ORIGINAL ARTICLE

Dysmenorrhoea and Menstrual Hygiene Practices Among Rural Adolescent Girls in Bangladesh

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ABSTRACT

Background: The connection between menstrual hygiene management and overall health of female adolescents is undeniable. ***Objective:*** This study aims to determine the relationship between dysmenorrhoea and menstrual hygiene practices among rural female adolescents. ***Methods:*** This cross-sectional, descriptive study was conducted among 312 adolescent girls (aged between 13 and 19 years) in the selected rural areas of Nawabganj upazila under Dhaka district, Bangladesh, between January and December of 2017. Adolescents who were unmarried, attained menarche at least 2 years before study period and who were willing to participate were included in this study. However, Adolescents who were suffering from any diseases such as, ovarian cysts, endometriosis, pelvic inflammatory diseases, and of those who were taking oral contraceptive pill for any hormonal problem were excluded from the study. Data collection was done using a semi-structured questionnaire which included participants' age, height, weight, menstrual history, clinical features of dysmenorrhoea, medication history, menstrual hygiene practices and facilities. Data was collected through face-to-face interview. The Verbal Multidimensional Scoring System (VMSS) was used to assess the severity of dysmenorrhoea by evaluating multiple dimensions, including pain intensity, impact on daily activities, systemic symptoms, and analgesic requirements. ***Results:*** 70.5% of the rural adolescent girls experienced some forms of dysmenorrhoea – 25.3%, 23.1% and 22.1% reported mild, moderate and severe dysmenorrhoea respectively. No association was observed between factors of menstrual hygiene practices and dysmenorrhoea among the adolescents ($p>0.05$). Surprisingly, institutional separate toilets and disposal facility for sanitary cloths or pads was related to more prevalence of dysmenorrhoea ($p<0.05$). ***Conclusion:*** Access to menstrual products and hygiene facilities needs to be ensured in schools, workplaces and public institutions to manage menstruation with comfort and dignity for adolescent girls.

Keywords: Adolescent girls, Bangladesh, dysmenorrhoea, menstrual health, menstrual hygiene

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INTRODUCTION

Adolescence is the phase of life between childhood and adulthood, from ages 10 to 19. It is a unique stage of human development and an important time for laying the foundations of good health.[1] However, dysmenorrhoea (painful menstruation) is a common conditions among adolescent girls. The pain typically begins just before menstrual period and subsides after a few days. Clinically, primary dysmenorrhoea refers to recurrent pain with no identifiable cause, while secondary dysmenorrhoea results from other pathological conditions, e.g., endometriosis, pelvic inflammatory disease (PID), etc.[2]

Menstrual health impacts half of the global population (women) especially adolescent girls. However, menstrual health challenges always

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have been under acknowledged until recently the World Health Organization (WHO) and other stakeholders put emphasis on it.[3] Now is gaining greater attention and is increasingly recognised as essential to achieve gender equality and the sustainable development goals especially in the context of low- and middle-income countries (LMICs).[3-5] As part of it, painful mestruation (dysmenorrhoea), related psychosocial issues, and menstrual hygiene related practices (of adolescent girls) during menstruation are getting considerable importance, as they affect (their) health by increasing (their) vulnerability to infections and other diseases.[5,6] The World Health Organization (WHO) and other related UN organizations called upon all the member states to comply with their obligations to provide access to information and education, availability of materials, facilities and services to menstrual hygiene with comfort, privacy and safety, timely diagnosis and treatment for menstrual cycle related discomfort and disorders, and supportive social environment free from stigma, discrimination and psychological distress.[5-7]

Both quantitative and qualitative evidence are crucial to advance understanding of menstrual health. Research has often identified lists of factors important for menstrual experience, alongside lists of consequences for health and education.[3] However, relationship between the variety of contributors and their impacts on menstrual health still remains poorly understood from existing literature/reports available in Bangladesh. Therefore, we proposed this study to determine the relationship between dysmenorrhoea and menstrual hygiene practices among rural adolescent girls of Bangladesh. The results of this study are expected to enrich the information pool and advance understanding of menstrual health especially on adolescent girls living in underprivileged society.

METHODS

This cross-sectional, descriptive study was conducted in the selected rural areas of Nawabganj upazila under Dhaka district, Bangladesh, between January and December of 2017. Adolescents who were unmarried, attained menarcheat least 2 years before study period and who were willing to participate were included in this study. However, Adolescents who were suffering from any diseases such as, ovarian cysts, endometriosis, pelvic inflammatory diseases, and of those who were taking oral contraceptive pill for any hormonal problem were excluded from the study. A total of 312 adolescent girls aged between 13 and 19 years were finally selected for this study based on inclusion and exclusion criteria. Data collection was done using a semi-structured questionnaire which included participants' age, height, weight, menstrual history, clinical features of dysmenorrhoea, medication history and menstrual hygiene practices and facilities. Data was collected through face-to-face interview.

The Verbal Multidimensional Scoring System (VMSS) was used to assess the severity of dysmenorrhoea by evaluating multiple dimensions, including pain intensity, impact on daily activities, systemic symptoms, and analgesic requirements. We used a 0-3 scale to categorize the severity of dysmenorrhoea (Grade 0: No pain or impact on daily activities. No analgesics needed; Grade 1: Mild pain that does not usually inhibit daily activities and only occasionally requires analgesics; Grade 2: Moderate pain that affects daily activities, and analgesics are required but provide sufficient relief; and Grade 3: Severe pain that significantly restricts daily activities, with limited relief from analgesics and the presence of systemic symptoms).[8]

Statistical analysis was performed by using Statistical Package for the Social Sciences (SPSS) version 16.0 for windows. Descriptive analysis (as frequency and percentage) was computed and presented in tables. Chi-square test (χ^2) was carried out to see the association between menstrual hygiene practices and dysmenorrhoea. To assess the strength of association, Odds Ratio (OR) and their corresponding 95% confidence interval (CI) were also calculated. A p-value <0.05 was considered statistically significant.

RESULTS

The mean age of the participants was 15.7±1.23 years (ranged between 13 and 19 years). Among 312 adolescent girls, 220(70.5%) reported some forms of dysmenorrhoea (menstrual pain), while 92(29.5%) never experienced menstrual pain. 79(25.3%) experienced mild dysmenorrhoea, while 72(23.1%) had moderate and 69(22.1%) had severe dysmenorrhoea. (Table 1). Prevalence of dysmenorrhoea was lower among those girls who maintained their hygiene by both regular bathing

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and frequent pad changing (65.1%), followed by only regular bathing (72.5%) and only frequent pad changing (75.%); however, the difference was not statistically significant (p>0.05). Dysmenorrhoea was higher among those who reused cloth pieces (80.3%) as an absorbent material and lower who did not reuse cloths (66.7%) during menstruation (p>0.05). Dysmenorrhoea was found the highest among those girls who required sanitary product 3–5 in a day (73.8%), followed by the girls used 6–8 products/day (72.4%) and 1–2 product/day (66.2%), but the difference was not significant (p>0.05). In this study, 21.2% girls reused cloths during menstruation; among them who used only water for cleaning their cloth pieces had more dysmenorrhoea (100%) than those who used both water and soap for cleaning (79.7%) (p>0.05). Although dysmenorrhoea was more common among those girls who dried their cloth in open place or under sun (81.8%) than those who dried cloth inside room (78.8%), the difference was not significant (p>0.05) (Table 2). Adolescent girls whose educational institutions had separate toilet facility had higher prevalence of dysmenorrhoea (71.5%) than who lacked such facility (40%) (p<0.05). Dysmenorrhoea was around 3.7 times higher among those whose educational institutions had separate toilet facility (OR=3.76, 95% CI=1.037–13.681). Prevalence of dysmenorrhoea was higher among those whose institutional toilet did not have soap and water facilities (74.7%) than those had such facilities (64.9%); however, the difference was not statistically significant (p>0.05). Girls having institutional disposal facility for sanitary cloths or pads had more prevalence of dysmenorrhoea (72.5%) than those who did not have such facilities (42.9%) (p<0.05). Dysmenorrhoea was about 3.5 times higher among those girls whose institutions had sanitary product disposal facility than those who did not have this facility (OR=3.517, 95% CI=1.427–8.665) (Table 3).

Table 1: Prevalence of dysmenorrhoea among study participants (n=312)

Characteristics	Frequency	Percentage
No dysmenorrhoea	92	29.5
Mild dysmenorrhoea	79	25.3
Moderate dysmenorrhoea	72	23.1
Severe dysmenorrhoea	69	22.1

Table 2: Relationship of menstrual hygiene practices and dysmenorrhoea among adolescents (n=312)

Characteristics	Dysmenorrhoea		No dysmenorrhoea		Test statistics
	Frequency	Percentage	Frequency	Percentage	
Ways of preserve hygiene during menstruation					
Regular bathing	95	72.5	36	27.5	χ^2= 2.465p=0.291
Frequent pad changing	54	75.0	18	25.0	
Both	71	65.1	38	34.9	
Product use during menstruation					
Sanitary pad	151	68.0	71	32.0	χ^2= 3.878p=0.144
New cloth	16	66.7	8	33.3	
Old cloth	53	80.3	13	19.7	
Number of product require					
1–2	86	66.2	44	33.8	χ^2= 2.072p=0.355
3–5	124	73.8	44	26.2	
≥6	10	72.4	4	28.6	
Product use for cleaning					
Only water	2	100.0	0	.0	χ^2= 0.000
Soap and water	51	79.7	13	20.3	p=1.000
Place using for sanitary cloth					
In open place	27	81.8	6	18.2	χ^2=0.096
Inside room	26	78.8	7	21.2	p=0.757

Chi-square test was applied to reach p-value.

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Table 3: Correlation of menstrual hygiene facilities in schools and dysmenorrhoea among adolescents (n=312)

Characteristics	Dysmenorrhoea		No dysmenorrhoea		Test statistics
	Frequency	Percentage	Frequency	Percentage	
Separate toilet facility					
Yes	216	71.5	86	28.5	χ^2=4.626, p=0.031 OR=3.76 CI=1.037– 13.681
No	4	40.0	6	60.0	
Soap and water facility					
Yes	87	64.9	47	35.1	χ^2=3.527,
No	133	74.7	45	25.3	p=0.060
Sanitary product disposal facility					
Yes	211	72.5	80	27.5	χ^2=8.282, p=0.004 OR=3.517 CI=1.427-8.665
No	9	42.9	12	57.1	

Chi-square test was applied to reach p-value.

DISCUSSION

Identification of modifiable risk factors for dysmenorrhoea is important because the condition affects a large proportion of adolescents and contributes to school absenteeism, lost work time, and reduced quality of life.[9-11]

Our study revealed a prevalence of dysmenorrhoea among adolescent girls of 70.5%, with 25.3% having mild dysmenorrhoea, 23.1% moderate and 22.1% severe dysmenorrhoea. Almost similar report came from the study done in Tanzania showed 66.1% prevalence of dysmenorrhoea, with 9.6%, 34.9% and 21.6% reported mild, moderate and severe dysmenorrhoea respectively.[10] However, much higher prevalence (93.4%) was observed in a study done in Nepal.[12] In another study done in Indonesia reported that about 80% of adolescent female experienced moderate to severe dysmenorrhoea.[13]

In this study, no association was observed between factors of menstrual hygiene practices and dysmenorrhoea among the adolescents ($p>0.05$). However, for institutional facilities, those who had separate toilets and disposal facility for sanitary cloths or pads showed more dysmenorrhoea ($p<0.05$). In general, issues related to menstruation-related practices handled by adolescents vary in different ways among different ethnicities across the world based on factors such as personal preferences, socio-economic standing, regional customs, cultural knowledge, and level of education.[10-14] In a study done among urban adolescent girls in Tanzania showed that delayed age of menarche was strongly associated with good menstrual hygiene practice that ultimately helped in coping with menstrual pain.[10] In contrast, a high prevalence of dysmenorrhoea was reported by a study done in Nepal, despite very good menstrual hygiene practices among the participants.[12]

Approximately 70% of the population in low-and middle-income countries resides in rural areas.[10] Unfortunately, the majority of rural adolescents lack sufficient knowledge and facilities on menstrual hygiene practices due to societal and cultural misconceptions around menstruation in low- and middle-income countries (LMICs).[12] Similar reports from urban areas in Africa indicate a significant level of knowledge and practice regarding menstrual hygiene, comparing to rural areas as girls living in the rural areas may face marginalization and inequity in this regard.[10] A similar picture has been found in our country as a previous study reported a satisfactory menstrual hygiene practices among adolescents living in urban slum areas.[14] However, they also appealed for both formal and informal transmission of

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menstrual hygiene knowledge through organized community efforts especially for rural adolescent girls.[14]

About limitations of the present study, it was conducted in the selected rural areas of Nawabganj upazila under Dhaka district with a small sample, which limits the generalizability of the study findings in whole population of the country. Moreover, using a cross-sectional design hardly determines causal relationship. Besides, during interview process, there was a possibility of recall bias while investigating on the menstrual patterns of the participants that may limit the accuracy of findings of this study. Apart form that the self-reported questionnaire used in the study posed challenges in classifying individuals with primary or secondary dysmenorrhoea, as additional diagnostic tools are needed to discern underlying pathology.

CONCLUSION

Our data suggests a high prevalence of dysmenorrhoea among rural adolescent girls. However, no association was observed between factors of menstrual hygiene practices and dysmenorrhoea. Regarding institutional facilities, girls having separate toilets and disposal facility for sanitary cloths or pads had more prevalence of dysmenorrhoea. Government's agencies as well as NGOs should come forward to include an attention to menstruation as part of a broader sexual and reproductive health (SRH) response to address the gaps in access to menstrual products and hygiene facilities in schools, workplaces and public institutions and enhance support to managing menstruation with comfort and dignity for adolescent girls.

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Ethical Clearance: This study was approved by the Institutional Review Board (IRB) of National Institute of Preventive and Social Medicine (NIPSOM), Dhaka, Bangladesh. Written informed consent was obtained from the adolescents who are ≥18 years. However, for the minor participants (aged <18 years), we sought assent from the them and written informed consent from their parent(s) or legal guardian.

Authors' Contribution: Concept and design of the study: NJU, MAR; Supervision of the study: MAR; Selection of the participants, data collection, scrutiny and compilation: NJU, SA, KSR; Data analysis: NJU, AS: Manuscript preparation, editing, revision and final submission: NJU, MAR, SA, KSR, AS.

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