

Unmet Menstrual Hygiene Needs among the Impoverished Women, their Perceptions and Health Hazards

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ABSTRACT

Background: Menstrual hygiene refers to the safe and easy access to menstrual products, infrastructure, information, and supplies, necessary for menstruating women to cope with their menstruation with decorum and console, along with systemic factors linking menstruation with health, empowerment and gender equality among other things. The effects of unmet menstrual hygiene needs on women's health have been the subject of very little research. Women around the globe have widespread unmet-menstrual-health requirements, including the inability to access safe, clean facilities and cheap period supplies, which exposes them to socioeconomic depression and serious reproductive tract infections.

Aims: Therefore, to determine the unmet menstrual hygiene needs of impoverished women, this study was conducted in the Southern region of Khyber Pakhtunkhwa, Pakistan, during the year 2021, to identify the women's needs for menstrual hygiene, to rule out the risk of infections due to menstrual unhygienic, perceptions of females for unmet menstrual hygiene beyond affordable ranges and health hazards associated with it.

Methods: The 1538 females took participation in the study, which investigated their unmet menstrual hygiene needs through an approved questionnaire in the area. Additionally, their period poverty, accessibility, and ability to acquire menstrual hygiene items were evaluated.

Results: The average age range of the surveyed women was 28.50 + 3.12 (years) and their age at menarche was 11.8 + 2.4 (years). It was seen that a significantly higher percentage ($P < 0.05$) of women (1506/1638; 97.91%), knew the use of menstrual pads to stop blood staining during menstruation, while, 2.66% of females knew how to use tampons. It was found that a significantly higher ratio ($P < 0.05$) of women was suffering from the period property (59.68%) and most of them were deprived of using hygienic products in their menstrual cycle. Nonetheless, the majority of women used period pads (58.45%), followed by cotton (38.29%) and tampons (7.73%). While 9.03% ($n=139/1538$) of women were driven to use unsanitary diapers, rags, and other materials due to a lack of access to hygienic items, due to financial constraints. Significantly ($P < 0.05$) less percentage of women were aware of the menstrual cycle (18.58%), the dangers of menstrual unhygienic (16.18%), and the risks of genital infections brought on by menstrual unhygiene (9.42%). But a substantially ($P < 0.05$) larger fraction of females (1506/1638; 97.91%) were aware of using menstrual pads. However, just 2.66 percent of females knew how to use tampons, indicating that its use is not well known among women. The female population suffered from food insecurity at a rate of 17.94% and had a depressed socioeconomic position at a rate of 32.44%. Biological samples were obtained from 230 willing participants for the diagnosis of MHM-associated infections. Because urinary tract infections (UTI) and bacterial vaginosis (BV) are the two most prevalent illnesses linked with MHM in women, only 230 individuals consented to the collection of samples, which were then analyzed for these conditions in the laboratory. And 16% of females were revealed to have UTIs. While, 8.9 and 8.7% of females were infected with *Trichomonas vaginalis* and *Gardnerella vaginalis* bacterial vaginosis, respectively. Additionally, 6.1% of females had vaginal candidiasis.

Practical implication: This study will create awareness among the general community that use of unhygienic products during menstruation are hazardous and may result in serious reproductive tract infections.

Conclusion: According to the findings of our study, it was determined that due to their poverty, lower-class women lacked access to menstrual hygiene products, were susceptible to urinary and reproductive tract infections, and had a decreased socioeconomic standing in the community. Therefore, the government and non-government organizations should adopt stringent efforts to ensure gender equality and equity among menstruators and to assist low-income women in obtaining menstrual pads and other hygienic materials to protect their mental and physical health.

Keywords: Bacterial vaginosis; Menstrual hygiene; Menstrual pads; Tampons; UTI.

INTRODUCTION

Menstruation is the source of substantial health and gender inequities, while being a normal, healthy biological function in fertile females. Every month, menstruation causes pain, discomfort, shame, worry, and social isolation for millions of teenagers and young adults around the world. Beginning between the ages of 11 and 14, the average woman will experience her first menstrual period, and she will continue to have periods monthly until she reaches age 50¹.

Menstrual hygiene is defined as "needs of menstruating people comprising safe, easy and equal access to supplies, information and infrastructure necessary to cope the menses in comfort and dignity, and the systemic factors linking menstruation with health and gender equality, empowerment etc²⁻³. It pertains to access to clean sanitary materials that can be changed in private as often as necessary, soap and water for washing, and a location for the hygienic disposal of spent sanitary materials or washing if reusable pads are used. Inadequate menstrual hygiene has been

linked to infections and poor quality of life as it directly relates to health⁴. Lack of access to clean water and sanitation exacerbates menstrual hygiene issues among schoolgirls, refugees, and other displaced people⁵. New studies and website calculators suggest that a menstruator will use over 8,000 disposable goods, including pads and tampons, throughout this period⁶. This toll also varies according to menstruation experiences, including menarche age, monthly frequency, menstrual period length, menstrual bleeding quantity, and other symptoms. Due to their proximity to menarche and the immaturity of their reproductive hormonal axis, adolescents and young adults frequently have heavy, protracted, and unpredictable monthly bleeding, which can result in a larger desire for menstrual products¹.

Menstrual hygiene is the fundamental necessity, although tiny research studied the impact of unmet menstrual hygiene needs on women's health. The unmet menstrual health needs of women and girls around the world are extensive, including the difficulty to access safe, clean facilities and affordable

menstruation products ⁴. The World Bank estimated that 500 million women round globe do not have access to basic menstrual hygiene management facilities. Additionally, they lack access to menstrual supplies. These unmet demands have significant educational repercussions for women and girls ⁷.

It was reported that nearly two-thirds of women (64%) were unable to buy necessary menstrual hygiene materials. Approximately 21% of women experienced menstruation hygiene inaccessibility monthly and many women used cloth, cotton, rags, or toilet paper; some even used paper towels and diapers from public restrooms ⁴. Inadequate menstrual education, lack of access to clean restrooms with running water and waste disposal systems, and a lack of private spaces all contribute to the stigma that surrounds menstruation, a problem that was exacerbated by the Pandemic of Covid-19's restrictions on women's freedom of movement ³.

Menstruation is associated with stigma and taboo, particularly considered dirty, and should be veiled in secrecy and endured in silence. The reluctance of the majority of women to address maladies pertaining to sexual health serves as a key barrier to adequate education regarding menstrual hygiene ⁸. Due to the limited dissemination of information, individuals hold myths and preconceived notions that manifest in their hazardous menstruation practices. This not only has medical consequences, such as an increased risk of urinary tract infections (UTIs) and reproductive tract infections (bacterial vaginosis, vaginal scabies, candidiasis), but also contributed to significant emotional stress ⁹.

As a public health and human rights concern, menstrual hygiene has recently attracted considerable global attention, particularly in low-resource nations ¹⁰. There is a lack of authentic data regarding the prevalence of menstrual hygiene issues among low-income women in developing countries like Pakistan. Therefore, to determine the unmet menstrual hygiene needs of impoverished women, this study was conducted in the Southern region of Khyber Pakhtunkhwa, Pakistan, to identify the women's needs for menstrual hygiene, to rule out the risk of infections due to menstrual unhygiene, perceptions of females for unmet menstrual hygiene beyond affordable ranges and health hazards associated with it.

MATERIALS & METHODS

Study Design: A descriptive cross-section study was done in Jamshoro, during the calendar year 2021 (September 2021 to September 2022). Jamshoro is a large District, located in the Pakistan, with an estimated population of 16,27,132 in the 2017 census, half of which are females (Pakistan Bureau of Statistics, 2017). The study comprised a sample size of 1538 female participants, who were investigated regarding their unmet menstrual hygiene needs through an approved questionnaire in the area. The data were primarily collected from the participants (patients plus accompanying visitors) at Civil Hospital LUMHS, Govt LSB, Asif General Hospital etc (Table 1). The inclusion criteria comprised the females who had attained puberty and experienced menarche up to the menopause stage. The girls below puberty age and women with menopause were excluded from the study. The consent rate of the women to take part in this survey was 100% and all the participating females were provided with a large pack of menstrual pads.

The participants were required to fill out the questionnaire and then the data was organized in tabulated form carrying various categories related to the study (Table 2). The females were questioned on their knowledge and awareness of menstrual hygiene, menstrual hygiene products, the hazards of menstrual unhygiene, and the reproductive tract infections linked with menstrual unhygiene. Additionally, their period poverty, accessibility, and ability to acquire menstrual hygiene items were evaluated. For the laboratory diagnosis of symptomatic and asymptomatic reproductive tract infections, biological samples, including vaginal swabs, were collected from female subjects who volunteered.

Data Handling & Analysis: For the initial evaluation of connections between exposures and each outcome, where the comparison between groups was sought, Pearson χ^2 tests were used. To assess the odds ratios and associated 95% confidence intervals (CIs) for factors related to each outcome, a one-way ANOVA test with HSD Tuckey's test was performed, and ($P > 0.05$) was deemed statistically significant. And correlations between parameters were made by percentages, means, and standard deviations.

Ethical Approval: The Ethical Committee of the Government of Khyber Pakhtunkhwa approved the work. Only participants who provided written informed consent were integrated in the research. The biological specimens collected from the willing women and all the filled questionnaires were marked with a unique identity to protect the privacy of respondents.



(Source: www.ourbodiesourselves.org)

Figure 1: Menstrual hygiene needs of impoverished and low-income ladies

RESULTS & DISCUSSION

Data of female participants through the questionnaire: During the study, 1538 women of different age groups participated through an approved questionnaire. The data was obtained from the participants' vide questionnaire comprising questions pertaining to menstrual hygiene and other relevant. Participants were approached in different gynecology and maternity centers of both public as well as private sectors (Table 1). Seven hundred and ninety-eight participants were reached in Civil Hospital LUMHS Jamshoro (Public Sector), while the rest of the 740 members were approached in private sector hospitals, and thus significant difference ($P < 0.05$) was found among the women visiting the public and private sector hospitals in the vicinity. The age range of the surveyed women was $28.50 + 3.12$ (Mean + SD). All women from 18 years to 50 years of age were included in the study and were required to fill out the questionnaire, the data of which was compiled and statistically analyzed. Varied age of menarche was reported by the women, with a mean of $11.8 + 2.4$ (Mean + SD). Similar reports were seen in a study whereby on average, a girl's first menstrual cycle begins between the ages of 11 and 14 and lasts for five years. This means that the average menstruating woman experiences around 40 years of menstruation ¹.

A significant difference ($P < 0.05$) was present between educated (90.63%) and uneducated women (9.36%). Most of the participants were married ($P < 0.05$) with a percentage of 76.46%, followed by unmarried (22.56%) and divorced (0.97%). A significant difference ($P < 0.05$) lay between the employed and unemployed women participants, whereby most of the females were housewives or unemployed (77.50%). Significant ($P < 0.05$) health difference was shown by them because most of the women were emaciated (59.03%) and 18 (1.17%) of the participants had certain disabilities as well. A positive correlation was established between the educational level of females and their menstrual hygiene practices ¹¹.

Women were asked about their financial situation and their capacity to meet their fundamental requirements, food insecurity and poor period hygiene were evident in lower income class. Women made up over half of the population (742/1538) and suffered food insecurity at some point. Nearly half of the population (48.24%) of women also lacked the funds to buy necessary period hygiene items. Our results were in agreement with a study reporting that many of these ladies manage their menstrual flow with discarded clothing, toilet paper, and diapers. The majority of women in society may relate to having to improvise for a few hours if their menstruation begins unexpectedly; nevertheless, many of

the women we examined must improvise all day, throughout their entire cycle, and frequently each month⁴. Similar findings were provided in a study conducted in St. Louis, Missouri, USA, where over two-fold (64%) of women were unable to afford the necessary menstrual hygiene supplies, during their reproductive cycles^{1,4}. A Canadian poll indicated that one-third of menstruators struggled to manage their finances to afford menstrual supplies⁹. Notably, by recording the association between economic status and the ability to acquire menstrual hygiene supplies, the researchers discovered that over two-thirds of low-income women could not afford these essential hygiene items¹².

Table 1: Details of participants who took part in the study

S. No	Data Collection Points	Sector of Hospital	No. of participants (n)	Percentage of participants	P-value
1	Civil Hospital LUMHS Jamshoro	Public	798	51.88%	F= 25.422 P = 0.00001* P is significant (between the groups) at p < .05
2	LSB Jamshoro	Private	244	15.86%	
3	Asif General Hospital	Private	201	13.06%	
4	Bakhtawar General Hospital	Private	198	12.87%	
5	Shahbaz Maternal and Child care centre	Private	97	6.30%	
Total			1538	100%	

Table 2: The socio-economic categorical parameters of the participants vs sample size

S. No	Parameter	Categories (n)	Statistics
1	Age (years)	18-28 (201) 29-39 (793) 40-50 (544)	Mean + SD (28.50 + 3.12)
2	Education	Educated (1394) Uneducated (144)	Chi-Square value = 729.18
3	Marital Status	Unmarried (347) Married (1176)	Divorced (15)
4	Employment	Employed General public (231) Employed Health Dept. (115)	Unemployed (1192)
5	Health Status	Disable (18) Weak or malnourished (908)	Healthy (612)
6	Income Class of the participants	Lower class (742) Middle class (694)	Upper Class (102)

Unmet menstrual hygiene needs of impoverished women: Menstrual hygiene means knowledge of the menstrual cycle and the ability to manage it with comfort and dignity. Access to sanitary goods, sufficient sanitation, and knowledge distribution in the face of stigma is a difficulty for a developing country like Pakistan. In our study, only 12.80% (197/1538) of females were found to be aware of menarche, and a sizable portion of females was unaware of both menarche and adolescent menstruation. Similarly, a significantly ($P < 0.05$) less percentage of women were aware of the menstrual cycle (18.58%), the dangers of menstrual unhygienic (16.18%), and the risks of genital infections brought on by menstrual unhygiene (9.42%). However, a statistically substantial proportion of women (1506/1638; 97.91%) recognized that menstrual pads might be used to prevent blood discoloration during menstruation. However, just 2.66 percent of women admitted to being familiar with the use of tampons (Table 3). It was also stated in a study that the majority of women in the general population reported being terrified when they first experienced menstruation and were unaware of menarche⁹.

As the purpose of the study was to establish the frequency of unmet menstrual hygiene demands among impoverished

women, extra emphasis was placed on this aspect of the research, and data was gathered regarding the poverty status of women concerning menstrual unhygiene. It was found that a significantly higher ratio ($P < 0.05$) of women was suffering from the period property (59.68%) and most of them were deprived of using hygienic products in their menstrual cycle. Nonetheless, the majority of women used period pads (58.45%), followed by cotton (38.29%) and tampons (7.73%). While 9.03% ($n = 139/1538$) of women were driven to use unsanitary diapers, rags, and other materials due to a lack of access to hygienic items, due to financial constraints (Figure 2). The same findings were reported that girls with little resources throughout the world who lack the means to meet their Personal hygiene needs use discarded garments, tissue paper, and cotton to manage menstrual bleeding for mechanical efficiency⁴. Although studies indicate that reusable tampons and menstrual cups are acceptable and in some cases preferred to alternative methods, they are not universally accepted¹³. In India, researchers examined the relationship between the use of unclean materials and urogenital infections in women and girls. They discovered that the usage of reusable absorbent pads was related to greater symptoms of urogenital infection¹⁴.

Table 3: Awareness of the participants relating to the menstruation

S. No	Categorical Factors	Participants Aware of (n)	Participants Unaware of (n)	Statistical Analysis
1	Knowledge of menarche	197	1341	χ^2 P-value 602.863 0.00001*
2	Knowledge about the menstrual cycle	241	1297	508.641 0.00001*
3	Awareness of risks of menstrual unhygiene	249	1289	492504 0.00001*
4	Awareness about reproductive tract infections	145	1393	726.661 0.00001*
5	Knowledge of menstrual pads	1506	32	1046.67 0.00001*
6	Knowledge of Tampons	41	1497	1018.43 0.00001*

The female population suffered from food insecurity at a rate of 17.94% and had a depressed socioeconomic position at a rate

of 32.44%. (Table 4). A study corroborated our observations by showing that women were more likely to utilize absorbent pads and

cloth ⁹. In accordance of our findings, one study found that, compared to medical experts, significantly (P<0.05) more women in the general community reported experiencing an unpleasant odor during menstruation, reproductive tract infections, and pubic rashes. Infrequently replacing the cloth or pad while using only 2-3

pads for at least three days resulted in a foul odor ¹⁵. A research in India, where women are purportedly barred from religious activities and in rural places are forbidden from entering the kitchen, lends credence to our results that menstruation women have a worse socioeconomic level ¹⁶.

Table 4: Unmet menstrual hygiene needs of impoverished women due to poverty

S. No	Characteristics of Parameters	With the number of Participants (n)	Percentage of Population (%)
1	Period Poverty (regular basis)	742	48.24
2	Period Poverty (annual basis)	918	59.68
3	Period Poverty (a few times in life)	892	57.99
4	Used Menstrual Pads	899	58.45
5	Used Tampons	119	7.73
6	Used Cotton	589	38.29
7	Used diapers, rags and other material	139	9.03
8	Frequency of pad change (daily)	3-4	3.6+ 1.01 (Mean+SD)
9	Frequency of pad change on the heaviest (day)	8-10	8.4+ 2.12 (Mean+SD)
9	Inaccessibility to purchase pads or tampons	318	20.67
10	Unaffordable to purchase pads or tampons	766	49.80
11	Food insecurity	276	17.94
12	Suppressed socioeconomic status	499	32.44

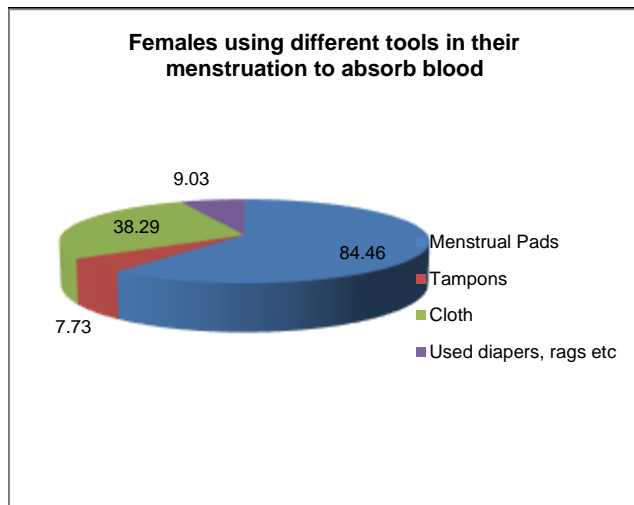


Figure 2: Females using different tools in their menstruation to absorb blood

Risks and health hazards of infections due to menstrual unhygiene: The majority of participants in the study were uninformed of menstrual hygiene management (MHM) and the related risk factors and infections caused by MHM neglect. During the study phase, the uninformed female population was counseled about MHM-associated infections and biological samples were obtained from willing participants for the diagnosis of MHM-associated infections. Because urinary tract infections (UTI) and bacterial vaginosis (BV) are the two most prevalent illnesses linked with MHM in women, only 230 individuals consented to the collection of samples, which were then analyzed for these conditions in the laboratory (Figure 3). And it was discovered that 16% of females had UTIs. While, 8.9 and 8.7% of females were infected with *Trichomonas vaginalis* and *Gardnerella vaginalis* bacterial vaginosis, respectively. Additionally, 6.1% of females had vaginal candidiasis. According to the findings of a study that was carried out in Delhi, India, it was found that women who reuse the same fabric have a greater chance of becoming infected with bacterial vaginosis ¹⁷. Some findings revealed that exposure to genitourinary infections was associated with the use of unclean materials ¹⁸. It was evaluated that the influence of pad type on BV was eliminated after controlling for other variables in an analysis of the correlation between MHM practices and particular disease outcomes ⁸. After correcting for other covariates, the effect of pad type on UTI declined (p< 0.05) but remained significant, as did the protective effect of greater education on UTI. With education, individuals are better equipped to prevent disease and successfully

utilize health services ⁸. Another study reported that 558 women were selected for the investigation of menstrual unhygiene infections; out of which 62.4% were diagnosed with at least one of the three infections investigated, and 52.0% presented with at least one RTI symptom. The most prevalent infection was BV (41%) followed by *Candida* (34%) and TV (5.6%) ¹⁸. 51.75% of women in another study had infectious vaginal discharge, including BV 26.25 %, *Candidiasis* 15.25 %, *Trichomoniasis* 12.3 %, and mixed infections 5.75 % ¹⁹. Unhygienic MHM procedures caused excessively moist conditions in the vulvovaginal area, which increased opportunistic infections such as *Candida*, according to a previous study. In the absence of sufficient cleaning and drying, it was challenging to remove *Candida* from infected clothing. While BV and *Candida* infections were related to various unsanitary MHM practices in this investigation, TV infections were not ²⁰. All these findings and evaluations were in accordance with our results, where menstrual unhygiene was associated with reproductive tract infections.

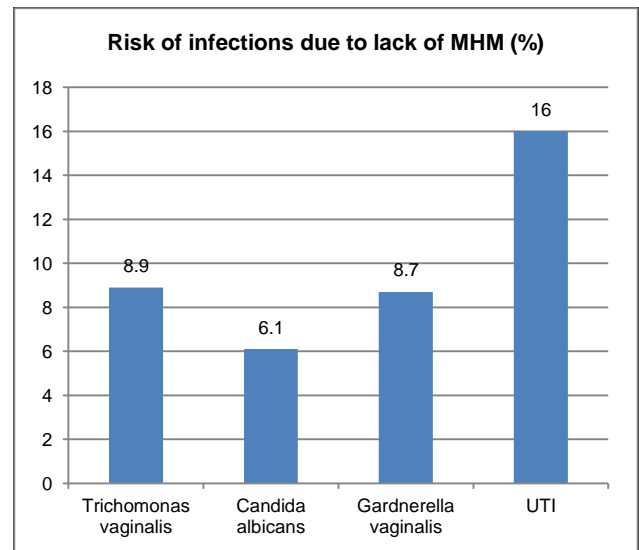


Figure 3: Risk of infections due to lack of menstrual hygiene management (%)

CONCLUSION

According to the findings of our study, it was determined that due to their poverty, lower-class women lacked access to menstrual hygiene products, were susceptible to urinary and reproductive tract infections, and had a decreased socioeconomic standing in

the community. Therefore, the government and non-government organizations should adopt stringent efforts to ensure gender equality and equity among menstruators and to assist low-income women in obtaining menstrual pads and other hygienic materials to protect their mental and physical health.

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