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Adolescent Medicine

A Study on the Menstruation of Adolescent Girls: A School Base Study in Dhaka, Bangladesh

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Abstract **Original Research Article**

Background: Menstruation is a normal physiological process occurring every month throughout the reproductive age of the females. However, significant variation in menstrual pattern is observed among adolescents. ***Aim of the Study:*** The aim of the study was to explore the pattern of menstruation and problems among school-going adolescents in Dhaka, Bangladesh. ***Methods:*** This is a cross-sectional study carried out among 250 adolescent school girls in Dhaka from June 3rd 2022 to September 2nd 2022. Prior permission was obtained from the Principal of the school and informed consent was taken from the legal guardians of the girls. The selected women were explained about the protocol and the purpose of the study and were requested to complete the questionnaires to elicit information relating to demographic features, menarche age, and menstrual characteristics. ***Result:*** The distribution of menstrual disorders of the study populations where most of the 78.4% of girls faced dysmenorrhea, 7.6% of girls had menorrhagia, 6% had irregular menses, 5.2% of girls had polymenorrhoea and 2.8% girls had no disorders. ***Conclusion:*** Menstrual problems are frequent among adolescent girls. Dysmenorrhoea was the commonest problem among the adolescent girls. Educating student about menstrual health by health care professionals and teachers can help in reducing their psychological and physical stress.

Keywords: Adolescents, Dysmenorrhoea, Menarche, Menstruation, Menstrual pattern.

INTRODUCTION

Adolescence (10-19 years) is the transition period from childhood to adulthood wherein a child goes through various physical, emotional and social changes [1]. The period of adolescence is characterized by specific growth spurts associated with the development of gonads, reproductive organs and secondary sexual characteristics, along with the development of new thoughts and motivations, including a wide range of social, behavioural, and emotional changes [2]. Menstruation is a unique phenomenon among adolescent girls that involves periodic vaginal bleeding occurring every 26 to 30 days till she reaches the fifth decade of her life [3]. Attaining menarche is one of the significant milestones in a woman's life as it signifies the initiation of the capacity to reproduce along with the development of pubertal characteristics [4]. The time of menarche and the pattern of menstruation varies from woman to woman. Menarche typically occurs within 2-3 years after the larche; Tanner stage IV is usually between 12 and 13 years. Almost 98% of girls have already attained their menarche till she is 15 years [5]. Menstruation is considered a matter that needs to be kept secret, and women should feel ashamed of it. In Bangladesh, mothers and other female relatives are the primary sources of information on menstruation; however, they can provide very little information, which is often misconceptions, thereby affecting adolescent girls' response to menstrual management [6–9]. Studies show that unhealthy practices of menstrual management among adolescent girls are highly prevalent in Bangladesh [6, 10-12]. Globally, poor menstrual management affects girls' school attendance and academic progress through psychological (for example, discomfort, high stress, fear of leakage of menstrual

blood, and fear of leaving signs of menstrual blood inside the school latrine) and physical (for example, Dysmenorrhoea, Headache, and excessive bleeding) factors [12-14]. At the same time, it affects their maternal and reproductive health through increased risk of reproductive tract infections (RTI), sexually transmitted diseases (STD), Human Papillomavirus (HPV) infection, and adverse pregnancy outcomes [10, 13, 15]. Dysmenorrhea is a medical term that means "difficult or painful periods", which can be classified as "primary" and "secondary" [2]. The pain or difficulty occurs as a result of uterine contractions. Most young women with dysmenorrhea experience lower back pain and cramping in the lower abdomen area during their period. This pain can be dull to pulsatile ranging from mild to severe. Problems such as symptoms of GI upset, bloating in the belly area, and excessive bleeding might also occur during menstrual episodes. In a study conducted in India, out of 600, 245 (40%) girls remained absent from school during their menstruation [16]. School absenteeism was significantly associated with the type of absorbent used, lack of privacy at school, restrictions imposed on girls during menstruation, mother's education, and source of information on menstruation. The majority, 65%, reported that school activity is affected as they had to remain absent from school out of shyness, pain and anxiety about leakage and staining at their school uniform [16]. Adolescent in the age group of 10-19 constitutes more than 1.2 billion of the world's population, 70% belonging to developing countries. Adolescents account for nearly a quarter of the Bangladeshi population. Of the top ten sexual and reproductive health issues of concern identified by teenage girls, seven were menstruation-related. Many of the girls' concerns relate to why physical changes occur, what is "normal," and the consequences of puberty. This lack of knowledge is echoed by the fact that almost a quarter of teenage girls had "no idea" about their menarche before its onset. Only 36% reported that menstruation was a monthly cycle where blood flows from the vagina for 4-5 days [17]. In Bangladesh, menstruation is considered a matter of shame and dirt. Therefore, many women and girls are excluded from aspects of daily living, including education and religious functions and are forced to follow traditional norms and practices, despite physical discomfort and/or lack of resources and remain absent from school [18]. Thus, the study was conducted to explore the pattern of menstruation and problems among school-going adolescents in Dhaka, Bangladesh.

METHODOLOGY & MATERIALS

This is a cross-sectional study carried out among 250 adolescent school girls in Dhaka from June 3rd 2022 to Septembar 2nd 2022. Prior permission was obtained from the Principal of the school and informed consent was taken from the legal Guardians of the particpant girls. The selected women were explained about the protocol and the purpose of the study and were requested to complete the questionnaires to elicit information relating to demographic features, menarche age, and menstrual characteristics.

- **Inclusion Criteria**
  - All the girls in the age group of 10-19 years, who had attained menarche & were willing to participate in the study, were included in the study.

- **Exclusion Criteria**
  - Students who were seriously ill were excluded from the study.

All data were presented in a suitable table or graph according to their affinity. A description of each table and graph was given to understand them clearly. All statistical analysis was performed using the statistical package for social science (SPSS) program, and Windows. Continuous parameters were expressed as mean±SD and categorical parameters as frequency and percentage. Comparisons between groups (continuous parameters) were made by Student's t-test. Categorical parameters compared by Chi-Square test. The significance of the results as a value of $P<0.05$ was considered to be statistically significant.

RESULT

In this study, more than 40% of girls were aged 14 years, 92(36.80%) girls were aged 13 years, and only one patient was aged 11. Most of the 75.60% of girls had a menstrual interval between 21-35 days, 19.20% of girls had an interval of more than 35 days, and only 13(5.20%) girls had an interval of fewer than 21 days. The majority of the study population had a moderate amount of blood flow during menstruation (70.40%), 63(25.20%) girls had heavy blood flow and 11 (4.40%) girls had scanty (Table 1). Table 2 shows the distribution of adolescent school girls according to menstrual symptoms, 210(84.00%) girls had abdominal pain/cramps, 76(30.40%) girls had body aches, 67(26.80%) girls had irritability, 50(20.00%) girls had backache, and 14(5.60%) girls had a headache. The majority of the study population used only sanitary napkins (82.80%), and 43(17.20%) girls used both sanitary napkins and clothes (Table 3). 191(76.40%) girls had <4 times absorbent change and 59(23.60%) girls had an absorbent change more than 4 times. The cleaning of genitalia during the menstrual cycle is shown the same results as absorbent change. More than 70% of girls used only water to clean their genitalia, and 28% of girls used soap and water to clean their genitalia (Table 3). Figure 1 shows the distribution of menstrual disorders of the study populations where most of the 78.4% of girls faced dysmenorrhea, 7.6% of girls had menorrhagia, 6% had irregular menses, 5.2% of girls had polymenorrhoea and 2.8% girls had no disorders.

Table 1: Distribution of adolescent school girls according to their menstrual pattern (n=250)

Variable	Frequency	Percentage
Age (menarche)		
11	1	0.40
12	32	12.80
13	92	36.80
14	101	40.40
15	22	8.80
16	2	0.80
Inter-menstrual interval		
Less than 21 days	13	5.20
21 to 35 days	189	75.60
More than 35 days	48	19.20
Amount of blood flow		
Scanty	11	4.40
Moderate	176	70.40
Heavy	63	25.20
Days of blood flow		
Less than 3 days	12	4.80
3-5 days	184	73.60
More than 5 days	54	21.60

Table 2: Distribution of adolescent school girls according to menstrual symptoms (n=250)

Variable	Frequency	Percentage
Body ache	76	30.40
Backache	50	20.00
Abdominal pain/cramps	210	84.00
Headache	14	5.60
Irritability	67	26.80

Table 3: Menstrual hygiene practices among adolescent school girls (n=250)

Variable	Frequency	Percentage
Type of absorbent		
Only sanitary napkin	207	82.80
Both sanitary napkin and clothes	43	17.20
Absorbent change times		
≥ 4 times	59	23.60
< 4 times	191	76.40
Cleaning of genitalia during last menstrual cycle		
≥ 4 times	60	24.00
< 4 times	190	76.00
Cleaning of genitalia with		
Soap and water	71	28.40
Only water	179	71.60

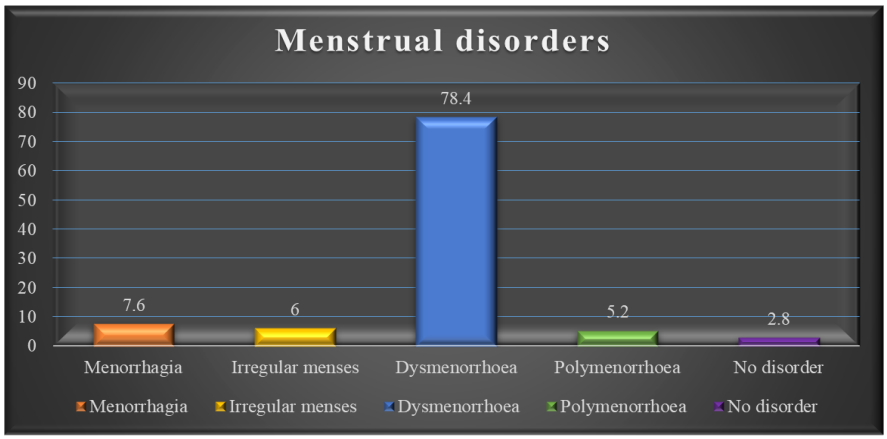

Figure 1: Distribution of adolescent school girls according to menstrual disorders (n=250)

DISCUSSION

Adolescence is a period of transition from puberty to early adulthood. This phase involves major physical and emotional changes in the individual [19, 20]. The mean age of menarche in this study was 13.45±0.95 years, similar to studies conducted in other parts of the country [21-23]. The average menstrual flow was 3.5±1.2 days in the present study; other studies have observed 4.5±1.6 days and 3.95±0.7 days as the duration of menstrual flow [22, 24]. There is not much difference between the study's findings in other parts of the country. On studying the menstrual pattern of these 250 adolescent girls, it was observed that only 5.7% had irregular cycles. In a study conducted in recent times on adolescent girls in rural areas of Maharashtra, 5.6% had irregular cycles, which is comparable to our study [22, 25]. In another study conducted on adolescent girls in rural areas of Karnataka showed comparable results, with 7.5% having irregular cycles [22]. On the contrary, a study reported that 11.2% of adolescent girls had irregular cycles, which is higher than our observation [26]. In the present study, 73.8% of the girls experienced blood flow for 3-5 days. Study findings observed that the mean duration of menstrual blood flow was 4.84±1.27 days, and 93.6% had normal menstrual blood flow between 3-7 days. The current study findings are comparable with the other studies conducted in other parts of the nation [27, 28]. The inter-menstrual period was categorized into three groups, girls who had cycles less than 21 days, whose cycle was in the range 0f 21-35 days and who cycled more than 35 days. Most study participants were in the 21-35 days group, 159(75.7%) days. Another study observed that the inter-menstrual period of the girls was 30.21±5.86 days, which is similar to the current study [27, 28]. The mean inter-menstrual interval in a study conducted in Maharashtra was 28.7±3.26 days [25]. The results are lesser concerning the study done in Karnataka, with 92.7% having an inter-menstrual interval of 28-35 days and 6.8% having >35 days inter-menstrual interval. The present study showed that the duration of blood flow was <3 days in 4.7% and >5 days in 21.5% of the girls, comparable to other studies [22, 25]. Dysmenorrhea is one of the most common menstrual disorders among adolescents in the current study observed that 76.1% school going adolescent girls were suffering from dysmenorrhoea. The incidence of dysmenorrhoea was less in other studies [22, 25]. Other studies had reported 53.6% and 49.13% incidences of dysmenorrhoea. The tolerance of pain is better in rural girls compared to urban girls [26, 29]. Studies revealed a high percentage of medical students suffering from menstrual disorders. Students (5.7%) suffered from irregular menstrual cycles less than in other studies [23, 30-32]. In contrast, in another study, there was a very high prevalence (64.2%) of irregular menstrual cycle [27]. Another study observed that 93.8% of girls had an average of 2.1 menstrual complaints. Furthermore, a maximum number of girls (68.3%) had abdominal pain during menstruation, and other symptoms were pain in the legs, backache, psychological upset, headache, constipation etc. [22, 23]. The other problems associated with menstruation were menorrhagia (6.6%), polymenorrhoea (5.2%) and irregular cycles (4.7%). A similar incidence of problems associated with menstruation was reported in other studies [22, 33, 34] The present study revealed that 82.8% of girls used sterile sanitary pads as an absorbent, whereas 17.2% used cloth and sanitary pads as absorbent. The findings were similar to the study where 89.5% of girls used sterile sanitary pads as absorbent, while 10.5% used old home cloth as absorbent [25]. A study done in an urban setting among adolescent school girls elicited that 52.34% used only sanitary napkins as menstrual absorbent while 44.53% used both cloth and pads [35, 36]. Another study in the villages observed that only 38% of girls used sanitary pads during menstruation, and 63.7% dried their clothes in the corner of the house. The use of sanitary pads was higher in our study. A study in a rural community showed that most girls preferred cloth pieces rather than sanitary pads as menstrual absorbent. Only 11.25% of girls used sanitary pads during menstruation. On the contrary, in another study, three-fourths of the girls used old cloth during their periods, and only one-fifth reported using sanitary pads [37-39]. Cleaning of external genitalia with soap & water was present in 28.5%. Other studies observed that cleaning external genitalia with soap & water was present in 63%, and the rest used only water for cleaning [37, 40].

Limitations of the Study

Every hospital-based study has some limitations and the present study undertaken is no exception to this fact. The limitations of the present study are mentioned. Therefore, the results of the present study may not be representative of the whole country or the world at large. The number of patients included in the present study was less in comparison to other studies. Because the trial was short, it was difficult to remark on complications and morbidity.

CONCLUSION AND RECOMMENDATIONS

Attainment of menarche at the correct age is an important milestone during adolescence, which signifies the normal functioning of the female reproductive system. The study revealed that most adolescent girls had attained menarche at the appropriate age. Menstrual problems are frequent among adolescent girls specially at the onset of which Dysmenorrhoea was the commonest. Open discussion and Reasurance given by the family members and the health care professionals will help the Adolescent girls to withstand their pain. Educating students about menstrual health and importance of use of sanitary napkins by health professionals and teachers can help in reducing their psychological and physical stress and also help to keep their safe future reproductive functions.

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