscores the intricate interplay between religious, socioeconomic, and educational backgrounds on the menstrual practices of adolescent girls in Bikna village, West Bengal. There's a significant correlation between the family's economic status and menstrual practices. A majority (57.63%) of the respondents come from families with a monthly income ranging from Rs. 5000-10000 (Table 1). This economic status often dictates their choices; girls from wealthier backgrounds

predominantly use branded sanitary products, whereas their counterparts from economically strained family's resort to local alternatives, primarily due to financial limitations. This economic disparity also affects their access to private sanitation facilities, potentially escalating the risk of infections.

Underweight issues were notable, with 12.7% of the adolescent girls being severely underweight ($BMI \leq 16$). Such nutritional deficiencies, coupled with limited menstrual hygiene knowledge, existing myths, and superstitions, endanger their reproductive health. This study's findings echo the menstrual hygiene concerns noted among socio-economically deprived South Korean women (Kwak et al. 2019).

A significant observation is the educational back-

Table 2. Knowledge about menstruation among the respondents.

Knowledge about menstruation before attaining menarche	No. of students	Percentage (%)
Yes	10	8.47
No	86	72.88
Partial	22	18.65
Total	118	100

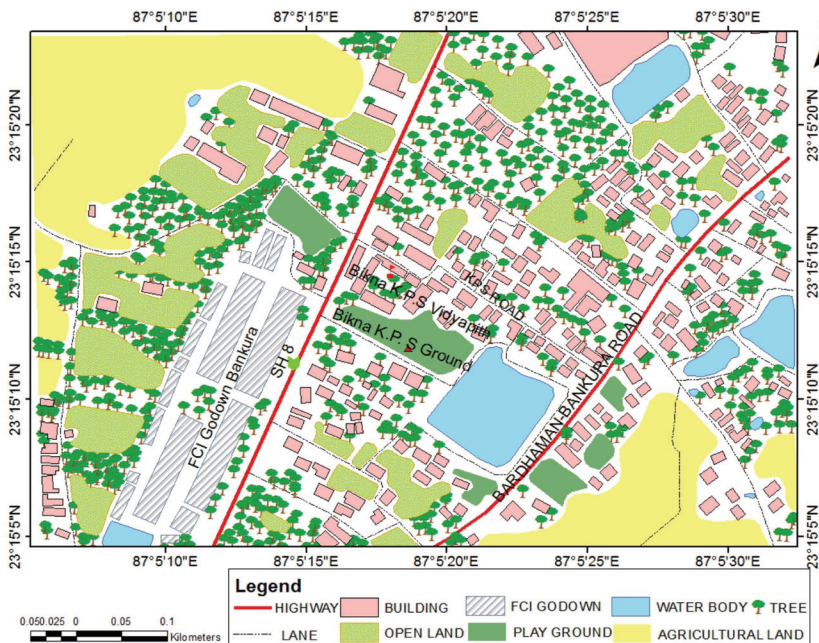


Figure 2. Layout map of Bikna K.P.S Vidyapith.

ground of the parents, with the majority being educated up to secondary level. Educated girls exhibited heightened awareness of menstrual hygiene. Mothers, in particular, play an indispensable role during this phase. Those with better educational backgrounds engage in open discus-

sions about menstruation with their daughters, eliminating social barriers. The pivotal role of maternal education in safe menstrual practices was also documented in a study from Northeastern Ethiopia (Habtegiorgis et al. 2021).

According to our study, 5.09 percent of the girls ex-

Table 3. Source of information regarding menstruation.

Source of information	No. of students	Percentage (%)
Father	0	0
Mother	112	60.22
Sisters	16	8.60
Female relatives	20	10.75
Friends	28	15.05
Teachers	0	0
Television	6	3.22
Newspaper	2	1.08
Magazine	2	1.08
Total	186	100

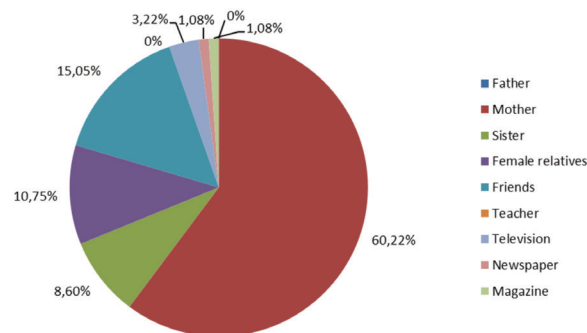


Figure 3. Different source of information about menstruation.

Table 4. Knowledge/idea regarding causes of menstruation among the respondents.

Awareness regarding causes of menstruation	No. of students	Percentage (%)
Physiological / Natural process	38	32.20
Curse of God	14	11.87
Disease	2	1.70
Don't know	64	54.23
Total	118	100

perienced menarche before the age of 10, while the rest fall between the ages of 10-15 (Table 1). These findings align with the research by Elshiekhe and Ali Mohammed (2011), which noted most girls attained menarche around the age of 13.

A concerning revelation was that only 8.47% of the participants had prior knowledge about menstruation before experiencing menarche (Table 2). This is congruent with findings from Shah et al. (2013) and Kumar and Srivastava (2011), who reported similar levels of unawareness.

Regarding primary sources of menstrual information, mothers emerged as the predominant informant (60.22%), trailed by friends (15.05%) and other female relatives (Table 3). This parallels the observations of Mudey et al. (2010) and Thakre et al. (2011), emphasizing the critical role mothers play.

However, misconceptions persist. While 32.20% view menstruation as a standard physiological function, a significant portion either sees it as a "curse of God" or remains unaware of its nature (Table 4). These misconceptions find resonance in the observations of Sultan and Sahu (2017) and Patel et al. (2019).

A 14-year-old girl's words encapsulate this sentiment: "I am informed by my guardian that it is a normal physiological process that every woman needs to face as a curse of God."

A major knowledge gap is evident in the understanding of the source of menstrual bleeding. No participants correctly identified the uterus as the source (Table 5). This lack of awareness is consistent with findings from Thakre et al. (2011) and Chauhan et al. (2019).

A candid remark from a 12-year-old highlights the education gap: "I agree that we have lack of knowledge regarding

Table 5. Idea regarding source of menstrual blood among the respondents.

Source of menstrual blood	No. of students	Percentage (%)
Uterus	--	--
Urethra	0	--
Vagina	14	11.87
Abdomen	4	3.39
Bladder	12	10.17
Stomach	2	1.69
Kidney	0	0
Don't know	86	72.88
Total	118	100

the menstruation cycle. I often feel uncomfortable to ask about it to my parents or relatives. Even, they don't have the right answer. So, it would be much better to include it in our biology syllabus before attaining the age of menarche."

In terms of hygiene, 74.58% preferred sanitary pads, while others used new or reused cloth (Table 6). An 11-year-old aptly summarized the economic influence on this choice: "I was compelled to use sanitary pads as we don't have a bathroom in our house and had to use local open water-bodies for bathing. So, it seems to be very embarrassing for me to wash and re-use clothes during menstruation. I mostly use local-made sanitary pads rather than any branded quality due to economic reason."

Most participants use plain water (57.63%) or soap water (27.12%) for cleaning their genital area (Table 7). However, the frequency varies, with some even avoiding

Table 6. Absorbents used during menstruation by respondents.

Type of absorbents used during menstruation	No. of students	Percentage (%)
Sanitary pad	88	74.58
New cloth	8	6.78
Old cloth	14	11.86
Both	8	6.78
Tampons	0	--
Total	118	100

Table 7. Practice of menstrual hygiene by respondents.

Cleaning material	No of students	Percentage (%)
Only water	68	57.63
Soap and water	32	27.12
Water and antiseptic	18	15.25
Piece of paper	0	0
Piece of cloth	0	0
Total	118	100

this basic hygiene practice during menstruation (Table 8).

The study also highlighted common physical complaints associated with menstruation, including abdominal pain, which was most prominent, followed by headache, nausea, and other symptoms. These observations coincide with findings from Mudey et al. (2010).

Moreover, cultural and religious restrictions were commonly reported, from avoiding religious places to participation in family functions (Table 9). These restrictions were mirrored in studies by Mudey et al. (2010) and Hakim et al. (2017).

Absence from school due to menstruation was reported by 33.90% of participants. The reasons ranged from physical discomfort to inadequate sanitation facilities in schools. Dixit et al. (2016) also identified similar reasons for absenteeism in schools.

Conclusion

The research showcases an evolving understanding and improved hygiene practices concerning menstruation among early adolescent girls at Bikna KPS Vidyapith in the Bankura District. Yet, the diverse socio-cultural

Table 9. Various restrictions during menstruation (multiple responses).

Restriction during menstruations	Number of students	Percentage
Religious occasion	118	19.09
Physical activity/playing	70	11.34
Schooling	60	9.70
Attending family functions	96	15.53
Household work	56	9.06
Food restriction	22	3.54
Talk to boys	20	3.24
Visit to other home	36	5.83
Sleep on routine bed	10	1.61
Touch stored food	82	13.28
Enter kitchen	32	5.19
Separated	16	2.59
No restrictions at all	0	0
Total	618	100

Table 8: Practice of menstrual hygiene by respondents.

Cleaning of external genital	No of students	Percentage (%)
Not at all	8	6.78
< 2 times	64	54.24
>2 times	46	38.98
As per convenience and privacy	0	0
Total	118	100

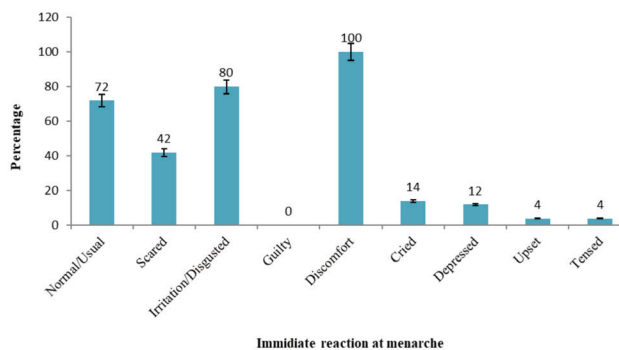


Figure 4. Immediate reaction of respondents during menarche.

landscapes across India, marked by varying customs, religious beliefs, lifestyles, dietary habits, and languages, lead to mixed responses in this study.

The study's outcomes indicate that a significant number of adolescent girls attain basic knowledge about menstruation before menarche. However, a contrasting finding reveals several young girls begin their menstrual cycle without understanding its origins. Mothers emerge as the primary information sources, followed by sisters and friends. This underlines the need for empowering

mothers with correct and comprehensive information about menstruation and its management. Armed with this knowledge, they can guide their daughters towards healthier menstrual hygiene.

Key areas of concern include misconceptions about menstruation, limited teacher involvement, and undue societal restrictions. The role of educators is paramount in providing reproductive health education, especially about menstrual hygiene. Yet, their engagement in this study was minimal. It's essential for teachers to take the initiative in instructing their students about the scientific aspects of menstruation.

It's crucial for the school curriculum to stress the factual aspects of menstruation, its physiological significance, the development of secondary sexual traits, and more importantly, guiding choices for appropriate sanitary products and maintaining good hygiene. To combat school absenteeism, it is essential to ensure proper sanitation, water supply, and waste disposal facilities in all schools. Institutions should foster an environment where girls can openly discuss their concerns.

Adolescent girls need guidance on using sanitary pads, the right frequency of changing them, and proper genital hygiene to protect themselves from infections, especially reproductive tract infections. This research also highlights numerous practices, societal limitations, myths, and false beliefs linked with menstruation, showcasing the adaptability and resilience of the adolescent girls in this context.

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