Volume: 16, Issue:1 Page: 98-107 2022

Journal homepage: ijsab.com/ijsb

IJSAB International

Menstrual Hygiene Management in Adolescent Girls Amid Covid-19 Pandemic: A Cross-Sectional Study in Bangladesh

Tasrin Jahan & Khaleda Hossain Moon

Abstract

Menstruation is an inevitable part of women reproductive health. This study aimed to assess the percentage of adolescent girls who had experienced any change in the menstrual absorbent pattern during the Covid-19 pandemic and correlate it with several socio-demographic variables. This crosssectional study was conducted among urban middle-class adolescent girls in the capital city of Bangladesh, Dhaka. A total of 281 teenage girls from the Dhaka city (urban region of the District), ages 10 to 19, who had gone through menarche were included in the study after receiving consent from the participants &/or parents. Data collected over fifteen days from 1 September 2021 to 15 September 2021. The interview was done by female interviewers with a structured questionnaire. Around 37.4% participants changed their menstrual absorbent type during the pandemic. Among them 13.2%, 8.5% and 15.7% have suffered from itchiness & irritation, sadness and all of these three respectively. None of the sufferer has sought any medical support to cure from the reproductive health issues. The washing procedure of reusable cloth was satisfactorily sun drying. There were significant relationships between changes in the usual pattern of menstrual absorbent usage with participants' occupation (p=0.010), participants' income (p=0.000), remission in participants' income (p=0.002), and downfall in total family income (p=0.000) during the Covid-19 pandemic. Personal and family income played a vital role in preserving regular menstrual absorbent usage patterns. If income decreases the absorbent quality and quantity were altered to mitigate the financial problem in most cases. Education or other socio-economic status have negligible influence in seeking medical care in case of reproductive of health issues in early stage.



IJSB Accepted 27August 2022 Published 31 August 2022 DOI: 10.5281/zenodo.7036695

Keywords: Adolescent girls, Bangladesh, Menstrual absorbent change, Pandemic.

About Author (s)

Tasrin Jahan (Corresponding author), Department of Public Health Nutrition, Primeasia University, Banani, Dhaka, Bangladesh-1213.

Khaleda Hossain Moon, Project Coordinator, CRAAIN Project, Rupantar, Bagerhat, Bangladesh-9300.

Introduction

Menarche, or the start of menstruation, is a normal experience for teenage girls that entail changes to their bodies, emotions, minds, and social interactions (Biran et al., 2012). Menstruation is a necessary and healthy biological process, but because of discriminatory gender roles and cultural norms, many girls are unable to get accurate information on menstrual health and cleanliness and adequate services (Sommer et al., 2017). Additionally, it may force them to devise their own methods of managing menstruation with existing traditional and cultural norms, level of knowledge, available resources, and personal preferences. This exposes them to the challenges of safely managing menstrual blood with dignity. Even in cases where females had sufficient knowledge regarding MHM, economic hardship, limited access to the family decision-making process, and the sudden emergency like the Covid-19 pandemic have subsided the priority of MHM ever than before. As a result, girls are forced to seek alternative unhygienic methods and materials (Alam et al., 2017).

The use of clean menstrual absorbents to absorb or collect menstrual blood is regarded as a crucial component of MHM by the WHO and UNICEF Joint Monitoring Program for drinking water, sanitation, and hygiene (UNICEF, 2019). There are two approaches depending on the menstrual blood collector under MHM. The more secure contemporary approach - uses disposable sanitary pads and the conventional approach - uses reused old clothes or rags (Morison et al., 2005). Considering this, studies on developing countries' menstrual hygiene reveal that most adolescent girls often fail to conserve a healthy menstrual hygiene practices (Chandra-Mouli et al., 2017; Islam et al., 2018). In the present Covid-19 pandemic situation, it is essential for adolescents to practice sustainable menstrual hygiene behaviors to safeguard reproductive health. There are very few studies that address how adolescents in Bangladesh manage their menstrual hygiene during the Covid-19 era. This knowledge is crucial for identifying the gap between personal hygiene knowledge and practice as well as for planning and implementing long-term, all-encompassing health programs to address this type of issue the future, particularly throughout the Covid-19 era and beyond. Therefore, this study intends to analyze the pattern of changes in the types of menstruation absorbent in middle-class urban adolescent girls as well as numerous socioeconomic factors associated with these sorts of changes during Covid-19. Therefore, this study aims to observe the pattern of changes in the types of menstrual absorbent in middle-class urban adolescent girls due to the Covid-19 pandemic and several socioeconomic determinants related to these kinds of changes.

Literature review

When it comes to choosing the right sort of menstrual absorbent, how frequently to replace it, and when to do so, many adolescent girls experience substantial difficulty (Kuhlmann et al., 2017; Menstrual hygiene, 2020). The self reliance and advancement of adolescent girls depend largely on their ability to keep themselves clean while they are menstruating (UNICEF, 2008; Barathalakshmi et al., 2019). Girls use menstrual hygiene items such as a tampon, sanitary napkins, menstrual cups, and clothing at this time to absorb menstrual blood and maintain cleanliness (Rheinlander and Wachira, 2015). Even though sanitary napkins are highly recommended, some people cannot afford them in a situation known as "period poverty" (Babbar et al., 2021). Period poverty is defined as the lack of access to menstrual health management products due to financial hardship, a lack of access to clean water and sanitation facilities, and a lack of education about proper hygiene during menstruation, which can leave adolescents feeling uncomfortable, ashamed, and depressed (Dasgupta and Sarkar, 2008; Kuhlmann, 2017). Girls are forced to use paper, old garments, dried leaves, or socks to collect menstrual blood because they lack access to these essential menstrual hygiene management (MHM) supplies (HouseS et al., 2012). These products significantly increase the risk of urogenital infections in menstruating girls, including bacterial vaginosis, urinary tract infections, and reproductive tract infections (Das et al., 2015). It may demonstrate the symptom and indication of vaginal itch and irritation (Hennegan, 2016). When it comes to humanitarian crisis and emergencies, the overall scenario gets even worse (VanLeeuwen & Torondel, 2018). For instance, the 2015 Nepal earthquake had an impact on 1.4 million women and girls (Chaudhary et al., 2017). For girls and women, sanitary napkins were of the utmost importance. However, within the first month after the earthquake, none of them claimed to have received any sanitary pads (Budhathoki et al., 2018). Similar incidents occurred in Uganda, when women and girls who spent decades in refugee camps were dependent on the government for daily meals. To acquire their daily food, they had to travel a long way. Girls and women have mentioned finding it difficult to travel so long distances during their periods since they end up getting stained. Women have even been found to have to sell their food aid in order to buy sanitary napkins (CARE International in Uganda CARE International in Uganda Annual Report, 2018). Comparable to other humanitarian crises, COVID-19 induced lockdowns have caused many challenges for those who menstruate. According to UNICEF, the COVID-19 pandemic would indirectly influence women's capacity to control their menstrual hygiene, adversely affecting the impoverished (UNICEF, 2020). Aggravation on menstrual health may become worse during a pandemic like this (UNICEF, 2020). Women's and young girls' needs for menstrual hygiene can have a wide range of effects on basic hygiene, health, and welfare, which could ultimately impede progress toward the Sustainable Development Goal (SDG) of gender equality and dignity for all (UNICEF, 2020). A recent online study of experts from 24 countries in North America, Latin America, Europe, Africa, and the Asia Pacific revealed that 81% of respondents were worried that menstruating women wouldn't be given the help they need to take care of their MHM needs (PLAN International, 2020). There isn't much data yet on how the COVID-19 epidemic has affected menstrual hygiene management directly in Bangladesh. In light of this, this study investigates how the Covid-19 epidemic has affected adolescent girls' management of menstrual hygiene in the city of Dhaka regarding usage of menstrual absorbent.

Materials and Methods

Study Setting:

Locally, Rupnagar Tinshed (Mirpur, Dhaka) is considered an area with a middle-class population. There are 16 lanes and 650 houses in that area. Only 290 owners still live in their houses and couldn't develop their houses as buildings. Other 360 house owners either developed their tin-shed house as a multistoried building and earned monthly fare from tenants and/or lived in that same building or left the area, keeping their tin-shed as it is and earning monthly fare from tenants. We have considered those 290 households (HHs) for interviews.

Study Design:

To conduct the cross-sectional study, the data was collected from September 1, 2021, to September 15, 2021, among 10-19 years (National Hygiene Survey, 2018) old adolescent girls who have reached menarche of Rupnagar Tinshed area, Mirpur, Dhaka, Bangladesh. Trained female interviewers visited the HHs and informed the participants and guardians about the purpose of the study, and ensured that the study had no personal implications.

Sample size estimation and procedure:

We have considered the number of participants in the study based on the following sample size calculation. Sample size, (n) = $Z_{1-\alpha/2^2} p^*(1-p)/d^2$. Where, $Z_{1-\alpha/2}$ = is standard normal variate at 95% level of confidence (1.96), p= 0.21 expected proportion in the population of that age group (in this case, according to National Hygiene Baseline survey 2014, we consider 0.21 which is

Urban adolescent used a disposable pad during menstruation) (National Hygiene Baseline Survey, 2014), d= significance level (0.05). Considering a non-response rate as it was just after the lockdown withdrawal on 12th August 2019 (Better Work, 2022) and a questionnaire error factor of 10%, a total of 281 adolescent girls from those 290 HHs were sampled for the interview.

Statistical Analysis:

The quantitative data were analyzed using SPSS for Windows Version 26.0. Descriptive statistics, such as frequency, percentages, and mean were used to analyze the demographic details of the respondents. Pearson Chi-square (X²) test (at α level 0.05) was carried out to observe the association among variables.

Result

All randomly selected participants gave consent to participate in the study. This gave a consent rate of 100%. As per the objectives of the study and the analysis of the data, the findings can be presented as follows.

Participants' characteristics:

Table I shows, that all of the participants were between 12-19 years. The mean age of participants was 15.31 years. Most of the participants were unmarried (94.66%) and only 5.34% were married but 1.07% got separated. 8.69%, 15.0%, and 35.0% of married participants were at 17, 18, and 19 years of age respectively.

Characteristics	haracteristics Frequency (N) Percentage (%)		
Age of participants' (years)	12-15	162	57.65
	16-19	119	42.35
Marital status	Unmarried	266	94.66
	Married	12	4.27
	Separated	3	1.07
Age of married participants	17	2	8.69
(years)	18	6	15.0
	19	7	35.0
Family size	3	3	1.07
	4	49	17.44
	5	137	48.75
	6	71	25.27
	7	21	7.47
Family head gender	Male	279	99.30
	Female	2	0.70

Table I:Socio-demographic characteristics of urban adolescent girls.

Table II shows, that 91.4% of participants were students but only 86.1% were solely studying. A large proportion (42.7%) were studying or had halted studying up to SSC and a good proportion (12.8%) of participants' were pursuing higher education. 9.6% of participants' were in the possession of earnings although most of them (5.7%) earned between 5,000-10,000 BDT/month. As 90.4% of participants were not earning, only 9.3% of participants' income decreased due to Corona, and the income of other 0.4% of participants' were not affected due to Corona.

Table II: Association between menstrual absorbent change and socio-demographic
characteristics of the participants.

Characteristics	Menstrual Absorbent Change		Total N (%)	р	
	$Y_{es}(105)$	No (176)	N (70)		
Participants' Education	105 (105)	110 (170)			
Up-to class 8	77 (27.4%)	0.796			
Up-to SSC	41 (34.2%)	79 (65.8%)	120(42.7%)		
Up-to HSC	17 (38.6%)	27 (61.4%)	44 (15.7%)		
Professional Diploma continue	01 (25.0%)	03 (75.0%)	04 (1.4%)		
Bachelor Study continue	16 (44.4%)	20 (55.6%)	36 (12.8%)		
Participants' Occupation				•	
Only Student	82 (33.9%)	160 (66.1%)	242 (86.1%)	0.010	
Only Homemaker	03 (37.5%)	05 (62.5%)	08(2.9%)		
Only Working	09 (56.2%)	07 (43.8%)	16(5.7%)		
Student-working	09 (81.8%)	02 (18.2%)	11(3.9%)		
Student-homemaker	02 (50.0%)	02(50.0%)	04(1.4%)		
Participants' Income BDT/month				•	
< 5000	0.0 (0.0%)	03 (100.0%)	03 (1.1%)	0.000	
5000-10000	12 (75.0%)	04 (25.0%)	16(5.7%)		
10000-20000	06 (85.7%)	01 (14.3%)	07(2.5%)		
20000-25000	0.0 (0.0%)	01 (100.0%)	01(0.3%)		
0	87 (34.3%)	167(65.7%)	254(90.4%)		
Decrease of Participants' Income					
No	0.0 (0.0%)	01 (100.0%)	01 (0.4%)	0.002	
Yes	18 (69·2%)	08 (30.8%)	26(9.3%)		
Previously Zero	87 (34·3%)	167 (65.7%)	254(90.4%)		
Education of Family Head					
Up-to class 8	02 (20.0%)	8(80.0%)	10 (3.5%)	0.461	
Up-to SSC	11 (35.5%)	20(64.5%)	31(11.0%)		
Up-to HSC	54 (39·4%)	83 (60.6%)	137(48.8%)		
Up-to Bachelor or Professional Diploma	27 (42·2%)	37 (57.8%)	64 (22.8%)		
Up-to Master's	11(28.2%)	28 (71.8%)	39(13.9%)		
Family Income BDT/month					
10000-20000	17 (34.7%)	32(65.3%)	49(17.4%)	0.951	
20000-25000	23 (35.9%)	41(64.1%)	64(22.8%)		
25000-30000	35 (39.8%)	53 (60·2%)	88(31.3%)		
30000-35000	29 (38·2%)	47 (61.8%)	76 (27.0%)		
>35000	01(25.0%)	03 (75.0%)	04(1.4%)		
Decrease of Family Income					
Yes	95 (72.5%)	36(27.5%)	131 (46.6%)	0.000	
No	10 (6.7%)	140(93.3%)	150(53.4%)		

*SSC= Secondary School Certificate *HSC=Higher Secondary School Certificate

Socio- Economic characteristics:

The number of 10-19 years of age adolescent girls per household ranged from 1 to 3. 31.7% of participants were only one eligible respondent from that HH. **Table I** shows that, the average family size was 3 to 7 members per family. The mean size of a family was 5.21. Usually, Bangladeshi families are headed by a male. Evidently, 99.3% of family heads were male. The educational attainment of the family decision-maker is very important for the growth and development of other family members. **Table II** shows, that in the selected middle-class families the educational attainment of the family head was varied. 13.9% of family heads achieved a postgraduate degree. A large proportion (22.8%) of family heads completed higher study i.e., bachelor's degree or professional diploma but a larger proportion (48.8%) stopped studying after the completion of HSC. 31.3% of participants' family income was between 25000-30000 BDT and only 1.4% of participants' family income was more than 35000 BDT. The income of most of the families (53.4%) was not affected due to Covid-19.

Variable		Frequency	Percentage
Menstrual Absorbent change	Yes	105	37.4
	No	176	62.6
Types of menstrual absorbent	Disposable Sanitary napkin, quality and quantity as	108	38.4
changes	before		
	Disposable Sanitary napkin quality compromised than	30	10.7
	before		
	Disposable Sanitary napkin replaced with loose cloth	12	4.3
	due to financial condition		
	Silicon Tampon as before	1	0.4
	Reduced number of disposable sanitary napkin+	45	16.0
	started loose cloth		
	Reduced frequency of disposable sanitary napkin	17	6.0
	change (quantity reduced)		
	Reusable cotton pad as before	8	2.8
	Disposable loose Cloth as before	60	21.4
Reusable loose cloth washing	Washing with soap, Sundry	57	20.3
process	Not Applicable	224	79.7

Table III: Menstrual absorbent usage and hygiene maintenance.

Menstrual hygiene:

Analysis of the data obtained on the menstrual absorbent usage for 281 adolescent girls aged 10-19 years indicated that (Table III) 105 (37.4%) of them had started utilizing a different pattern of absorbent during Covid-19 pandemic due to Corona related crisis; 16% started loose cloth along with sanitary napkin, 10.7% lowered the quality of sanitary napkin, 6% reduced the frequency of napkin change. A larger proportion of participants (62.6%) did not have to change their absorbent usage, among all 21.4%, 2.8%, and 0.4% were used to utilize disposable loose cloth, reusable cotton pad, and silicon tampon on regular basis, respectively. Regarding the healthy and hygienic use of absorbents, 38.4% continued using disposable sanitary napkins and maintained the quality along with quantity as before. The positive side was that the participants' who had started cloth-based napkins during this pandemic, all of them washed the reusable cloth with soap and sundried later. Table II shows that, a total of 26 (9.3%) participants' income decreased, among them 18 (69.2\%) brought alteration in their regular pattern of adsorbent usage. Other 87 (34.3%) participants' who also changed their absorbent usage pattern were influenced by their family income. Total 95 (72.5%) participants', whose family income decreased and changed their absorbent usage patterns. It's evident that, change in menstrual absorbent usage was significantly associated with participants' occupation (0.010), participants' income (0.000), participants' income change (0.002), and family income change (0.000). However, change in menstrual absorbent usage was not associated with participants' education level, education of family head, and monthly family income.

MHM induced health Problems:

Participants who have changed their menstrual absorbent have suffered from several problems like itching & irritation in/around the vaginal area, and sadness due to compromising on the quality or quantity of absorbent. A total of 37 participants have suffered from itching & irritation, 24 have suffered from sadness and 44 have suffered from a combination of all three of these (**Figure I**).



Figure I: Pie chart showing frequency of participants suffered from MHM related problems.

Interestingly, none of the participants have sought any medical help for recovering from these problems induced due to menstrual hygiene management (**Table IV**).

Table IV: Percentage of participants who have sought medical help due to suffering MHMrelated problems

	Problem induced due to menstrual absorbent change (%)				
		None	Itching & Irritation (a)	Itching, Irritation &	Both (a & b)
				Sadness (b)	
Seek medical	Yes	0	0	0	0
help	No	62.6	13.2	8.5	15.7

Discussion

This was a cross-sectional study, conducted in a small middle-class population occupied urban area with the main objective of the study was to assess the changes in menstrual absorbent usage due to financial crisis during the Covid-19 pandemic among the 10-19 years old adolescent girl who has reached menarche. A total of 281 participants were interviewed. Although we have considered 10-19 years of adolescent girls as our eligible participants, however, all of our participants were 12-19 years old and none of the adolescent girls aged 10-11 years from our randomly selected households of that study area had reached menarche, which is consistent with several Indian studies (Behring, 2021; Paria et al., 2014). We found that the average family size was 5.21, which is quite similar to the findings of BDHS 2017-2018, 4.2 for urban area (Bangladesh Demographic and Health Survey 2017-18.). In the Bangladeshi context, adolescent girls are being got married for socio-economic security and sometimes for religious reasons (Bangladesh Demographic and Health Survey 2017-18). Thus, 5.60% of our participants were married during their adolescence. According to HIES 2016 average income per household was 22,600 taka (BBS, 2016) and we found that 22.8% of the participants' family monthly income was between 20000 to 25000 BDT. The study identified that 46.6% of the participants' family income and 9.3% of participants' income had reduced due to corona which can be correlated with the findings of a survey by the Center for Policy Dialogue (CPD), where 62% of people lost their job due to the Corona virus outbreak (Dhaka Tribune, June 2nd, 2021). Around three-fourth of the participants were using disposable sanitary napkins and one-fourth of the total participants were using cloth-based napkins before the Covid-19 induced crisis. A total of 20.3% of participants' started cloth-based napkins which are also evident by Indian study (Cotton pad a comeback, Financial Express, May 17 2022). Around 6% of adolescent girls mitigated the crisis by reducing the frequency of disposable sanitary napkin change which can lead to reproductive health-related diseases (Sumpter & Torondel, 2013). Menstrual hygiene management is crucial to maintaining reproductive health and avoid physical health issues like itchiness and irrational feelings as well as

psychological dissatisfaction. These problems can lead to poor school performance, absenteeism in school (Alam et al., 2017) and sometimes social withdrawal. Poor health outcomes like itching & irritation in/around the vaginal area can be a sign of urinary tract infection (UTIs) and reproductive tract infections (RPTs) (Almeida-Velasco & Sivakami,2019; Eijk et al, 2016). Proper maintenance of menstrual hygiene requires knowledge, which may enrich with regular institutional education. Although the educational level of the participants (p=0.796) and the educational attainment of the head of the family (p=0.461) did not show any significance in the maintenance of regular menstrual absorbent during the Covid-19 pandemic. Having an occupation and consistent earning source strengthens the decision-making capacity of any person (Yogendrarajah & Rathiranee, 2013) which is significant with the current finding of the occupation of participants (p=0.010) and income of participants (p=0.000). Although total family income did not show any significance (p=0.951) with the management of menstrual absorbent. However, decline in participants' income (p=0.002) and deduction in family income (p=0.000) showed significance with the change in menstrual absorbent during the Covid-19 pandemic.

Conclusion

The major findings of the study were that the decrease in participants' and family income was responsible for any alteration in menstrual absorbent usage patterns during the Covid-19 pandemic. The sufferings faced by the participants are needed to be addressed. Awareness among the participants and parents should be raised in a way that nobody neglects the early signs of health issues related to reproductive health and to utilizes government medical support related to this. The findings may help the governmental and non-governmental organizations to design programs to mitigate any challenges regarding MHM in any pandemic situation where income generation become a challenge and people prefer to cut off their budget by reducing spending on menstrual hygiene material and risking the reproductive health as well as psychological well being of innocent adolescent girls.

Funding

None.

Conflict of interest

No conflict of interest was declared for this study.

References

Alam, M. U., Luby, S. P., Halder, A. K., Islam, K., Opel, A., Shoab, A. K., Ghosh, P. K., Rahman, M., Mahon, T., &Unicomb, L. (2017). Menstrual hygiene management among Bangladeshi adolescent schoolgirls and risk factors affecting school absence: results from a cross-sectional survey. *BMJ open*, 7(7), e015508. https://doi.org/10.1136/bmjopen-2016-015508
Almeida-Velasco, A. & Sivakami, M. (2019) Menstrual hygiene management and reproductive tract infections: a comparison between rural and urban

India. *Waterlines*, 38(2), 94–112. https://doi.org/10.3362/1756-3488.18-00032

- Babbar, K. (2021) Taboos and myths as a mediator of the relationship between menstrual practices and menstrual health. *European Journal of Public Health*, 31(Supplement_3),ckab165.552. https://doi.org/10.1093/EURPUB/CKAB165.552
- BangladeshDemographicandHealthSurvey2017-18.https://dhsprogram.com/pubs/pdf/FR344/FR344.pdf
- Barathalakshmi J, Govindarajan PK, Ethirajan N, Felix AJ (2019). Knowledge and practice of menstrual hygiene among school going adolescent girls. Natl J Res Commun Med.2014;3:138-42.
- BBS, Preliminary Report on Household Income and Expenditure Survey (HIES) 2016. Available: https://drive.google.com/file/d/1TmUmC-0M3wC5IN6_tUxZUvTW2rmUxMce/view
- Better Work, 2022. https://betterwork.org/portfolio/covid-timeline-in-bangladesh/
- Biran, A., Schmidt, W.-P., Sijbesma, C., Sumpter, C., Hernandez, O., Hutton, G., Lanata,

C., Luvendijk, R., Ram, P., Slater, M., Sommer, M., Toure, O. & Weinger,

M. (2012) Background paper on measuring WASH and food hygiene practices-definition of goals to be tackled post 2015 by the Joint Monitoring Programme. London School of Hygiene and Tropical Medicine.

- Budhathoki, S.S., Bhattachan, M., Castro-Sánchez, E., Sagtani, R.A., Rayamajhi, R.B., Rai,
 - P. & Sharma, G. (2018) Menstrual hygiene management among women and adolescent girls in the aftermath of the earthquake in Nepal. *BMC Women's Health*, 18(1), 33. https://doi.org/10.1186/s12905-018-0527-y

CARE International in Uganda CARE International in Uganda Annual Report. (2018)

- Chandra-Mouli, V., Patel, S.V. Mapping the knowledge and understanding of menarche, menstrual hygiene and menstrual health among adolescent girls in low- and middle-income countries. *Reprod Health* 14, 30 (2017). https://doi.org/10.1186/s12978-017-0293-6
- Chaudhary, P., Vallese, G., Thapa, M., Alvarez, V. B., Pradhan, L. M., Bajracharya, K., Sekine, K., Adhikari, S., Samuel, R. & Goyet, S. (2017) Humanitarian response to reproductive and sexual health needs in a disaster: the Nepal Earthquake 2015 case study. *Reproductive Health Matters*, 25(51), 25–39. https://doi.org/10.1080/09688080.2017.1405664
- Cotton comeback Financial Express, 2022. pad Mav 17 а https://www.financialexpress.com/lifestyle/menstrual-hygiene-management-tipsfor-safe-periodhygiene/1973872/Dhaka Tribune. Iune 2nd, 2021. https://archive.dhakatribune.com/business/2021/06/02/how-will-the-budgetaffectthe-middle-class

Das P, Baker KK, Dutta A, et al. Menstrual Hygiene Practices, WASH Access and the Risk of Urogenital Infection in Women from Odisha, India. PLOS ONE. 2015;10(6): e0130777.

- Dasgupta A, Sarkar M. Menstrual hygiene: how hygienic is the adolescent girl? Indian Journal of Community Medicine.2008; 33(2):77-80.
- van Eijk, A., Sivakami, M., Thakkar, M., Bauman, A., Laserson, K. & Coates, S. (2016) Menstrual hygiene management among adolescent girls in India: a systematic review and meta-analysis. *BMJ Open*, 6(3), e010290. https://doi.org/10.1136/bmjopen-2015-010290
- Hennegan J, Dolan C, Wu M, Scott L, Montgomery P. Measuring the prevalence and impact of poor menstrual hygiene management: a quantitative survey of school girls in rural Uganda. BMJ Open. 2016;6(12):e012596.
- House S, Mahon T, Cavill S. Menstrual Hygiene Matters; A Resource for Improving Menstrual Hygiene Around the World. First Edit, Tech. Rep., WaterAid, London UK; 2012
- Islam, M. S., Quddus, A. H. G., & Foroushani, A. R. (2018). MAPPING THE BARRIERS OF RECEIVES AFFORDABLE MENSTRUAL HYGIENE PRODUCTS AND HEALTHCARE SERVICES AT THE RURAL SETTING OF BANGLADESH. *Pakistan Journal of Public Health*, 7(4), 202-205. https://doi.org/10.32413/pjph.v7i4.32.
- Kuhlmann AS, Henry K, Wall LL. Menstrual hygiene management in resource-poor countries. Obstet Gynecol Surv. 2017; 72:356-376
- Menstrual Hygiene. Feminine Hygiene, Gynaecology and Menstruation Information, Resources and Products for Dads and Husband; 2020. Avaialble:http://www.menstrualhygiene.com
- Morison L, Ekpo G, West B, Demba E, Mayaud P, Coleman R, Bailey R, Walraven G. Bacterial vaginosis in relation to menstrual cycle, menstrual protection method, and sexual intercourse in rural Gambian women. *Sex Transm Infect.* 2005 Jun;81(3):242-7. doi: 10.1136/sti.2004.011684. PMID: 15923295; PMCID: PMC1744975.
- National Hygiene Baseline Survey 2014,p-54. Available: https://washmatters.wateraid.org/publications/bangladesh-national-hygiene-baselinesurvey-preliminary-report-2014
- National Hygiene Survey 2018. Available: http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/b343a8b4_956b_45 ca 872f_4cf 9b2f1a6e0/2021-02-18-12-34-38806de91fa4ca8d9e70db96ecff4427.pdf
- Paria B, Bhattacharyya A, Das S. A comparative study on menstrual hygiene among urban and rural adolescent girls of west bengal. *J Family Med Prim Care*. 2014;3(4):413-417. doi:10.4103/2249-4863.148131

- PLAN International. (2020) Periods In a Pandemic Menstrual hygiene management in the time of COVID-19.
- Rheinlander T, Wachira M. Emerging Issue Brief: Menstrual Hygiene an Ancient but Ignored Global Health Problem of All Women, Global Health Minders; 2015. Avaialble:http://ghmmenstrualhygienebrief.pdf.

S. Behring. September 29, 2021. At What Age Do Most Girls Get Their First Period?. Available: https://www.healthline.com/health/womens-health/what-age-do-girls-get-their-period.

Sommer, M., Schmitt, M.L., Clatworthy, D., Bramucci, G., Wheeler, E. & Ratnayake, R. (2017) What is the scope for addressing menstrual hygiene management in complex humanitarian emergencies? *A global review*, 35, 1756–3488. https://doi.org/10.3362/1756-3488.2016.024

Sumpter C, Torondel B. A systematic review of the health and social effects of menstrual hygiene management. *PLoS One.* 2013;8(4):e62004. Published 2013 Apr 26. doi:10.1371/journal.pone.0062004

UNICEF. Sharing Simple Facts: Useful Information about Menstrual Health and Hygiene, UNICEF India, New Delhi, India; 2008

UNICEF. Guidance on menstrual health and hygiene, 2019. Available: https://www.unicef.org/wash/files/UNICEF-Guidance-menstrualhealth-hygiene-2019.pdf

UNICEF. UNICEF Brief: Mitigating the impacts of COVID-19 and menstrual health and hygiene; 2020 VanLeeuwen, C. & Torondel, B. (2018) Improving menstrual hygiene management in

emergency contexts: literature review of current perspectives. *International Journal of Women's Health*, 10, 169–186. https://doi.org/10.2147/IJWH.S135587

Yogendrarajah, Rathiranee, (2013), Women Empowerment through Decision Making, *The International Journal of Economics and Business Management*, Volume 3, Issue 1, December 2013 EAST Publications, ISSN 2250 - 2750., Available at SSRN: https://ssrn.com/abstract=2431352

Cite this article:

Tasrin Jahan & Khaleda Hossain Moon (2022). Menstrual Hygiene Management in Adolescent Girls Amid Covid-19 Pandemic: A Cross-Sectional Study in Bangladesh. *International Journal of Science and Business, 16*(1), 98-107. doi: https://doi.org/10.5281/zenodo.7036695

Retrieved from http://ijsab.com/wp-content/uploads/977.pdf

Published by

