

## **A Study on Menstrual Hygiene and its Association with Perceived Reproductive Morbidity in Adolescent Girls of Slum of Patna District, Bihar, India**

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Received: 25-01-2023 / Revised: 09-03-2023 / Accepted: 26-04-2023

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Conflict of interest: Nil

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### **Abstract**

**Objectives:** This study was to assess the knowledge, attitude and practice of menstrual hygiene and evaluate the relation between menstrual hygiene and reproductive morbidities in adolescent girls of slum area of Patna district, Bihar, India.

**Methods:** Data was collected by house-to-house survey in the community and girls were asked questions using a predesigned questionnaire. The questionnaire consisted of sociodemographic details, knowledge about menstruation, menstrual patterns and practices, hygiene followed, and associated serious ill-health ranging from Dysmenorrhea, genital tract infections, urinary tract infections, and bad odour etc.

**Results:** We were interviewed 200 adolescent girls with age group 11 to 19 years in slum of Patna district of Bihar. Most of the adolescent girls 143(71.5%) were in age 14 to 16 years. Mean age of age of girls included in this study was 15.1 years. Mean menarche age was 12.9 years. 72.5% family were belonged in below poverty line. Majorities of girls 108(54%) were using non-disposable linen (household non-disposable, non-adsorbent cloth materials) during menstrual flow. out of 200 adolescent girls, prevalence of reproductive morbidity was found to be 143(71.5%). 73(36.5%) girls had dysmenorrhea, menstrual irregularities were in 41(20.5%) girls, burning micturition was seen in 8(4%) girls, 6(3%) girls had white discharge and 4(2%) girls had menorrhagia. 11(5.5%) girls had itching in genitalia. Only 64(32%) girls were utilised health care services for menstruation related problem. Among them 48(75%) were visited public Government hospital and 11(17.18%) visited private hospital for menstrual related problem. And 05(35.71%) girls has taken traditional treatment in menstrual difficulties.

**Conclusions:** Prevalence of dysmenorrhea was not less common and the menstrual hygiene practices were poor among girls, they had to face restrictions and social taboos related to menstruation. So, education to girls about the facts of menstruation, physiological implications, significance and proper hygienic practices during menstruation is the need of the hour. It is also required to bring them out of traditional beliefs, taboos, misconceptions and restrictions. Focus group discussions, mass media campaigns, and inclusion of sex education in schools are required to overcome taboo aspect of menstruation. As well as, we should organise health check-up camp in slum area for awareness of menstrual hygiene and prevention and treatment of reproductive morbidity in adolescent girls.

**Keywords:** Adolescent girls, menstrual hygiene, reproductive morbidity

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**Introduction**

Menstruation is a natural part of women's reproductive cycle. However, in most parts of the world, it remains a taboo and is rarely talked. Cultural practices and taboos around menstruation negatively impact the lives of adolescent girls and women, and also reinforce gender inequities and exclusion [1].

Adolescence is the stage of physical, psychological, and reproductive development that generally occurs during the period from puberty to legal adulthood. The World Health Organization defines adolescence as individuals between 10 and 19 years of age [2]. Adolescence in girls has been recognized as a special period in their life cycle that requires specific and special attention. This period is marked with onset of menarche [3]. Hygiene during menstruation is an inevitable part of woman's life. Various aspects such as physiology, pathology and psychology of menstruation have been found to associate with health and well-being of women; hence, it is an important issue concerning morbidity and mortality of female population [4]. 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. Menstrual hygiene deals with special healthcare needs and requirements of women during monthly menstruation or menstrual cycle [5]. Therefore, increased knowledge about menstruation right from childhood may escalate safe practices and may help in mitigating the suffering of millions of women [6]. Objectives of our study was to assess the knowledge, attitude and practice of menstrual hygiene and evaluate the relation between menstrual hygiene and reproductive morbidities in

adolescent girls of slum area of Patna district, Bihar, India.

**Material & Methods**

The community-based study was conducted in slum area of Patna during a period from February 2022 to October 2022. Before the interview, a verbal informed consent was taken from the parent or guardian of the adolescent girl and ascent was taken from adolescent girl. All the respondents were assured that the information collected would be confidential throughout the study.

**Methods:** Data was collected by house-to-house survey in the community, and girls were asked questions using a predesigned questionnaire specially designed for this purpose.

**Questionnaire:** The questionnaire consisted of sociodemographic details, knowledge about menstruation, menstrual patterns and practices, hygiene followed, and associated serious ill-health ranging from dysmenorrhea, menorrhagia, genital tract infections, urinary tract infections, and bad odour.

At the end of the interview, the girls were educated about facts of menstruation and explained about cleanliness during menses. In addition, all their queries were answered satisfactorily.

**Statistical Analysis**

Data was analysed by using simple statistical methods with the help of MS-Office software. All the data was tabulated and percentages were calculated.

**Results**

In this study we interviewed 200 adolescent girls with age group 11 to 19 years in slum of Patna district of Bihar. Most of the

adolescent girls 143(71.5%) were in age 14 to 16 years. Mean age of age was 15.1 years. Education of majorities of girls were

secondary. Mothers 124(62%) of most of the girls were illiterate.

**Table 1: Demographic profile of adolescent girls**

Demographic distributions	Frequency	Percentage
<b>Age (Years)</b>		
11-13 (early adolescent)	19	9.5%
14-16 (Adolescent)	143	71.5%
>16 (Late Adolescent)	38	19%
<b>Education</b>		
No schooling	08	04%
Primary	43	21.5%
Secondary	134	67%
Higher secondary	15	7.5%
<b>Mother's Education</b>		
Illiterate	124	62%
Primary	61	30.5%
Secondary	13	6.5%
Higher secondary	2	01%
<b>Family Income (Rs.)/month (BG Prasad Modified)</b>		
Class V	145	72.5%
Class IV	51	25.5%
Class III	04	02%
Class II	00	00
Class I	00	00

According to modified BG Prasad classification, Class V was the socio-economic status of family of most of the girls 145(72.5%) i. e most of the family were in BPL categories.

**Table 2: Age at menarche and pattern of menstruation cycle**

Variables	Frequency	Percentage
<b>Age at menarche (years)</b>		
11-13	143	71.5%
14-16	52	26%
≥16	5	2.5%
<b>Menstrual cycle</b>		
Regular	148	74%
Irregular	52	26%
<b>Duration of menstrual flow (days)</b>		
≤3	138	69%
4-5	52	26%
>5	10	5%

Out of 200 girls, most of the girls 143(71.5%) were attained menarche at the age of 11-13 years. Mean menarche age was 12.9 years. Most of the girls 148(74%) had regular menstrual cycle. 52(26%) had irregular. And majorities of girls 138(69%) had less than 3 days of menstrual flow. 52(26%) had 4-5 days of menstrual flow.

**Table 3: Practices of hygiene during menstruation cycle.**

Hygienic Practices	Frequency	Percentage
<b>Material used</b>		
Non-disposable linen	108	54%
Sanitary napkins	92	46%
<b>No. of pads / day</b>		
1	45	22.5%
2-3	143	71.5%
>3	12	06%
<b>Re-use of pads</b>		
Yes	168	84%
No	32	16%
<b>Washed with material</b>		
Water only	152	76%
Water and detergent	48	24%
Other methods	Nil	
<b>Drying</b>		
Inside house	13	6.5%
Outside house in sunlight	187	93.5%
<b>Disposal of pads / clothes</b>		
Throw in public dust bin	34	17%
Indiscriminate through	163	81.5%
Flush it	03	1.5%
<b>Bath during Menstrual period</b>		
Yes	196	98%
No	04	02%
<b>Cleaning of external genital</b>		
Yes	196	98%
No	04	02%

In this present study, majorities of girls 108(54%) were using non-disposable linen (household non-disposable, non-adsorbent cloth materials) during menstrual flow. Only 92(46%) girls were used sanitary napkins. Majorities of girls 143(71.5%) were used 2-3 pad per day during flow period. Higher percentage 168(84%) of girls were reused of pad during menstrual period. Majorities of girls 152(76%) were

cleaned washed material only used of water. Only 48(24%) were used soap (detergent) and water to clean the cloth material. 187(93.5%) girls were dried cloth material in sunlight. majorities of girls, 163(81.5%) were practiced an insanitary method of disposal of materials. Majorities of girls 196(98%) were bathed and cleaned external genital parts during menstruation period.

**Table 4: Showing the reproductive health problem in adolescent girls (N=200).**

Reproductive health problems	Frequency	Percentage
Dysmenorrhoea	73	36.5%
Menorrhagia	4	2%
Menstrual irregularities	41	20.5%
Burning micturition	8	4%
White discharge per vagina	6	3%

Itching in genitalia	11	5.5%
Total	143	71.5%

In this present study, out of 200 adolescent girls, 73(36.5%) girls had dysmenorrhea, menstrual irregularities was in 41(20.5%) girls, burning micturition was seen in 8(4%) girls, 6(3%) girls had white discharge and 4(2%) girls had menorrhagia. 11(5.5%) girls had itching in genitalia.

**Table 5: Utilization of health care and ICDS facilities.**

Facilities	Frequency	Percentage
<b>Health care services</b>		
No	136	68%
Yes	64	32%
<b>Type of health care services</b>		
Private	11	17.18%
Public	48	75%
Traditional	05	35.71%
<b>ICDS scheme</b>		
No	170	85%
Yes	30	15%

In this present study, out of 200 adolescent girls, most of the girls 136(68%) has not taken health care services. Only 64(32%) girls utilised health care services for menstruation related problem. Among them 48(75%) visited public Government hospital and 11(17.18%) visited private hospital for menstrual related problem. And 05(35.71%) girls has taken traditional treatment in menstrual difficulties. Health services of ICDS scheme was utilized by only 30(15%) girls. And majorities of girls 170(85%) were not utilized ICDS scheme.

### Discussions

Menstruation (a period) is an exceptional phenomenon that the nature has planned for women. It is not just a small term but a major stage where a woman undergoes certain reproductive changes from onset of menstruation (menarche) till menopause. Adolescence is the stage of physical, psychological, and reproductive development that generally occurs during the period from puberty to legal adulthood. The World Health Organization defines adolescence as individuals between 10 and 19 years of age [7]. Adolescence in girls has been recognized as a special period in their

life cycle that requires specific and special attention. This period is marked with onset of menarche [8].

In the present study, we were interviewed 200 adolescent girls regarding menstrual hygiene in slum area of Patna. We were seen that most of the adolescent girls 143(71.5%) were in age 14 to 16 years. Mean age of age was 15.1 years. Out of 200 girls, most of the girls 143(71.5%) were attained menarche at the age of 11-13 years. Mean menarche age was 12.9 years. This study comparable to study by Mohite R from Karad slum area of western Maharashtra and Bhattacharjee S of west bengal as 12.8 and 12.6 years respectively [9,10]. However, study from Nagpur slum [11] and Meerut, Uttar Pradesh [12] have observed mean age at menarche of 13.15 and 13.16 years respectively. These differences could be due to differences in geographical, environmental, nutritional, socio-economic factors and general health status of the study subjects [13]. The age of menarche is determined by general health, genetic factors, socioeconomic and nutritional status but with improvement in the nutritional status and general health, it has declined in many populations.

In the present study, most of the girls were belonged to lower socio-economic strata (class V) according modified BG Prasad classifications. 148(74%) girls had history of regular menstrual cycle. Similar finding have also been reported by Jogdand K from Guntur, Andra Pradesh and Mohite Rv from Maharashtra as 66.5% and 63.9% respectively [10, 14]. Hygiene during menstruation is an inevitable part of woman's life. Various aspects such as physiology, pathology and psychology of menstruation have been found to associate with health and well-being of women; hence, it is an important issue concerning morbidity and mortality of female population. In the study, we were seen that majorities of girls 108(54%) were used non disposable linen during menstruation period and only 92(46%) girls were used sanitary napkins.

Similar finding has also been reported from Delhi study conducted by Baridalyne and Reddaiah, as less than of one-third of the study subjects used sanitary absorbents pads. However, study conducted by authors viz. Arumugam B, Bhattacharjee S and Jogdand K reported; 82.5%, 71.3% and 53.7% girls were practiced sanitary adsorbent napkins during menstruation respectively [9, 14, 15].

In the present study, reuse of material was practiced by 168(84%) girls, whereas finding in study conducted by Bhattacharjee S was about 40%.<sup>8</sup> This indicates that the awareness about menstrual hygiene is poor could be due to unauthorized habitations, low literacy, negative attitude of community as well as poor establishment and access of health care services.

The present study revealed, 48(24%) girls were using soap (detergent) and water to clean the cloth material. Similar finding has been also noted by Bhattacharjee S from Siliguri, West Bengal as 15.2%. The present study showed, 163(81.5%) girls practiced an insanitary method of disposal of materials whereas Bhattacharjee S from

West Bengal observed little higher proportion i.e. 84.6% girls practiced similar method of disposal of material used during menstruation.<sup>8</sup> However, Arumugam B noted, 14.1% girls were practiced unsanitary method of disposal [15]. This difference in reports could be due to poverty, illiteracy both in girls as well mothers, poor awareness, dominance of cultural, religious and traditional practices, poor access of services from public as well as private sector.

In the present study, practices of personal hygiene including bath during menstruation and cleaning of external genital parts were seen in 98% girls. Study conducted by Arumugam B from reported, almost all girls were practiced similar personal hygiene during menstruation.<sup>15</sup> However, Bhattacharjee S from west Bengal observed, less than one third of girls were practicing good personal hygiene whereas little higher proportion, 45% was reported by Devi K from Andra Pradesh [9,16].

The prevalence of reproductive morbidity in our study was found to be 71.5% whereas it ranged from 60% to 93%[17] in Multan city, Pakistan and 62%–65% in India as reported from East Delhi[18] and Karnataka [19]. Even in India, a study conducted among young girls in Indore by Kural et al. had observed 84.2% prevalence of dysmenorrhea [20]. In our study, excessive discharge from genitalia (probable respiratory tract infections) had been reported by 3% of adolescent girls, itching in genitalia by 5.5% and burning in micturition by 4% girls. These were almost similar to the findings reported by Juyal et al [21]. (19% vaginal discharge and 7.9% itching in genitalia) and Ram et al. (12% burning sensation) [22]. This is due to the fact that discussing menstrual hygiene is considered as taboo subject in India [21] which hinders women and girls from getting treatment on time. [23]

This present study revealed, 64(32%) adolescent girls from slum area were utilising health care services for

menstruation related problems. Among them, only 11(17.18%) were visited private health care services. And 48(75%) girls were visited public Government hospital for menstrual related problem. Our Government of Bihar has also established Anganwadi (ICDS) but the only 30(15%) girls were utilised services form there in this study. Thus, Unhygienic and improper practices during this period can lead to serious reproductive tract infections, urinary tract infections, and various sexually transmitted diseases. It can also contribute to developing life-threatening conditions such as cervical cancer. This study is a community-based study and conducted in slum area, where unhygienic environmental conditions were observed. Poverty, illiteracy, and ignorance are the major factors which lead to poor environmental sanitation. Improper sanitation of the surrounding also contributes to adverse health outcomes. Lack of water supply majorly affects the status of hygiene. Privacy issues are mainly found in girls using public toilets. Hence, ignorance toward cleanliness is seen in these girls to avoid embarrassment.

### Conclusions

This present study concluded that the prevalence of dysmenorrhea was not less common and the menstrual hygiene practices were poor among girls, they had to face restrictions and social taboos related to menstruation. So that, education to girls about the facts of menstruation, physiological implications, significance and proper hygienic practices during menstruation is the need of the hour. It is also required to bring them out of traditional beliefs, taboos, misconceptions and restrictions. Focus group discussions, mass media campaigns, and inclusion of sex education in schools are required to overcome taboo aspect of menstruation. As well as, we should organise health check-up camp in slum area for awareness of menstrual hygiene and prevention and

treatment of reproductive morbidity in adolescent girls.

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