

MENSTRUAL HYGIENE
MANAGEMENT – EVIDENCE
FROM THE 6TH ROUND OF
MICS

MICS METHODOLOGICAL PAPERS

Paper No. 11, 2021



Data and Analytics Section
Division of Data, Analytics, Planning
and Monitoring

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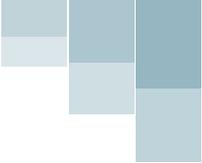
Menstrual Hygiene Management – Evidence from the 6th Round of MICS

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About MICS

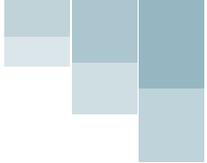
The Multiple Indicator Cluster Surveys, MICS, is one of the largest global sources of statistically sound and internationally comparable data on children and women. MICS data are gathered during face-to-face interviews in representative samples of households. The surveys are typically carried out by government organizations, with technical support from UNICEF.

Since the mid-1990s, MICS has supported more than 118 countries to produce data on a range of indicators in areas such as health, education, child protection and HIV/AIDS. MICS data can be disaggregated by numerous geographic, social and demographic characteristics.

As of 2021, five rounds of surveys have been conducted: MICS1 (1995-1999), MICS2 (1999-2004), MICS3 (2004–2009), MICS4 (2009–2012) and MICS5 (2012-2015). The sixth round of MICS (MICS6) is currently taking place in 2016–2021. Survey results, tools, reports, micro-data and information on the MICS programme are available at <mics.unicef.org>.

About the MICS Methodological Papers

MICS Methodological Papers are intended to facilitate exchange of knowledge and to stimulate discussion on the methodological issues related to the collection, analysis, and dissemination of MICS data; in particular, the papers document the background methodological work undertaken for the development of new MICS indicators, modules, and analyses. The findings, interpretation and conclusions do not necessarily reflect the policies or views of UNICEF.



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Preface

This report analyses new data on Menstrual Hygiene Management (MHM) collected by UNICEF's Multiple Indicator Cluster Surveys (MICS) programme.

The recognition that the ability of women and adolescent girls to manage their menstrual cycle safely and in privacy is fundamental to their health and well-being led to the introduction of a new set of questions on MHM in the standard MICS6 questionnaires in 2017. MICS became one of the first global household survey programmes to collect comparable information on the use of menstrual hygiene materials, access to a private place to wash and change, and exclusion from school, work or social activities during menstruation. To date, close to 50 surveys across the world have collected comparable data on MHM as part of MICS6.

While there is no dedicated SDG indicator on menstrual hygiene and health, MHM is closely related to several SDGs including Goal 5 on the achievement of gender equality and the empowerment of women and girls, SDG Target 6.2 which calls for access to adequate and equitable sanitation and hygiene, with special attention to the needs of women and girls, and SDG Target 4.a which calls for educational facilities that are gender-sensitive¹.

This report contributes to a growing number of analyses of MHM data from MICS6 and intends to assist UNICEF and the MICS programme in better understanding how to use this emerging evidence to monitor the situation of MHM.

¹ <https://undesa.maps.arcgis.com/apps/MapJournal/index.html?appid=d89286ad65354bbb8512329412dad320#>

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Executive Summary

This study was conducted by four postgraduate students from the International Development Department of the LSE. Technical support and expertise were provided by the UNICEF MICS and WASH teams.

Globally, over 1.8 billion people experience the monthly biological process of menstruation [1]. While the importance of MHM has been acknowledged by the international community, there is still a lack of comparable quantitative research in this field [2]. UNICEF is playing a key role in raising awareness about MHM globally and one significant contribution was the inclusion of questions on menstruation in the 6th round of the Multiple Indicator Cluster Surveys (MICS). MICS are household surveys that collect nationally representative data from children and women worldwide. The use of standardized questionnaires allows for cross-country comparisons.

The purpose of this project was to conduct a cross-country study of the available data from the 6th round (2017-2020) of the MICS to identify groups most likely to practice inadequate MHM and experience social exclusion due to menstruation in LMICs. The data from women and adolescent girls aged 15-49 who reported having menstruated during the past 12 months were analyzed. The analysis was restricted to surveys which had published their data at the time of commencement of this project (October 2020); a total of 29 surveys in 25 countries fulfilled the criteria.

Research question: How do socioeconomic factors influence menstrual hygiene management and social exclusion due to menstruation in LMICs?

For the analysis, existing syntax and tabulation plans were used as templates. Based on literature findings and discussions with UNICEF, syntax changes were made, and additional variables were included in our tables. The following five tables were created for all 29 surveys using SPSS:

- Table 1: Use of basic and limited sanitation services
- Table 2: Management of excreta from household sanitation facilities
- Table 3: Drinking water, sanitation and handwashing ladders
- Table 4: Menstrual hygiene management
- Table 5: Exclusion from activities due to menstruation

A descriptive analysis of the tables was conducted to assess the effect of WASH facilities and selected socioeconomic factors on the use of appropriate materials, access to private place to wash and change at home, and exclusion from social activities, school or work due to menstruation. Based on our findings, recommendations have been developed for future MICS rounds to further understand unmet menstrual

needs of women and adolescent girls.

Our findings from tables 1, 2 and 3 showed that a higher percentage of women and adolescent girls practicing adequate MHM live in a household with improved sanitation facilities and with safe excreta disposal on site compared to those who practice inadequate MHM. The same pattern was observed regarding access to basic drinking water, sanitation and handwashing facilities. Moreover, the type of sanitation facilities and excreta disposal systems was found to have no clear effect on the percentage of women and adolescent girls experiencing exclusion from social activities due to menstruation. Women and adolescent girls who were not excluded were more likely to live in a household with basic drinking water, sanitation and handwashing facilities compared to those being excluded.

The analysis of table 4 indicated that women and adolescent girls who have functional difficulties, low life satisfaction, low reproductive autonomy (not currently using contraception to avoid pregnancy and did not want to get pregnant during the last pregnancy), who are currently married and are aged 40-49 are more prone to practice inadequate MHM. Additionally, our report found large variations in the percentage of women and adolescent girls practicing adequate MHM across different regions and ethnicities of the household heads. However, education, the number of women in a household, the age and education level of the household head, the level of rural/urban wealth were not found to have a clear effect on the percentage of women and adolescent girls practicing adequate MHM.

From table 5, we observed that women and adolescent girls who have functional difficulties, are currently not in a union, are currently using contraception to avoid pregnancy, have low life satisfaction, and younger women and adolescent girls were found to be at higher risk of being excluded from social activities due to menstruation. Additionally, women and adolescent girls living in a household with a larger number of women and a female household head were more likely to be excluded from activities due to menstruation. Large variations were also found among ethnic groups of household heads and regions. Rural/urban wealth, age and education of household heads were found to have no clear effect on the percentage of women and adolescent girls being excluded due to menstruation.

Our findings suggest that achieving adequate MHM for women and adolescent girls remains a significant challenge across the 29 survey datasets analyzed. It is important to examine the nuances of the socioeconomic factors affecting menstruators and take their unique cultural contexts into account. In order to gain a deeper understanding of the current barriers faced by menstruators, we have developed the following key recommendations for future MICS rounds as well as other global household surveys based on our findings:

- Collecting MHM data from young adolescent girls aged 10-14 as MICS currently only survey women and adolescent girls aged 15-49.
- Ensuring that all country surveys incorporate questions inquiring about reasons for exclusion from activities.
- Ensuring that all country surveys incorporate questions specifying the type of menstrual materials used.

- Including questions that provide insights about the level of knowledge women and adolescent girls have regarding menstruation and appropriate menstrual hygiene practices, the source of knowledge (e.g. female figure at home, teachers at school), and their existing beliefs and opinions.
- Developing questions that collect data on sanitation facilities in public places, schools and workplaces to provide valuable insights into various factors restricting mobility and social interaction during menstruation.

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Introduction

Menstruation is a monthly biological process that is experienced by over 1.8 billion girls, women, transgender men and non-binary persons* worldwide [1]. Menarche is an important milestone for girls and marks the capability to reproduce [3]. Full of changes and new opportunities, this time could elicit a feeling of self-empowerment [1]. However, the reality, especially in low- and middle-income countries (LMICs) often looks different where girls face discriminatory gender norms, social exclusion and often feel ashamed of menstruation [1], [4].

Adequate menstrual hygiene practices including the use of appropriate menstrual materials such as sanitary pads, tampons or cloths and having a private place to wash and change are fundamental for women's physical and mental health, well-being and independence [1]. Inadequate menstrual practices can result in poor health in the form of infections, such as respiratory tract infections, as well as shameful feelings and social exclusion [3], [5]. These factors can have long-term implications on the economic and educational status of women and hinder them from living their life with dignity and achieving their full potential [6]. The international community has recognized the importance of adequate menstrual hygiene management (MHM); SDG 6.2 specifically refers to the right to menstrual health with the aim of "by 2030, achiev[ing] access to adequate and equitable sanitation and hygiene for all and end[ing] open defecation, paying special attention to the needs of women and girls and those in vulnerable situations" [1, p.15]. Despite the international commitment to achieving adequate MHM, millions of girls and women are still denied their menstrual rights worldwide [1]. In many regions and countries, particularly in resource-poor settings, menstruation is not seen as a purely biological process [3]. It reflects a sociocultural environment of stigma, discriminatory norms, taboos and constraints for women [3]. These environments put further constraints on research in this field and, as a result, the unmet menstrual needs of adolescent girls and women are insufficiently researched and understood [4].

UNICEF is playing a pivotal role in improving menstrual hygiene practices, raising awareness about menstruation and building knowledge amongst women and adolescent girls worldwide [1]. One crucial contribution is the inclusion of MHM related questions into the 6th round of the Multiple Indicators Cluster Surveys (MICS). Since its inception in 1995, more than 300 surveys have been carried out in 118 countries, making MICS the "largest source of statistically sound and internationally comparable data on women and children worldwide" [7, para. 1]. The inclusion of questions about menstruation in this household survey underlines the importance of MHM and further allows for cross-cultural research and cross-country comparisons.

*As per UNICEF guidance, this report uses the term 'women and adolescent girls' as a stand for all menstruators regardless of their gender identity. This shorthand is solely used to increase readability of the report.

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Literature Review

The International Conference on Population Development in Cairo, Egypt, in 1994, drew international attention towards health issues surrounding sexual and reproductive health. As the capability of females to reproduce begins with menarche, the ability of women to safely manage their menstruation is key to achieving sexual and reproductive health [3].

The term MHM has its origins from the Water, Sanitation and Hygiene (WASH) sector and was defined by the WHO/UNICEF Joint Monitoring Programme for Drinking Water, Sanitation, and Hygiene (JMP) as follows:

“Women and adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials.” [1, p.13].

With the expanding public discourse surrounding MHM, research in this field has seen an enormous increase during the past two decades, which helps to get a better understanding of the unmet needs of girls and women in LMICs during their menstruation.

Water, Sanitation and Hygiene

Having access to safe water and a private place to wash and defecate are the basic requirements for hygiene [8]. As aforementioned, the term MHM stems from the WASH sector, illustrating the importance of access to adequate water and sanitation facilities for menstruators [1]. However, interventions often focus on programs that aim to increase knowledge or materials use while the WASH needs are often overlooked and neglected [2], [8].

The ability of women and girls to safely manage their menstruation is dependent on contextual factors, such as the access to water and sanitation facilities, having a private place to wash and change and facilities to dispose of them [8], [9]. Poor MHM, the lack of adequate washing facilities in particular, can negatively impact the health and well-being of women and girls [10]. A recent study conducted by Das et al. in Odisha, India, found that lack of access to private wash and sanitation facilities increased the risk of urogenital disease [9]. Hennegan and Montgomery further emphasized the importance of access to adequate WASH facilities in reducing discomfort and embarrassment for women and girls [11].

Moreover, research found that unhygienic menstrual practices are particularly common amongst women and girls from rural areas and lower socioeconomic groups [2]. In many resource-poor settings, sanitary facilities often do not meet the criteria for females to wash and change in private [2]. Latrines often lack doors, causing embarrassment and threatening women's safety; and shared or public sanitary facilities can pose health threats due to poor hygiene [10]. Furthermore, communal facilities are often not designed for the disposal of menstrual materials, resulting in improper waste disposal or even absenteeism from school or work [10], [11].

Socioeconomic Factors and MHM

Health inequities are increasingly studied in the wider socioeconomic context with the understanding that they are a result of the circumstances in which a person is born and continues to live and work [12]. The differences in access to MHM vary not only between countries but also widely within countries. Research in resource-poor settings showed that certain social determinants such as rural or urban residence, wealth status and education are directly linked to the use of appropriate materials and having access to a private place to wash [13], [14].

El-Gilany and colleagues conducted a study in Egypt and found that the use of sanitary pads as opposed to cloths was significantly higher amongst schoolgirls from urban areas and higher social classes and amongst girls whose parents were educated and worked as professionals. Moreover, the participating schoolgirls reported that the main disadvantages of sanitary pads are the high price and a lack of availability [13]. A study conducted amongst schoolgirls in West Bengal showed similar findings [14]. Significant predictors of good MHM were the mother's education level, the girl's education level and the presence of sanitary latrines at home [14]. It was further found that mothers and elder sisters were the main source of menstrual information for adolescent girls [15]. Moreover, research in India showed that access to menstrual products was linked to the marital status of women and that married women reported lower levels of sanitary pad use compared to unmarried women [16].

In many countries and cultures, menstruation is not seen as a biological and natural process but rather associated with cultural and social constraints for women [3]. Women and girls are often excluded from community-level discussions and decision-making processes [8]. A lack of scientific knowledge and education in developing countries can result in the development of cultural myths and negative attitudes interpreting periods as a sign of impurity and bad luck [17], [18]. These cultural and social stigmata in turn can result in worrisome practices and can cause serious health issues. In studies conducted in Egypt and Ethiopia, most women reported that bathing during their menstruation is believed to be unhealthy and can prolong the bleeding and can cause maceration of the skin [19], [20]. Furthermore, especially in rural areas, prevailing myths associate the disposal of sanitary pads with soil getting infertile [3]. For this reason, girls in predominantly rural areas often fear using sanitary pads or have difficulties in accessing them [3].

Social and cultural norms not only impact physical well-being but also affect mental health. Feelings of shame, fear of stigma and anxiety have been reported by women and girls in LMICs [21]. As a result, menstruation is often practiced in silence and the needs of females are neglected [22]. Young girls in LMICs do not have the necessary knowledge about menstruation and are simply “under-prepared for puberty and menstruation” [4, p.301]. Already vulnerable population groups are even more isolated and as a result, women with functional difficulties often experience shame, social isolation or even have to undergo sterilization [23].

Exclusion from Activities

The use of appropriate materials and adequate hygiene management during menstruation can prevent bad odor, soiled clothes and reduce discomfort and stigma, which often hinder girls and women from attending social activities, school or work [11].

Montgomery et al. found that introducing disposable sanitary pads in Ghana increased school attendance by 9 percent in 5 months. Over 75 percent of the participating schoolgirls reported soiling outer garments before using the disposable sanitary pads, which was one of the main reasons for school absenteeism amongst female adolescents [24]. Moreover, schoolgirls in Egypt, India and Zambia reported that one of the main reasons for school absenteeism during their menstruation was a lack of privacy, adequate sanitation and disposal facilities at schools [13], [14], [25]. Most schools in developing countries lack adequate sanitary facilities, which affects girls’ well-being and participation in education [13], [14], [25]. Tegegne and Sisay found that more than 50 percent of the females reported being absent from school during their last menstruation and that school drop-out rates increased with the attainment of menarche [26]. A report from the HERproject™, a collaborative initiative aiming to improve the health of female factory workers, showed that menstruation caused absenteeism from work, early leaves and production errors [27]. The program increased awareness about menstrual hygiene and practices amongst women and resulted in a reduction of absenteeism from work from 19 percent to 10.7 percent [27].

Other factors that cause exclusion due to menstruation are cultural and social norms. In many conservative and rural communities, for example, females are restricted in their mobility outside home and are often excluded from social activities or have to withdraw from school due to their menstruation [28], [29]. Moreover, in many developing countries, cultural norms suggest that with the onset of menarche a girl is ready for marriage and thus, is expected to drop out of school [22]. This can have further long-term consequences and directly impact the economic and social progress of women. Educated women are more likely to have fewer children, participate in economic activities and make more informed choices about their family’s health [25]. Improving the knowledge and understanding of menstruation can help to create an environment where girls and women are able to talk about their menstruation and safely practice their monthly period [11].

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Research Purpose and Questions

The purpose of this project was to conduct a cross-country analysis of the MICS6 data on MHM. This research aimed to identify socioeconomic factors that affect MHM (the use of appropriate menstrual products and access to a private place to wash and change at home) and social exclusion due to menstruation. Based on these findings and existing literature, we further aimed to develop recommendations for MHM questionnaires of future MICS rounds. For this analysis, adequate MHM was defined as: the use of appropriate materials and access to a private place to wash and change during the last menstruation.

Based on the aforementioned literature findings, the following research questions have been developed.

Research Questions

Main Research Question:

- How do socioeconomic factors influence menstrual hygiene management and social exclusion due to menstruation in LMICs?

Sub-Research Questions:

- What factors are most closely associated with the practice of adequate menstrual hygiene management and social exclusion from activities due to menstruation?
- Which population groups are more likely to practice adequate menstrual hygiene management and are less likely to be excluded from activities due to menstruation?
- What recommendations can be made for future MICS rounds with regards to menstrual hygiene management?

Hypotheses

WASH:

- H1: Women and adolescent girls who are practicing adequate MHM and who are not excluded from social activities due to menstruation are more likely to live in a household with an improved and private sanitation facility, safe management of excreta and basic water, sanitation, and handwashing facilities.

Individual Characteristics:

- H2: Women and adolescent girls with high education levels, high life satisfaction, with

reproductive autonomy (wanted to get pregnant during last pregnancy and currently using contraception), with no functional difficulties, who are not in a union, and older women are more likely to practice adequate MHM and are less likely to be excluded from social activities due to menstruation.

Household Characteristics:

H3: Women and adolescent girls living in a female headed household, with a higher educated and an older household head and in a household with higher wealth status are more likely to practice adequate MHM and are less likely to be excluded from social activities due to menstruation.

H4: The region and the ethnicity of the household head have an effect on the likelihood of women and adolescent girls practicing adequate MHM and being excluded from social activities due to menstruation.

We expect to see an effect of socioeconomic factors on MHM and exclusion from social activities due to menstruation. The results will contribute to an existing body of research on MHM and give a better understanding about the unmet menstrual needs of women and adolescent girls in LMICs.

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Methodology

Data

For the analysis of this report, data from the 6th round of the MICS were used. MICS are national representative surveys that collect data on the situation of children and women worldwide. The surveys cover a wide range of key indicators, ranging from HIV/AIDS, child mortality and water and sanitation. The use of standardized questionnaires allows for cross-country analysis and comparisons. The questionnaires for the 6th round of MICS are: household questionnaire, questionnaire for individual women aged 15-49, questionnaire for individual men aged 15-49, questionnaire for children under the age of 5 years and questionnaire for children aged 5-17 years; the MHM questions relevant to this study are included in the women's questionnaire (see Appendix A). Data for the MICS6 were collected by trained fieldworkers who conducted face-to-face interviews with household members. The datasets are publicly available and can be downloaded from the MICS website (<http://mics.unicef.org/visitors/sign-up>) after obtaining permission from UNICEF.

Sampling

For this report, the 6th round, the most recent and publicly available datasets, of the MICS were used. The MICS6 were conducted during the period of 2017-2020 and it is the first ever round to include questions on MHM. The sample is restricted to surveys that included the MHM questions and published their datasets by October 2020 when we started working on this project (more surveys have been made available since then). In total, 29 surveys and 25 countries, covering the regions of West and Central Africa, South Asia, East Asia and the Pacific, Eastern and Southern Africa, Middle East and North Africa, Europe and Central Asia and Latin America and the Caribbean, fulfilled these criteria (see Appendix B for a full list of countries). Moreover, only women and adolescent girls aged 15-49 who reported having menstruated during the past 12 months were included in our analysis.

Variables

Five existing tables and respective syntax from the MICS6 were used as templates for this study, (syntax and tabulation templates can be found at <http://mics.unicef.org/tools?round=mics6#analysis>): the table templates are as follows:

- WS.3.2: Use of basic and limited sanitation services
- WS.3.4: Management of excreta from household sanitation facilities

- WS.3.6: Drinking water, sanitation and handwashing ladders
- WS.4.1: Menstrual hygiene management
- WS.4.2: Exclusion from activities during menstruation

For the new tables, the titles of the templates were used but the tables were renumbered to Table 1 to Table 5 to avoid confusion. The dependent variables of the tables remained the same and we either changed the independent variables or added additional ones to the tables. For example, the dependent WASH variables of Tables 1, 2 and 3 remained, while the independent variables were replaced by the MHM-related variables (use of appropriate materials, private place to wash and change and exclusion from activities due to menstruation). For Table 4 and 5, selected socioeconomic variables were added as independent variables. Based on conversations with the MICS and WASH teams, literature findings and the availability of MICS indicators the following additional independent variables were added to Table 4 and 5: wealth index quintile for rural and urban areas, age, sex, ethnicity and education of the household head, number of women 15-49 years in a household, reproductive autonomy (currently using a method to avoid pregnancy and wanted to get pregnant at the time of last pregnancy), life satisfaction and marital status. In order to facilitate the cross-country analysis and standardization, we have merged sub-categories of certain variables (see Appendix C for more details about the variables).

Analysis

This study adopts a quantitative research method to measure the effect of WASH facilities and selected socioeconomic factors on three MHM-related indicators across 29 surveys. The datasets for the 29 surveys were downloaded from the MICS website and analyzed with the statistical software SPSS. Furthermore, the existing syntax was downloaded from the MICS website and edited to reflect our changes. Before producing five tables for each of the 29 surveys, the household datasets were merged into the individual women datasets.

Based on the UNICEF criteria, variables with missing information or with low cases (<50) were suppressed from the data analysis due to a lack of representativeness. A descriptive analysis was conducted to assess the effect of the selected socioeconomic indicators on MHM and social exclusion due to menstruation. The choice for this type of analysis was based on conversations with UNICEF and existing UNICEF MICS publications. The analysis included the identification of trends and the number of surveys in which trends were observed. Additionally, averages were calculated using Excel to make comparisons between the level of impact on the selected MHM indicators.

Ethical Approval

For this research, secondary data gathered from MICS6 datasets for household and individual women, were used. The data involve human participation; however, the information was concealed by the MICS team and a living individual cannot be identified. This study therefore fulfilled ethical requirements and was approved by the Department of International Development of the London School of Economics and Political Science.

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Results

The five tables created for Bangladesh have been included as an example in Appendix D for ease and to facilitate readability. The Bangladesh tables have been used as the example because their surveys measured all indicators that we have included in our report and hence, serve as a suitable representation.

WASH Facilities and MHM

[Certain surveys were suppressed from the analysis due to low cases (<50) in one or more categories or if the variable was not measured]

Table 1: Use of Basic and Limited Sanitation Services and Menstrual Hygiene Management

Our analysis found that on average, among women and adolescent girls using appropriate materials and having a private place to wash, 75.6 percent reported living in a household using improved sanitation facilities.

Improved Not-shared Facilities

In 6 out of 13 surveys (16 surveys suppressed), the percentage of women and adolescent girls living in a household with improved and not-shared facilities is higher amongst those practicing adequate MHM compared to women and adolescent girls who do not use appropriate materials and who do not have a private place to wash and change. On average, 53.6 percent of women and adolescent girls using appropriate materials and having a private place to wash and change, reported living in a household using improved not-shared sanitation facilities compared to 49.4 percent for those not practicing adequate MHM.

Improved Shared Facilities

In all 13 surveys (16 surveys suppressed), the percentage of women and adolescent girls living in a household with improved and shared sanitation facilities is higher amongst those practicing adequate MHM compared to those who are not practicing adequate MHM. On average, 11.4 percent of women and adolescent girls using appropriate materials and having a private place to wash and change, reported living in a household using improved shared sanitation facilities compared to 6.8 percent for those not practicing adequate MHM.

Unimproved Not-shared Facilities

In 9 out of 13 surveys (16 surveys suppressed), the percentage of women and adolescent girls living in a household with unimproved and not-shared sanitation facilities is higher amongst those who do not practice adequate MHM. On average, 8.5 percent of women and adolescent girls using appropriate materials and having a private place to wash and change, reported living in a household using unimproved not-shared sanitation facilities compared to 10.8 percent for those not practicing adequate MHM.

Unimproved Shared Facilities

In 9 out of 13 surveys (16 surveys suppressed), the percentage of women and adolescent girls living in a household with unimproved and shared sanitation facilities is below 5 percent among those with adequate MHM and those without adequate MHM. On average, 6 percent of women and adolescent girls using appropriate materials and having a private place to wash and change, reported living in a household using unimproved shared sanitation facilities compared to 3.8 percent for those not practicing adequate MHM.

Table 2: Management of Excreta and Menstrual Hygiene Management

Improved Sanitation Facilities with Safe Disposal of Excreta

In 8 out of 11 surveys (18 surveys suppressed), the percentage of women and adolescent girls living in a household with improved sanitation facilities with safe disposal of excreta was higher amongst those practicing adequate MHM compared to those who do not use appropriate materials and who do not have a private place to wash and change. On average, 45.5 percent of women and adolescent girls practicing adequate MHM reported living in a household with improved sanitation facilities and safe disposal of excreta, compared to 37.3 percent among those who do not practice adequate MHM.

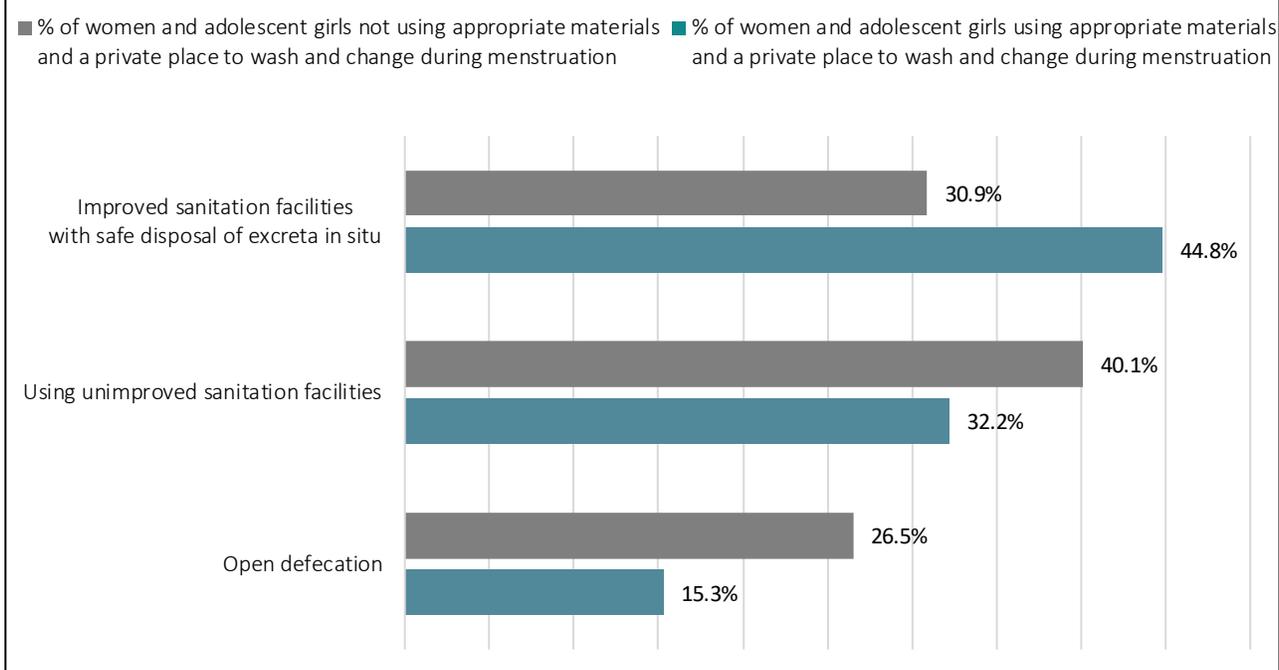
Sewer Connection

In 6 out of 11 surveys (18 surveys suppressed), the percentage of women and adolescent girls living in a household with a sewer connection was higher amongst those practicing adequate MHM compared to those who do not use appropriate materials and who do not have a private place to wash and change. On average, 17.3 percent of women and adolescent girls practicing adequate MHM reported living in a household with a sewer connection, compared to 13.2 percent among those that do not practice adequate MHM.

Open Defecation

In general, the percentages of women and adolescent girls aged 15-49 practicing open defecation varied greatly, ranging from 40.4 percent in Togo to 0 percent in Tonga; on average, 9.4 percent of women and adolescent girls aged 15-49 reported practicing open defecation. In 7 out of 11 surveys (18 surveys suppressed), the percentage of women and adolescent girls living in a household practicing open defecation was higher amongst those not practicing adequate MHM. On average, 19.3 percent of women and adolescent girls not practicing adequate MHM reported living in a household practicing open defecation compared to 11.7 percent among women that practicing adequate MHM.

Graph 1: Sanitation and MHM in Sierra Leone (2017)^{1,2}



¹The percentage of women and adolescent girls living in a household with improved sanitation facilities and safe disposal of excreta in situ was higher amongst those practicing adequate MHM in Sierra Leone (2017).

²The percentage of women and adolescent girls living in a household with unimproved sanitation facilities or practicing open defecation was higher amongst those not practicing adequate MHM in Sierra Leone (2017).

Table 3: Sanitation and Menstrual Hygiene Management

Basic Drinking Water, Sanitation and Handwashing

In 6 out of the 13 surveys (16 surveys suppressed) analyzed, the percentage of women and adolescent girls living in a household using basic drinking water, sanitation and handwashing facilities was higher among those practicing adequate MHM compared to those who do not use appropriate materials and have a private place to wash and change. Among those practicing inadequate MHM, on average, 32.3 percent reported living in a household using basic drinking water, sanitation and handwashing facilities, compared to 34.9 percent among women practicing adequate MHM.

WASH Facilities and Exclusion from Activities due to Menstruation

Table 1: Use of Basic and Limited Sanitation Services and Exclusion from Activities due to Menstruation

Improved Not-shared Facilities

In 7 out of 16 surveys (13 surveys suppressed), the percentage of women and adolescent girls living in a household with improved not-shared sanitation facilities was higher among those being excluded from social activities, school or work due to menstruation compared to those who are not being excluded.

Improved Shared Facilities

In 8 out of 16 surveys (13 surveys suppressed), the percentage of women and adolescent girls living in a household with improved shared sanitation facilities was higher among those not being excluded from social activities due to menstruation compared to those who are being excluded. On average, among those being excluded due to menstruation, 9.2 percent reported living in a household with improved shared sanitation facilities, compared to 8.7 percent among women and adolescent girls not being excluded.

Unimproved Not-shared Facilities

In 10 out of 16 surveys (13 surveys suppressed), the percentage of women and adolescent girls living in a household with unimproved not-shared sanitation facilities was higher among those being excluded from social activities due to menstruation compared to those who are not being excluded.

Unimproved Shared Facilities

In 14 out of 15 surveys (14 surveys suppressed), the percentage of women and adolescent girls living in a household with unimproved shared sanitation facilities was found to be below 5 percent among those practicing adequate MHM and those practicing inadequate MHM.

Table 2: Management of Excreta and Exclusion from Activities due to Menstruation

Improved Sanitation Facilities with Safe Disposal of Excreta

In 15 out of 26 surveys (3 surveys suppressed), the percentage of women and adolescent girls living in a household with improved sanitation facilities with safe disposal of excreta and those living in a household with a sewer connection was higher among those not being excluded from activities due to menstruation compared to those who are being excluded. Across the 26 surveys, on average, there were very little differences (<1 percent) in the percentage of women and adolescent girls living in a household with improved sanitation facilities with safe disposal of excreta and those living in a household with a sewer connection between those that are excluded due to menstruation and those that are not.

Open Defecation

In 7 out of 26 surveys (3 surveys suppressed), the percentage of women and adolescent girls living in a household practicing open defecation was higher among women and adolescent girls being excluded from activities due to menstruation compared to those who are not being excluded. On average, there were very little differences (<1 percent) in the percentage of women and adolescent girls living in a household practicing open defecation between those that are excluded due to menstruation and those that are not.

Table 3: Sanitation and Exclusion from Activities due to Menstruation

Basic Drinking Water, Sanitation and Handwashing

In 15 out of 25 surveys (4 surveys suppressed), the percentage of women and adolescent girls living in a household using basic drinking water, sanitation and handwashing facilities was higher among those not being excluded from social activities due to menstruation compared to those who are being excluded. On average, among those being excluded due to menstruation, 44.3 percent reported living in a household using basic drinking water, sanitation and handwashing facilities compared to 48.2 percent among women and adolescent girls not being excluded.

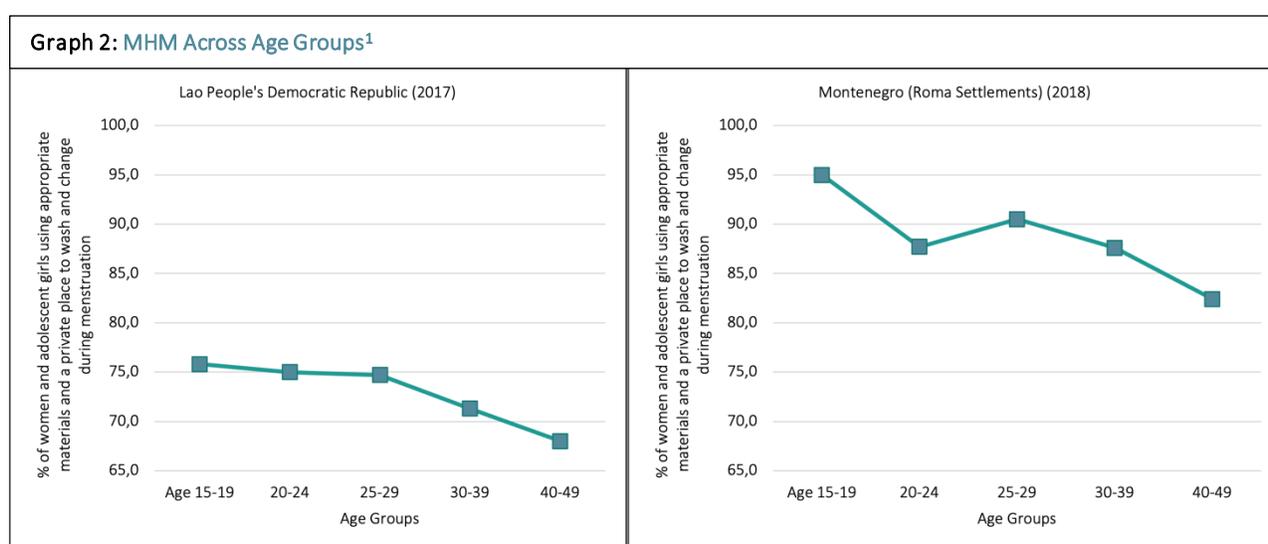
Socioeconomic Factors and MHM

[Guinea Bissau was excluded from the analysis of Table 4 because an error occurred in the adaptation of the Computer-Assisted Personal Interviews.]

In general, the percentages of women and adolescent girls aged 15-49 practicing adequate MHM varied greatly across the surveys analyzed, ranging from 98.1 percent in Turkmenistan to 54.8 percent in Tunisia.

Age

In 13 out of 26 surveys (2 surveys suppressed), the percentage of adolescent girls aged 15-19 practicing adequate MHM was higher compared to women aged 40-49 years. Togo was an exception as the percentage of women and adolescent girls practicing adequate MHM was found to increase with age.



¹In Lao People's Democratic Republic (2017), the percentage of women and adolescent girls practicing adequate MHM decreased from 75.8% in the 15-19 age group to 68% in the 40-49 age group.

In Roma Settlements in Montenegro (2018), the percentage of women and adolescent girls practicing adequate MHM decreased from 95% in the 15-19 age group to 82.4% in the 40-49 age group.

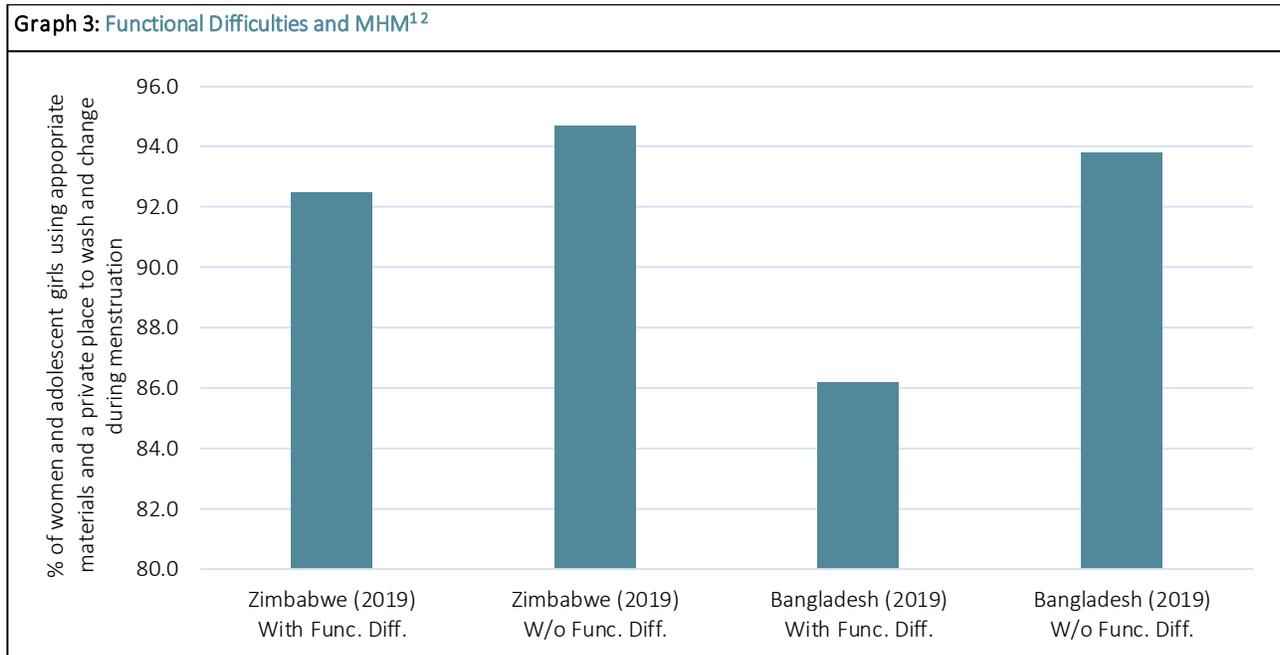
Education

In 8 out of 25 surveys (3 surveys suppressed), the percentage of women and adolescent girls using appropriate materials and having a private place to wash and change increased with the level of education. On average, small differences (<2 percent) were observed across the 24 surveys between the percentage of women and adolescent girls practicing adequate MHM and the level of education (87.6 percent for pre-primary or none, 88.8 percent for primary, 87.6 percent for secondary+).

Functional Difficulties

In 12 out of 21 surveys (7 surveys suppressed), women and adolescent girls without functional difficulties were more likely to use appropriate materials and have a private place to wash and change; these trends can be observed in Graph 3. The opposite trend was observed in 9 surveys where women and adolescent girls with functional difficulties were more likely to practice adequate MHM. On average, 84.9 percent of women

and adolescent girls with functional difficulties reported practicing adequate MHM compared to 86.6 percent among women without functional difficulties.



¹In Zimbabwe (2019), the percentage of women and adolescent girls practicing adequate MHM was 94.7% for those without functional difficulties compared to 92.5% for those with functional difficulties.

²In Bangladesh (2019), the percentage of women and adolescent girls practicing adequate MHM was 93.8% for those without functional difficulties compared to 86.2% for those with functional difficulties.

Life Satisfaction

In 9 out of 17 surveys (11 surveys suppressed), the percentage of women and adolescent girls who practice adequate MHM decreased with lower life satisfaction. In 3 surveys, the opposite trend was observed: increased life satisfaction was associated with a decrease in the percentage of women and adolescent girls practicing adequate MHM.

Reproductive Autonomy

In 15 out of 27 surveys (Zimbabwe suppressed), the percentage of women and adolescent girls practicing adequate MHM was higher among those using contraceptive methods compared to women and adolescent girls not using any contraceptive method. In Pakistan (Punjab), for example, among women and adolescent girls who are currently using a contraceptive method, 86.1 percent reported using appropriate materials and a private place to wash and change, compared to 80.8 percent among those currently not using contraception.

In 8 out of 15 surveys (13 surveys suppressed), the percentage of women and adolescent girls using appropriate materials and having a private place to wash and change at home was higher among those women and adolescent girls who wanted to get pregnant at the time of last pregnancy. For example, in Sierra Leone, among women and adolescent girls who wanted to get pregnant, 90.7 percent reported using appropriate materials and having a private place to wash and change, compared to 87.4 percent among

women and adolescent girls who did not want to get pregnant at the time of last pregnancy.

Marital Status

[Variable “marital/union status”: “living with a partner” category was suppressed due to low cases in numerous surveys]

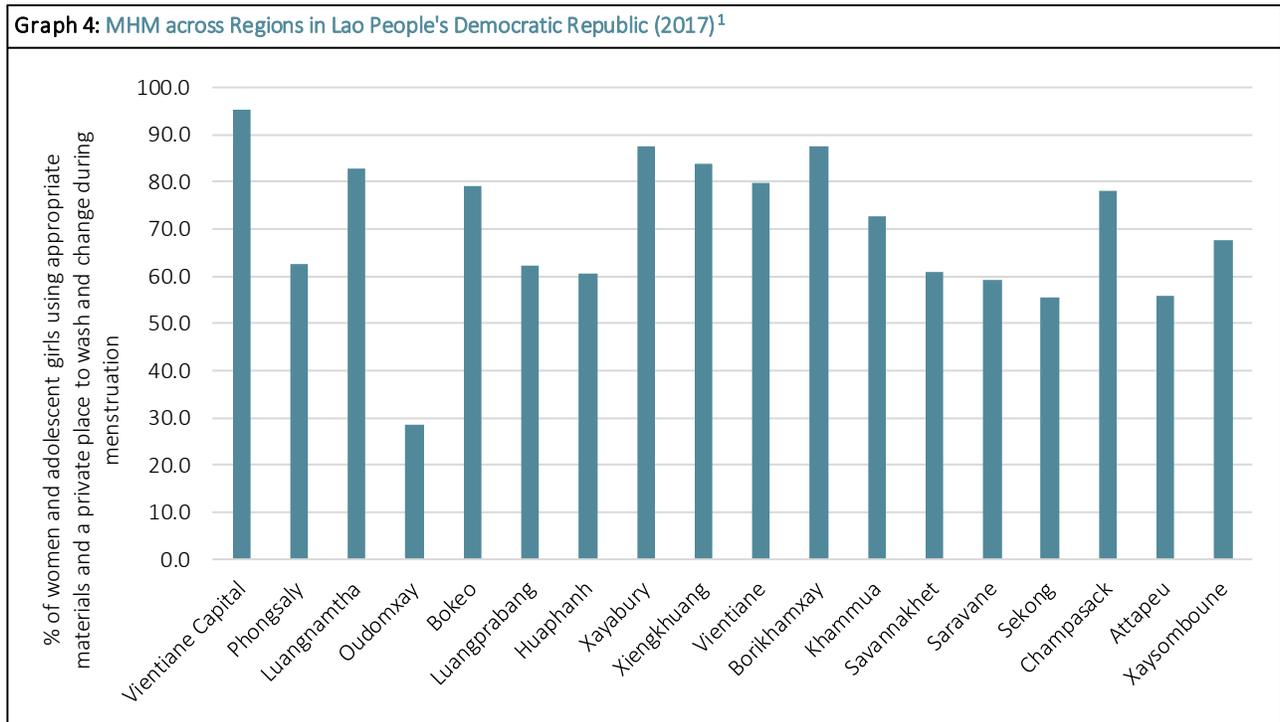
In 21 out of 28 surveys analyzed, the percentage of women and adolescent girls using appropriate materials and having a private place to wash and change was higher in women and adolescent girls who are currently not in a union compared to those who are married. The average difference based on marital status was 1.1 percent (85.4 percent for those who are not in a union and 84.3 percent for those who are married).

Rural and Urban Wealth Index

In 15 out of 24 surveys (4 surveys suppressed), the percentage of women and adolescent girls using appropriate materials and having access to a private place to wash and change at home was high (>85 percent) in all wealth quintiles in rural and urban areas. On average, 85.1 percent of women and adolescent girls reported practicing adequate MHM in the rural areas compared to 87.7 percent in the urban areas.

Region

In 11 out of 27 surveys (1 survey suppressed), large variations (>10 percent) in the percentage of women and adolescent girls using appropriate materials and a private place to wash and change were observed across regions within the surveys. The greatest difference was observed in Lao People’s Democratic Republic: 95.3 percent of women and adolescent girls living in the Vientiane Capital region reported practicing adequate MHM compared to 28.5 percent of women and adolescent girls living in the Oudomxay region.

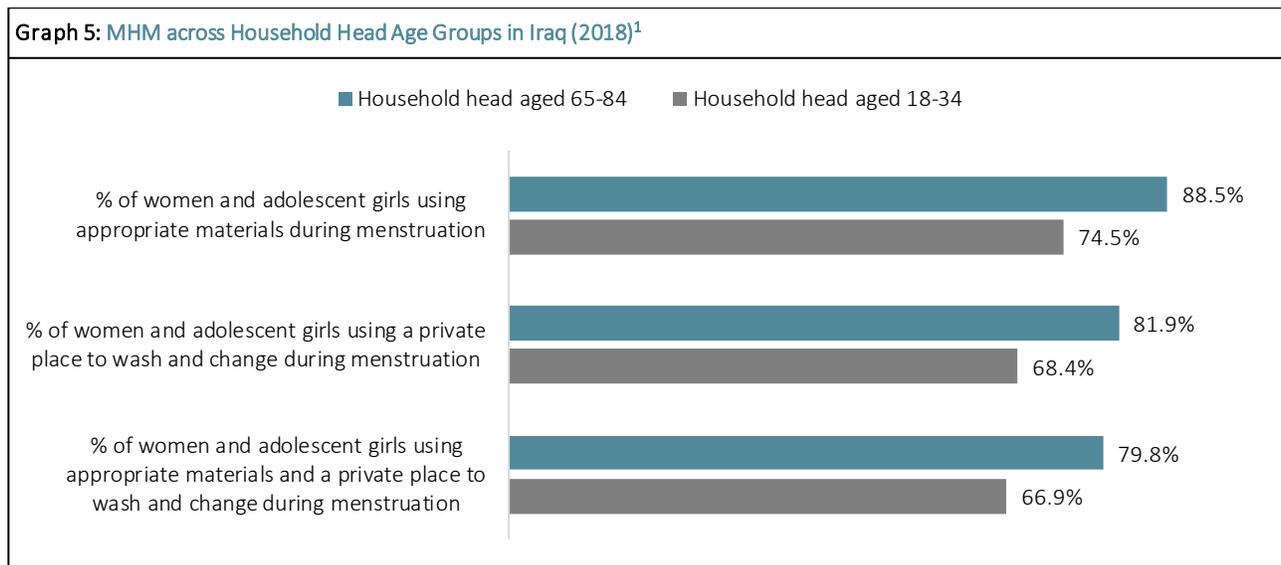


¹Large variations were observed in the percentage of women and adolescent girls practicing adequate MHM in the different regions of Lao People’s Democratic Republic (2017) with the highest at 95.3% in Vientiane Capital and the lowest at 28.5% in Oudomxay .

Age of Household Head

[Variable “age of household head”: categories “<18” and “85+” were suppressed due to low cases in numerous surveys]

In 12 out of 27 surveys (Gambia suppressed), the percentage of women and adolescent girls practicing adequate MHM was higher amongst females living in a household with a household head aged 65-84 compared to those living with a household head aged 18-34



¹In Iraq (2018), the percentage of women and adolescent girls using appropriate materials, using a private place to wash and change during menstruation, and overall practicing adequate MHM was higher amongst those living in a household with a household head aged 65-84 compared to those living in a household with a household head aged 18-34.

Education of Household Head

In 9 out of 26 surveys (2 surveys suppressed), the percentage of women and adolescent girls using appropriate materials and having a private place to wash and change was found to increase with an increased education level of the household head. On average, there was little (<3 percent) difference between the three categories (95.04 percent for pre-primary or none; 92.65 percent for primary; 95.03 percent for secondary+).

Sex of Household Head

In 14 out of 28 surveys, the percentage of women and adolescent girls practicing adequate MHM was higher amongst women and adolescent girls living in a male-headed household compared to a female-headed household. On average, the difference was found to be very small (<1 percent).

Ethnicity of Household Head

In 8 out of 15 surveys (13 surveys suppressed), great variations (>5 percent) in the percentage of women and adolescent girls practicing adequate MHM were found between the ethnicity of household heads. The

largest differences were observed in the Lao People's Democratic Republic: amongst women and adolescent girls with a household head from the Lao-Tai ethnic group, 85.03 percent had access to both appropriate materials and a private place to wash and change compared to 42.5 percent of women and adolescent girls who live with a household head from the Mon-Khmer ethnicity.

Number of Women Living in a Household

[Variable "number of women living in a household": "5+" category was suppressed due to low cases in numerous surveys]

In 13 out of 26 surveys (2 surveys suppressed), the percentage of women and adolescent girls practicing adequate MHM increased with the number of women in the household. On average, 86.8 percent of women and adolescent girls living in a household with one woman reported practicing adequate MHM compared to 87.3 percent for those living in a household with 2-5 women.

Socioeconomic Factors and Exclusion from Activities due to Menstruation

In general, the percentages of women and adolescent girls aged 15-49 being excluded from social activities, school or work due to menstruation varied greatly across the surveys analyzed, ranging from 20.1 percent in Sierra Leone to 3.2 percent in Mongolia.

Age

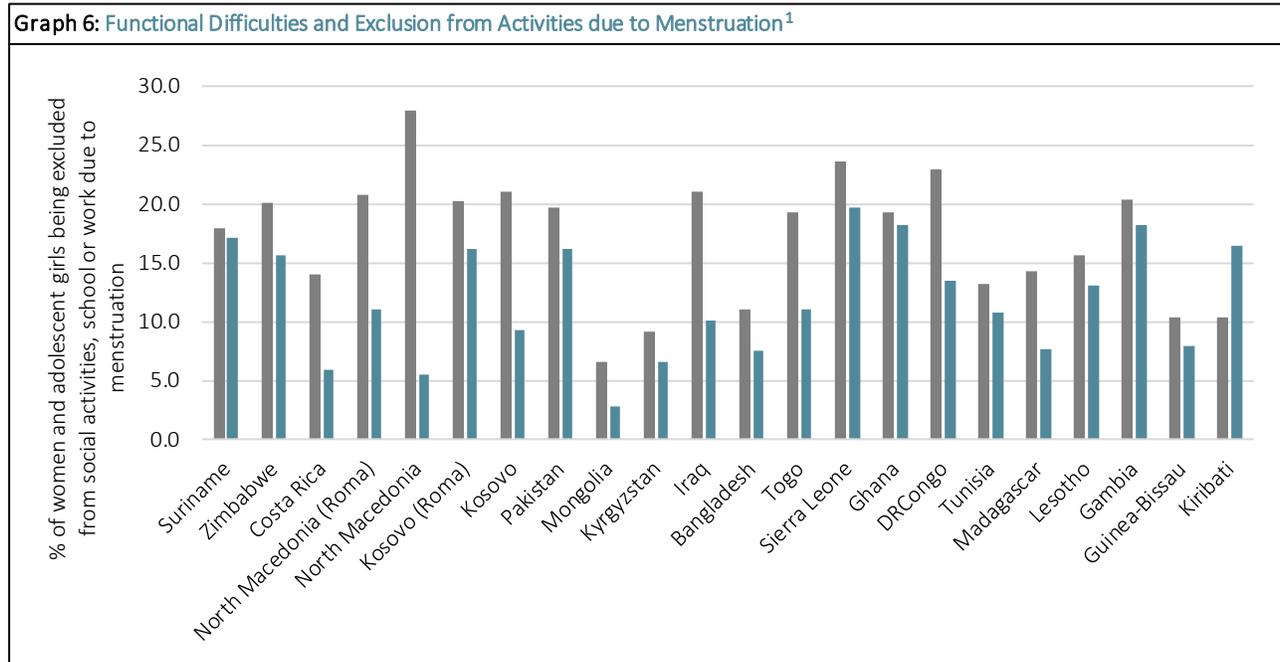
In 22 out of 27 surveys (2 surveys suppressed), there was a decline in the percentage of women and adolescent girls excluded with increased age, this decrease was, however, not linear in all surveys. In Lesotho, for example, 14.9 percent of women aged 15-19 years, 16.1 percent of women aged 20-24, 10.6 percent of women aged 30-39 and 12.6 percent of women aged 40-49 were excluded from social activities, school or work due to their last menstruation. In the remaining 5 surveys, the opposite trend was observed, where the percentage of women and adolescent girls who were excluded from activities increased with age.

Education

In 7 out of 25 surveys (3 surveys suppressed), the percentage of women and adolescent girls who reported being excluded from social activities, school or work due to menstruation decreased with an increased education level of the women and adolescent girls. In 12 surveys, the highest percentage of women and adolescent girls who were excluded from activities was observed among women with primary education. On average, small differences (<2 percent) in the percentage of women and adolescent girls who were excluded from activities were observed across the different education levels (12.2 percent for pre-primary or none; 12.7 percent for primary, 11 percent for secondary+).

Functional Difficulties

In 21 of 22 surveys (7 surveys suppressed), the percentage of women and adolescent girls excluded from activities due to menstruation was higher amongst those with functional difficulties. Across the 22 surveys, an average of 17.2 percent of women and adolescent girls with functional difficulties are excluded from social activities, school or work due to menstruation, compared to 11.8 percent of women and adolescent girls without functional difficulties.



¹In 21 out of the 22 surveys shown, the percentage of women and adolescent girls using appropriate materials and a private place to wash and change during menstruation is higher among those without functional difficulties (average 17.2% compared to those with functional difficulties (average 11.8%); the opposite trend was observed in Kiribati.

Life Satisfaction

In 13 out of 17 surveys (12 surveys suppressed), the percentage of women and adolescent girls being excluded from activities due to menstruation was smaller amongst those who reported being very happy or somewhat happy compared to those being somewhat unhappy or very unhappy. Across the 17 surveys, exclusion during menstruation was found to be 2.3 percent higher amongst those with poor life satisfaction compared to those with high life satisfaction.

Reproductive Autonomy

In 25 out of 28 surveys (Zimbabwe suppressed), the percentage of women and adolescent girls excluded from activities due to menstruation was higher amongst women and adolescent girls using contraception; the opposite trend was observed in the remaining 3 surveys. Across the 25 surveys, the average percentage of women and adolescent girls using contraception that reported being excluded from activities was 12.3 percent compared to 10.5 percent of women and adolescent girls not using any contraception.

Similarly, in 14 out of 16 surveys (13 surveys suppressed), the percentage of women and adolescent girls being excluded from activities was higher amongst women and adolescent girls who did not want to get

pregnant at the time of their last pregnancy compared to those who wanted to get pregnant. On average, 11.8 percent of the women and adolescent girls who did not want to get pregnant at the time of their last pregnancy were excluded from activities compared to 10.6 percent of women who wanted to get pregnant.

Marital Status

[Variable “marital/union status”: “living with a partner” category was suppressed due to low cases in numerous surveys]

In 26 out of 29 surveys, the percentage of women and adolescent girls being excluded from activities due to menstruation was higher amongst women and adolescent girls who are not in a union compared to women and adolescent girls who are currently married. A large difference (>15 percent) was found in Gambia, for example, among women and adolescent girls who are married, 13.1 percent reported being excluded from activities compared to 31.3 percent of women and adolescent girls who are not in a union. In the remaining 3 surveys, the opposite trend was observed.

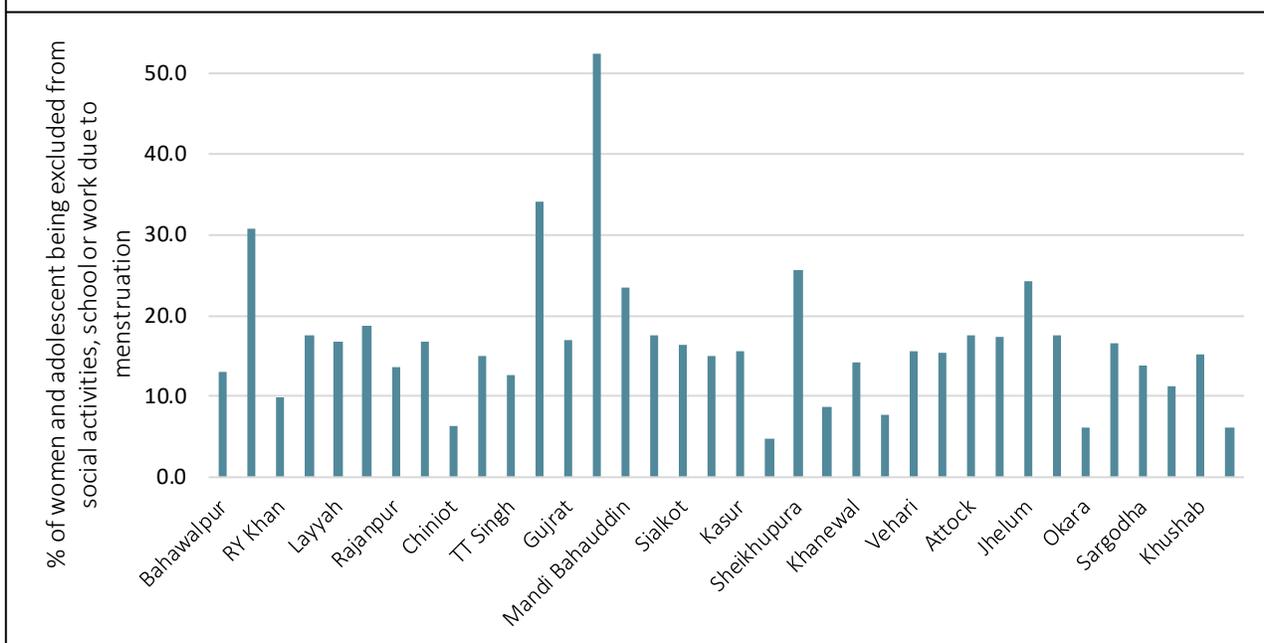
Rural and Urban Wealth Index

In 8 out of 25 surveys (4 surveys suppressed), the percentage of women and adolescent girls who reported being excluded from social activities, school or work due to menstruation was found to be higher in the lowest three rural and urban wealth quintiles (poorest, second and middle) compared to the upper two quintiles (fourth and richest). Across the 25 surveys, a very small difference (<0.3 percent) was observed between the percentages of women and adolescent girls excluded in rural (11.7 percent) and urban (11.4 percent) areas.

Region

Across the 29 surveys analyzed, large regional variations were observed with regards to the percentage of women and adolescent girls being excluded from activities. On average, the difference in percentage of women and adolescent girls being excluded was found to be 14.53 percent. The greatest difference was observed in Pakistan (Punjab province) with 52.5 percent of women and adolescent girls living in Hafizabad district being excluded compared to 4.7 percent of women and adolescent girls living in Nanaka Sahib district (see Graph 7).

Graph 7: Exclusion from Activities due to Menstruation in Pakistan (Punjab province) by district¹



¹Large variations were observed in the percentage of women and adolescent girls using appropriate materials and a private place to wash and change during menstruation across the different districts in the Punjab province of Pakistan (2017 -18).

Age of Household Head

[Variable “age of household head”: categories “<18” and “85+” were suppressed due to low cases in numerous surveys]

14 out of 27 surveys (2 surveys suppressed), the percentage of women and adolescent girls being excluded from activities was higher amongst those living with a household head aged 18-34 compared to those living with a household head aged 65-84. The opposite trend was observed in 12 surveys. On average, a very small difference (<1 percent) was observed in the percentage of women and adolescent girls being excluded across the three household head age groups (18-34 yrs: 10.8 percent; 35-64 yrs: 11.6 percent; 65-84 yrs: 11 percent).

Education of Household Head

In 8 out of 27 surveys (2 surveys suppressed), the percentages of women and adolescent girls who reported being excluded from social activities, school or work due to menstruation decreased with an increase in the education level of the household head. Across the 28 surveys, no variations were observed across the three education categories (pre-primary or none: 12 percent, primary: 12 percent and secondary +: 11.9 percent).

Sex of Household Head

In 20 out of 29 surveys, the percentage of women and adolescent girls who were excluded from activities due to menstruation was higher amongst those living with a female household head; the average difference is very small (0.9 percent). The greatest difference was observed in the Roma Settlements in Kosovo: 16.6

percent of women and adolescent girls living with a male household head reported being excluded from activities compared to 29.2 percent of women and adolescent girls living with a female household head.

Ethnicity of Household Head

In 11 out of 15 surveys (14 surveys suppressed), a variation of more than 5 percent in the percentage of women and adolescent girls who reported being excluded from activities due to menstruation was observed between household head ethnicities. On average, an 8 percent difference in the percentage of women and adolescent girls being excluded was observed among the different household head ethnicities.

Number of Women Living in a Household

[Variable “number of women living in a household”: “5+” category was suppressed due to low cases in numerous surveys]

In 24 out of 27 surveys (2 surveys suppressed), the percentage of women and adolescent girls being excluded from activities due to menstruation was found to increase with the number of women in a household. On average, the percentage of women and adolescent girls being excluded was 1.8 percent higher amongst women and adolescent girls living in a household with two to five women compared to households with one woman. Gambia exemplifies this finding; 16 percent of women and adolescent girls living in a household with one woman were excluded from activities due to menstruation whereas 21.1 percent of women and adolescent girls living in a household with two to five women were excluded due to menstruation.

8

Discussion

With a greater acknowledgement of the importance of MHM, the unmet menstrual needs of women and adolescent girls are being increasingly researched. However, research in the field often focuses on female adolescents in one country or region and there are few comparable quantitative studies available [2]. We aimed to fill this research gap by analyzing the 6th round of the MICS, the first ever to include questions on MHM. We provided a cross-country analysis of the impact of WASH facilities and socioeconomic factors on the percentage of women and adolescent girls practicing adequate MHM and being excluded due to menstruation across 29 LMICs.

Water, Sanitation and Hygiene

Our analysis found that across the 29 surveys the majority of women and adolescent girls using appropriate materials and having a private place to wash, live in a household using improved sanitation facilities.

The findings further showed that, in the majority of countries, higher percentages of women and adolescent girls practicing adequate MHM reported having access to improved (shared and not shared) sanitation facilities compared to those not practicing adequate MHM. Similarly, women and adolescent girls not practicing adequate MHM were found to be more likely to live in households with unimproved (shared and not shared) sanitation facilities. While these findings are in line with our hypotheses, it has to be acknowledged that 16 surveys had to be suppressed from the analysis, hence the conclusions that can be drawn are limited to the countries included.

Higher percentages of women and adolescent girls practicing adequate MHM reported having access to safe excreta disposal on site or a sewer connection compared to those not practicing adequate MHM. Additionally, large variations were observed in the percentage of women and adolescent girls practicing open defecation across the countries analyzed with a greater percentage among women and adolescent girls who are not practicing adequate MHM. The existing literature shows that open defecation can be a proxy indicator for inadequate MHM [2]. It can reflect a poor infrastructure of the household and the psychological impact on women, such as feeling humiliated and insecure [30].

Furthermore, women and adolescent girls practicing adequate MHM and not being excluded from activities due to menstruation were more likely to have access to basic drinking water, sanitation and handwashing facilities. The aforementioned findings are in line with the existing literature, which showed a significant relationship between good menstrual hygiene and the presence of adequate WASH facilities at home [14].

Interestingly, our findings did not show any major differences in the type of sanitation facilities and excreta disposal systems available based on whether women and adolescent girls were excluded from activities due to menstruation or not. This could be explained by the fact that existing research shows the importance of having adequate WASH facilities not only at home but also in schools to prevent exclusion from activities due to menstruation [3], [14], [25]. This was further acknowledged by the UNICEF partnership with WaterAid in Cambodia which found that girls felt unsafe to use toilets at school due to lack of privacy, limited water availability [1].

Our findings reinforce the interlinkages between WASH and MHM as well as the need for interventions aimed at improving the access to and quality of WASH facilities. Furthermore, the findings show the importance of context-specific interventions and research into the quality of WASH facilities not only at home but also in public facilities.

Socioeconomic Factors and MHM

In at least half of the countries surveyed, women and adolescent girls with functional difficulties, with lower life satisfaction, those who are married, with less reproductive autonomy (not using contraception and did not want to get pregnant at the time of last pregnancy) and women aged 40-49 were found to be more at risk of not practicing adequate MHM. Only small differences were observed across the different education levels.

These findings indicate that women and adolescent girls who reported having higher levels of life satisfaction were found to be more likely to practice adequate MHM, which is in line with the findings from Belayneh and Mekuriaw who uncovered that schoolgirls who regularly experience fear, confusion, shame and low self-esteem often practice inadequate MHM [31]. In addition, women may have different access to menstrual products due to their marital status. As Anand and colleagues indicated, the use of sanitary napkins was extremely low among married women in India [16]. Moreover, our research showed that functional difficulties can be a barrier for women and adolescent girls to practicing adequate MHM, which is in line with existing research and our hypotheses. Research in Uganda and Zambia revealed that disabled people are seen as dirty and are prevented from using public latrines and water points [23]. It is therefore important to ensure that women and adolescent girls with functional disabilities are included in the development of interventions and programs that aim to enhance MHM. Our research confirmed the importance of partnerships such as between UNICEF and the Plus Public Foundation in Kyrgyzstan, which developed education materials on menstrual hygiene and safety for children with visual and hearing disabilities [1].

In contrast to our hypotheses, in the majority of countries, the level of rural/ urban wealth, the number of women and adolescent girls in a household, household head's age and education were not found to have a clear effect on the percentage of women and adolescent girls practicing adequate MHM. Only sex of household head was found to have an effect in the majority of countries where women and adolescent

girls are more likely to practice adequate MHM in a male headed household compared to a female one. Large variations were observed across ethnicities of household heads and regions within the countries analyzed, which is in line with our hypotheses.

The lack of a positive relationship between rural/ urban wealth and MHM in our findings could be explained by the fact that in most countries, already over 85 percent of women and adolescent girls were found to use appropriate materials and have a private place to wash and change. Moreover, our findings showed little variations in MHM across the levels of individual women and household head education, which is in contrast with our hypotheses. A possible reason for this could be that the way education is measured considerably varies between the countries analyzed and hence, the grouped classifications may not be accurately portraying all the nuances of the data. The same assumption also applies to the findings on individual women and household head education and exclusion from activities due to menstruation. Furthermore, vast differences were observed within countries based on the household heads' ethnicity and the households' region. This could be due to differences in the level of menstrual knowledge and access. For example, a study conducted in Nepal found large variations in adequate menstrual practices in different castes and ethnicities; this highlighted that "blanket menstrual health programs" are insufficient and that "the use of local languages and context-specific content" is essential [32, p.1288]. This finding emphasizes the importance of local collaborations and the involvement of civil society and grassroots organizations in the field. By collaborating with local actors and including their expertise into the interventions, UNICEF ensures that the programs are effective and that all people, especially those that are traditionally excluded, are included [1].

Socioeconomic Factors and Exclusion from Activities due to Menstruation

In the majority of countries surveyed, women and adolescent girls with functional difficulties, with low life satisfaction, who are not in a union, younger women and adolescent girls, those currently using contraception and those did not want to get pregnant at the time of last pregnancy were found to be more at risk of being excluded from social activities, school or work due to menstruation. There were minimal differences in exclusion observed across different education levels.

Our finding that having functional difficulties increases the likelihood of exclusion due to menstruation is in line with existing research. Steele and Goldblatt showed that women and adolescent girls with disabilities can face greater discrimination, violence and marginalization, especially during their menstruation [33]. Secondly, our finding also showed that women and adolescent girls with less reproductive autonomy are more likely to face exclusion due to their menstruation. The lack of reproductive autonomy can reflect the inability of these women and adolescent girls to make autonomous decisions about their lives, resulting in greater exclusion due to menstruation. Our results further showed that women with low levels of life satisfaction were more likely to be excluded from activities; this demonstrates that the level of MHM is linked to women and adolescent girls' overall life satisfaction and well-being. A study by Belayneh and Mekuriaw illustrated that menstruation can elicit negative emotions among schoolgirls such as shame and fear, worsening their menstrual hygiene practices and thereby causing absenteeism from school [31]. Furthermore, this study also reinforces our

finding that younger women and adolescent girls are more likely to face exclusion, which could be in part due to their greater emotional sensitivity. It is therefore pertinent to raise awareness of menstruation at school and to spread knowledge about menstrual health and hygiene among young adolescents. Working together with Ministries of Education and Health to incorporate education about menstruation into the school curricula can be a successful tool. This was seen in Afghanistan where UNICEF was involved in the development of educational materials on MHM for teachers to promote hygienic menstrual practices at schools and at the community level [1]. This campaign further aimed to reduce the cultural stigma around menstruation that is prevalent in the country by involving religious leaders as well as male members of society [1].

Our results illustrated that in the majority of countries having a greater number of women in a household and a female household head resulted in a higher likelihood of exclusion from activities due to menstruation. Rural and urban wealth, household head age and education had no clear effect on the likelihood of women and adolescent girls being excluded due to menstruation. Large variations were found across ethnicities of household heads and regions within the analyzed countries.

The finding that women and adolescent girls living in female headed households were found to face greater exclusion can be explained by the evidence that female headed households in resource-poor contexts are generally more disadvantaged than male headed households due to discriminating sociocultural norms [34]. The great differences in exclusion due to menstruation observed across ethnicities and regions within the countries analyzed could be attributed to the presence of varying cultural beliefs surrounding menstruation. Existing research shows that contemporary cultural and social norms can restrict mobility by prohibiting certain activities, such as visiting temples during menstruation [14], [28]. Establishing working groups on a national level and involving governments into the research on MHM can motivate politicians and other influential people to break taboos and stigma on menstruation and normalize this topic. For example, in Eritrea, early governmental involvement in research resulted in an incorporation of research and programs by civil society and the government [1].

Limitations and Recommendations for MICS

This cross-country analysis of the MICS6 data contributes to the existing literature on MHM and provides useful insights into which socioeconomic factors can put women and adolescent girls at risk of practicing inadequate MHM and facing social exclusion due to menstruation. There are however limitations to this research project that need to be acknowledged.

First of all, given the nature and the scope of this project and its aims, a descriptive analysis of the results was conducted. We were able to draw conclusions regarding in which and in how many countries an effect was observed, however, whether these effects were of statistical significance and whether the findings are generalizable cannot be concluded.

Another limitation is that the current MICS6 data used in this analysis are collected from menstruating women and adolescent girls aged 15-49. However, most girls begin puberty between the ages of 10 and 14 [4] and our study, therefore, does not reflect the needs of these young adolescents during menstruation.

Moreover, this study focuses on the hardware interventions of MHM, that address the use of materials or access to WASH facilities but does not address the software interventions that are concerned with the knowledge of menstruation. The current MICS6 data do not include questions assessing menstrual knowledge, it would, however, be of importance for the design of future interventions to assess for example whether the use of inappropriate materials is a result of inaccessibility to appropriate materials or a lack of knowledge. For instance, research by Thakur et al. showed that young girls aged 15-24 who did not receive adequate information about menstruation before their menarche were more likely to practice unhygienic menstruation compared to women of older ages who were likely to possess better information due to more life experience [28].

9

Recommendations

Based on the findings of this study as well as the limitations discussed above, we have developed recommendations that would be beneficial for future MICS rounds as well as the development of other global household surveys aiming to collect data regarding MHM:

- Collecting MHM data from adolescents aged 10-14 will ensure that the unmet menstrual needs of young adolescents will be researched and adequately addressed, as MICS currently only surveys women and adolescent girls aged 15-49.
 - It is important to note that according to UNICEF standard practice, data are collected from caretakers rather than directly surveying the young adolescents themselves; hence, this could have implications for the ease of access to accurate information.
- Ensuring that all country surveys incorporate questions inquiring about reasons for exclusion from activities (as done by Mongolia). This will enable the development of appropriate interventions to tackle social exclusion during menstruation.
 - Please see Appendix E for question about the reason for exclusion of women from daily activities (ill/in pain/heavy bleeding, poor sanitation facilities or fear of degrading treatment).
- Ensuring that all country surveys incorporate questions specifying the type of menstrual materials used (as done by Bangladesh, Madagascar and Zimbabwe). This will provide a more nuanced understanding of the materials available to women and adolescent girls.
 - Please see Appendix E for question about different materials used (such as sanitary pads, toilet paper, underwear only, or natural materials like cow dung and leaves).
- Including questions that provide insights about the level of knowledge women have regarding menstruation and appropriate menstrual hygiene practices, source of knowledge (e.g. female figure at home, teachers at school), and their existing beliefs and opinions. This will help to determine the need for informational and anti-stigma campaigns.
 - Knowledge: For example, the following questions have been included in the 8th Phase of the Demographic and Health Surveys (DHS):
 - From one menstrual period to the next, are there certain days when a woman is more likely to become pregnant?
 - Is this time just before her period begins, during her period, right after her period has ended, or halfway between two periods?
 - After the birth of a child, can a woman become pregnant before her menstrual period has returned?
 - Source of information: For example, potential questions include:
 - When did you first learn about menstruation? And from whom?

- Who do you usually turn to for advice regarding menstruation?
 - Beliefs and opinions: For example, potential questions include:
 - How do you feel about your menstruation? – ashamed, afraid, dirty/impure, confident, positive, neutral
- Developing questions that collect data on the availability of adequate sanitation facilities in public places, schools and workplaces providing valuable insights into the various factors restricting mobility and social interaction during menstruation. Currently, the MICS questions about sanitation facilities are limited to the home environment.
 - For example, potential questions include:
 - For schoolgirls / working women and adolescent girls:
 - At your school / work, did you have a private place to wash and change during your last menstruation? Were you able to safely dispose of your menstrual materials while at school/ work?

We acknowledge that in order to implement these recommendations the appropriate MICS process of validation will have to be undertaken and that their feasibility depends various extrinsic factors.

10

Conclusion

The importance of practicing adequate MHM has been recognized by the international community, however, the unmet menstrual needs of millions of women and adolescent girls are inadequately understood and under-researched. Motivated by this research gap, we have conducted a cross-country study of the MICS6 data and assessed the effect of selected socioeconomic factors and MHM. Although, this report solely focuses on LMICs, it is important to note that stigma and social exclusion are globally prevalent.

Our findings showed that certain socioeconomic factors impacted the percentage of women and adolescent girls practicing adequate MHM in the surveys analyzed. We hope that the study will act as a basis for future, more extensive cross-sectional and cross-country research as more countries publish their MICS6 results.

Furthermore, we believe that including our recommendations in future MICS rounds will help in gaining a deeper understanding of the current barriers to practicing adequate MHM among women and adolescent girls. Our study highlights the importance of paying attention to the nuances of unmet needs and shows that sector-wide collaboration is essential to improve the situation of millions of menstruators worldwide.

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Appendices

Appendix A: MHM Questions

Standard MHM questions included in the MICS6 women's questionnaire:

UN14. When did you last menstrual period start?	Days Ago
	Weeks Ago
	Months Ago
	Years Ago
	In menopause/has had hysterectomy à END
	Before last birth à END
	Never menstruated à END
UN15. Check UN14: Was the last menstrual period within the last year?	Yes, within last year
	No, one year or more à END
UN16. Due to your last menstruation, were there any social activities, school or work days that you did not attend?	Yes
	No
	DK/Not sure/No such activity
UN17. During your last menstrual period were you able to wash and change in privacy while at home?	Yes
	No à END
	DK à END
UN18. Did you use any materials such as sanitary pads, tampons or cloth?	Yes
	No à END
	DK à END
UN19. Were the materials reusable?	Yes
	No à END
	DK à END

Appendix B: List of Surveys

List of Surveys	Year of Surveys
Bangladesh	2019
Costa Rica	2018
Gambia	2018
Ghana	2017-2018
Guinea-Bissau*	2018-2019
Iraq	2018
Kiribati	2018-2019
Kosovo - Roma, Ashkali, and Egyptian Communities	2019-20
Kosovo	2019-20
Kyrgyzstan	2018
Lao People's Democratic Republic	2017
Lesotho	2018
Madagascar	2018
Mongolia	2018
Montenegro - Roma Settlements	2018
Montenegro	2018
North Macedonia - Roma Settlements	2018-2019
North Macedonia	2018-2019
Pakistan (Punjab)	2017-2018
Serbia - Roma Settlements	2019
Serbia	2019
Sierra Leone	2017
Suriname	2018
The Democratic Republic of Congo	2017-2018
Togo	2017
Tonga	2019
Tunisia	2018
Turkmenistan	2019
Zimbabwe	2019
*Guinea Bissau was excluded from the analysis of Table 4 because an error occurred in the adaptation of the Computer-Assisted Personal Interviews and the estimates did not reflect the reality of women and adolescent girls in Guinea-Bissau	

Appendix C: List of Variables

Indicator	Definition
MHM	
Appropriate materials	Use of appropriate materials including reusable and non-reusable materials such as sanitary pads, tampons or cloths during the last menstruation.
Reusable materials	
Non-reusable materials	
Private place to wash and change	Women with a private place to wash and change at home during their last menstruation.
Exclusion from social activities, school or work	Women who reported not being able to participate in social activities, school or work due to their last menstruation.
WASH	
Table 1	
Improved sanitation facility	Improved sanitation facility hygienically separates human excreta from human contact. Improved sanitation facility includes flush or pour flush to piped sewer systems, septic tanks or pit latrines, ventilated improved pit latrines, pit latrines with slabs and composting toilets.
Unimproved sanitation facility	Unimproved sanitation facility does not hygienically separate human excreta from human contact.
Open defecation	Disposal of feces in fields, forests, bushes, open water bodies of water, beaches or other open spaces, or with solid waste
Shared facility	Shared facility divided into: shared by 5 households or less and shared by more than 5 households.
Not shared facility	Private facility that is not shared with other households.
Public facility	Public facility
Table 2	
Improved on-site sanitation systems	Removal of excreta from improved pit latrines and septic tanks
Safe disposal in situ of excreta from on-site sanitation facilities	Excreta stored in improved pit latrines and septic tanks that are never emptied (or the respondent does not know if these are ever emptied) or excreta buried in a covered pit is classed as 'safely disposed in situ'
Unsafe disposal of excreta from on-site sanitation facilities	Other methods of emptying and removal are not considered 'safely managed'
Removal of excreta for treatment off-site	Excreta from improved pit latrines and septic tanks that is removed by a service provider to treatment may also be safely managed, depending on the type of treatment received.
Sewer connections	Household with sewer connection
Unimproved sanitation	Household with unimproved sanitation facility
Open defecation	Household practicing open defecation.
Table 3	
Drinking Water	Drinking water is divided into: Household meeting the SDG criteria for basic drinking water and household not meeting the criteria and having limited service, unimproved or surface water.
Sanitation	Sanitation is divided into: Household meeting the SDG criteria for basic sanitation service and household not

	meeting the criteria and having limited service, unimproved or open defecation.
Handwashing	Handwashing is divided into: Household meeting the SDG criteria for basic handwashing service and household not meeting the criteria and having limited facility, no facility or no permission.
Individual and household characteristics	
<u>Table 4 and 5</u>	
Urban wealth index	Household characteristics such as ownership of durable assets (refrigerator or television), materials used for housing construction as well as water and sanitation facilities and urban residence were selected to construct the wealth index consisting of five categories.
Rural wealth index	Household characteristics such as ownership of durable assets (refrigerator or television), materials used for housing construction as well as water and sanitation facilities and urban residence were selected to construct a wealth index, consisting of five categories.
Functional difficulties	Functional difficulties in the domains of: seeing, hearing, walking, self-care, communication and remembering.
Currently using method to avoid pregnancy	Use of any contraceptive method to avoid pregnancy.
Wanted to get pregnant at the time	Whether child was wanted then or not for the last pregnancy
Number of women 15-49 yrs in a household	Number of women in the household. For this variable, we have created three categories: 1 women; 2-5 women and 5+ women in the household.
Sex of household head	Female or male household head
Region	Region of the household
Age	Age of women is divided into 5 groups: 15-19, 20-24, 25-29, 30-39 and 40-49. Age groups presented in this report also include those persons who had reached the full age indicated by the upper limit for an age group.
Education	Categories differ between surveys and in order to make cross-country comparisons, we have merged/ created three categories: pre-primary or none, primary and secondary +
Currently married or living with a man	Women stated whether they were married or living with a partner.
Life satisfaction	Estimation of overall happiness, due to small denominators we have merged the upper and lower second categories into: very happy/ somewhat happy, neither happy not unhappy and somewhat unhappy/very unhappy
Education of household head	Categories differ between surveys and in order to make cross-country comparisons, we have merged/ created three categories: pre-primary or none, primary and secondary +
Age of household head	We have created five groups for age of household as per published MICS country reports: <18 , 18-34, 35-64, 65-84 and 85+

Appendix D: Bangladesh Tables 1, 2, 3, 4 and 5

Table 1

Table 1: Relationship between use of basic and limited sanitation services and menstrual hygiene management
Percent distribution of household population by use of private and public sanitation facilities and use of shared facilities, by users of improved and unimproved sanitation facilities, Bangladesh, 2019

	Women (aged 15-49) using improved sanitation facilities				Women (aged 15-49) using unimproved sanitation facilities				Open defecation (no facility, bush, field)	Total	Number of female household members aged 15-49
	Not shared [1]		Shared by: 5 or less households		Not shared		Shared by: 5 or less households				
	65.1	18.1	2.4	0.1	8.8	3.4	0.5	0.0			
Total	65.1	18.1	2.4	0.1	8.8	3.4	0.5	0.0	1.4	100.0	64378
Reusable	1.00	60.8	20.1	2.7	9.7	4.1	0.7	0.0	1.7	100.0	38504
Not reusable	1.00	75.2	14.2	1.8	6.3	1.7	0.3	0.0	0.4	100.0	17573
DK whether reusable/Missing	1.00	53.3	14.7	2.7	24.0	5.0	0.0	0.0	0.3	100.0	71
Other/No materials	1.00	58.3	17.1	3.0	12.5	4.7	0.3	0.0	3.9	100.0	2037
DK/Missing	1.00	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	13
Use of appropriate materials for menstrual management during last menstruation: YES	1.00	65.3	18.2	2.4	8.7	3.4	0.5	0.0	1.3	100.0	56148
Use of appropriate materials for menstrual management during last menstruation: NO	1.00	58.3	17.1	3.0	12.5	4.7	0.3	0.0	3.9	100.0	2037
Private place to wash and change while at home: YES	1.00	65.1	18.2	2.5	8.7	3.4	0.5	0.0	1.4	100.0	56287
Private place to wash and change while at home: NO	1.00	61.4	18.2	1.6	11.6	3.8	0.2	0.2	2.5	100.0	1883
Use of appropriate menstrual hygiene materials with a private place to wash and change while at home: YES	1.00	65.4	18.2	2.5	8.6	3.4	0.6	0.0	1.3	100.0	54653
Use of appropriate menstrual hygiene materials with a private place to wash and change while at home: NO	1.00	58.8	13.0	2.7	18.2	3.6	0.5	0.2	3.0	100.0	406
Exclusion from participation in social activities, school or work due to their last menstruation in the last 12 months: YES	1.00	61.3	11.3	1.2	19.5	5.2	0.7	0.0	0.7	100.0	4574
Exclusion from participation in social activities, school or work due to their last menstruation in the last 12 months: NO	1.00	65.0	19.0	2.9	7.4	3.2	0.6	0.0	1.7	100.0	43714

[1] MCS indicator WS.9 - Use of basic sanitation services; SDG indicators 1.4.1 & 6.2.1
na: not applicable

Table 2

Table 2: Relationship between management of excreta from household sanitation facilities and menstrual hygiene management
 Percent distribution of women aged 15-49 living in a household by management of excreta from household sanitation facilities, Bangladesh, 2019

		Using improved on-site sanitation systems (including shared)				Connected to sewer	Using unimproved sanitation facilities	Practising open defecation	Missing	Total	Number of female household members aged 15-49	Unweighted: Number of female household members aged 15-49
		Safe disposal in situ of excreta from on-site sanitation facilities	Unsafe disposal of excreta from on-site sanitation facilities	Removal of excreta for treatment off-site [1]								
Total		70,4	5,5	1,6	8,4	12,8	1,4	0,0	100,0	64378	64378	
Reusable	1.00	71,1	5,9	1,3	5,5	14,5	1,7	0,0	100,0	38504	38779	
Not reusable	1.00	68,4	4,7	2,4	15,7	8,3	0,4	0,0	100,0	17573	16974	
DK whether reusable/Missing	1.00	57,3	9,0	2,4	2,0	29,1	0,3	0,0	100,0	71	71	
Other/No materials	1.00	69,3	4,4	0,9	3,9	17,6	3,9	0,0	100,0	2037	2171	
DK/Missing	1.00	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	13	
Use of appropriate materials for menstrual management during last menstruation: YES	1.00	70,2	5,5	1,6	8,7	12,6	1,3	0,0	100,0	56148	55824	
Use of appropriate materials for menstrual management during last menstruation: NO	1.00	69,3	4,4	0,9	3,9	17,6	3,9	0,0	100,0	2037	2171	
Private place to wash and change while at home: YES	1.00	70,2	5,5	1,6	8,6	12,7	1,4	0,0	100,0	56287	55800	
Private place to wash and change while at home: NO	1.00	69,3	6,3	0,7	5,4	15,8	2,5	0,0	100,0	1883	2178	
Use of appropriate menstrual hygiene materials with a private place to wash and change while at home: YES	1.00	70,2	5,5	1,7	8,8	12,6	1,3	0,0	100,0	54653	54106	
Use of appropriate menstrual hygiene materials with a private place to wash and change while at home: NO	1.00	61,6	5,9	0,9	6,0	22,5	3,0	0,0	100,0	406	479	
Exclusion from participation in social activities, school or work due to their last menstruation in the last 12 months: YES	1.00	58,9	9,4	3,8	1,8	25,4	0,7	0,0	100,0	4574	4556	
Exclusion from participation in social activities, school or work due to their last menstruation in the last 12 months: NO	1.00	70,8	4,8	1,5	9,8	11,3	1,7	0,0	100,0	43714	43905	

[1] MICS indicator WS.11 - Removal of excreta for treatment off-site; SDG indicator 6.2.1

Table 3

Table 3: Sanitation and menstrual hygiene management
 Percentage of women aged 15-49 living in a household using drinking water, sanitation and handwashing facilities, Bangladesh, 2019

		Percentage of women aged 15-49 using:							Basic drinking water, sanitation and hygiene service	Number of female household members aged 15-49
		Drinking water		Handwashing [A]				Total		
		Basic service [1]	Basic facility [B]	Limited facility	No facility	No permission to see/Other				
Total		98,1	76,5	11,0	12,4	0,1	100,0	52,1	64378	
Reusable	1.00	97,9	73,0	12,4	14,4	0,1	100,0	46,2	38504	
Not reusable	1.00	98,9	85,3	7,4	7,2	0,1	100,0	66,3	17573	
DK whether reusable/Missing	1.00	96,8	60,6	14,6	24,8	0,0	100,0	38,0	71	
Other/No materials	1.00	96,1	71,6	12,8	15,4	0,2	100,0	44,7	2037	
DK/Missing	1.00	(*)	(*)	(*)	(*)	(*)	(*)	(*)	13	
Use of appropriate materials for menstrual management during last menstruation: YES	1.00	98,2	76,9	10,9	12,2	0,1	100,0	52,5	56148	
Use of appropriate materials for menstrual management during last menstruation: NO	1.00	96,1	71,6	12,8	15,4	0,2	100,0	44,7	2037	
Private place to wash and change while at home: YES	1.00	98,2	76,9	10,9	12,1	0,1	100,0	52,4	56287	
Private place to wash and change while at home: NO	1.00	97,7	68,9	12,7	18,1	0,3	100,0	47,0	1883	
Use of appropriate menstrual hygiene materials with a private place to wash and change while at home: YES	1.00	98,2	77,1	10,8	12,0	0,1	100,0	52,6	54653	
Use of appropriate menstrual hygiene materials with a private place to wash and change while at home: NO	1.00	95,8	66,0	15,9	17,9	0,2	100,0	44,2	406	
Exclusion from participation in social activities, school or work due to their last menstruation in the last 12 months: YES	1.00	98,2	72,3	12,1	15,4	0,2	100,0	47,5	4574	
Exclusion from participation in social activities, school or work due to their last menstruation in the last 12 months: NO	1.00	98,1	79,0	9,7	11,2	0,1	100,0	53,4	43714	

[1] MICS indicator WS.2 - Use of basic drinking water services; SDG Indicator 1.4

[2] MICS indicator WS.9 - Use of basic sanitation services; SDG indicators 1.4.1 & 6.2.1

[A] For the purposes of calculating the ladders, 'No permission to see / other' is included in the denominator.

[B] Differs from the MICS indicator WS.7 'Handwashing facility with water and soap' (SDG indicators 1.4.1 & 6.2.1) as it includes 'No permission to see / other'. See table WS2.1 for MICS indicator WS.7

Table 4

Table 4: Menstrual hygiene management
 Percent distribution of women age 15-49 years by use of materials during last menstruation, percentage using appropriate materials, percentage with a private place to wash and change while at home and percentage of women using appropriate menstrual hygiene materials with a private place to wash and change while at home, Bangladesh, 2019

		Percent distribution of women by use of materials during last menstruation							Percentage of women using appropriate materials for menstrual management during last menstruation	Percentage of women with a private place to wash and change while at home	Percentage of women using appropriate menstrual hygiene materials with a private place to wash and change while at home [1]	Number of women who reported menstruating in the last 12 months
		Appropriate materials [A]				Other/No materials	DK/Missing	Total				
		Reusable	Not reusable	DK whether reusable/missing								
Total		66.2	30.2	0.1	3.5	0.0	1.0	96.5	96.7	93.9	58198	
Urban wealth index	Poorest	77.0	18.6	0.1	4.2	0.0	1.0	95.7	95.7	92.2	2447	
	Second	66.3	30.4	0.0	3.2	0.0	1.0	96.8	97.0	94.5	2685	
	Middle	60.3	37.4	0.0	2.2	0.0	1.0	97.8	96.6	94.9	2797	
	Fourth	38.7	60.0	0.0	1.3	0.0	1.0	98.7	97.7	96.7	2863	
	Richest	18.5	80.7	0.1	0.7	0.0	1.0	99.3	98.2	97.7	2951	
Rural wealth index	Poorest	82.1	11.9	0.3	5.6	0.0	1.0	94.3	95.0	90.3	7843	
	Second	80.9	14.7	0.2	4.3	0.0	1.0	95.7	96.4	93.0	8418	
	Middle	76.3	19.7	0.1	3.9	0.0	1.0	96.1	96.5	93.4	8892	
	Fourth	67.0	29.2	0.1	3.6	0.0	1.0	96.4	96.9	94.0	9471	
	Richest	52.0	45.5	0.1	2.4	0.0	1.0	97.6	97.9	95.9	9832	
Functional difficulties (age 18-49 years)	Has functional difficulty	72.1	19.4	0.6	7.8	0.2	1.0	92.0	93.5	86.2	1375	
	Has no functional difficulty	67.8	28.4	0.1	3.7	0.0	1.0	96.2	96.9	93.8	50160	
Currently using a method to avoid pregnancy	YES	71.2	24.4	0.1	4.3	0.0	1.0	95.7	96.8	93.3	30239	
	NO	66.4	29.4	0.1	4.1	0.0	1.0	95.9	96.7	93.4	12476	
	NO RESPONSE	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	14	
Wanted to get pregnant at the time	YES	63.7	34.6	0.1	1.6	0.0	1.0	98.4	97.0	96.0	1944	
	NO	73.3	24.4	0.0	2.3	0.0	1.0	97.7	96.8	95.2	679	
	NO RESPONSE	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	2	
Number of women 15-49 yrs in a household	1	70.4	25.7	0.1	3.8	0.0	1.0	96.2	96.9	93.7	34040	
	2-5	60.2	36.5	0.2	3.1	0.0	1.0	96.8	96.5	94.2	24013	
	5+	67.8	30.0	0.0	2.2	0.0	1.0	97.8	98.2	96.0	145	
Sex of household head	Male	66.5	29.8	0.1	3.6	0.0	1.0	96.4	96.7	93.8	51542	
	Female	63.6	33.6	0.1	2.7	0.0	1.0	97.3	96.9	94.7	6656	
Region	Barishal	65.5	30.6	0.0	3.7	0.1	1.0	96.1	94.7	91.5	3102	
	Chattogram	67.0	28.4	0.1	4.5	0.0	1.0	95.5	96.5	93.2	11445	
	Dhaka	57.5	39.0	0.0	3.5	0.0	1.0	96.5	98.1	95.2	14934	
	Khuina	61.5	36.5	0.1	1.9	0.0	1.0	98.1	97.9	96.3	6609	
	Mymensingh	72.4	22.0	0.7	4.8	0.1	1.0	95.1	92.5	88.6	3917	
	Rajshahi	71.7	26.5	0.1	1.7	0.0	1.0	98.3	98.3	96.9	7537	
	Rangpur	73.1	20.2	0.0	6.7	0.0	1.0	93.3	93.1	87.5	6359	
	Sylhet	76.2	23.0	0.2	0.5	0.0	1.0	99.5	98.4	98.1	4296	
	Age	15-19	53.6	45.2	0.1	1.0	0.0	1.0	98.9	96.5	96.0	11654
	15-17	52.9	46.1	0.2	0.8	0.0	1.0	99.1	96.4	96.0	6663	
	18-19	54.5	44.1	0.1	1.3	0.0	1.0	98.7	96.6	95.9	4991	
	20-24	59.1	39.3	0.1	1.5	0.0	1.0	98.5	97.2	96.1	9740	
	25-29	66.0	31.3	0.1	2.5	0.0	1.0	97.4	97.1	95.2	9371	
	30-39	73.2	22.2	0.1	4.4	0.0	1.0	95.5	96.8	93.0	18029	
	40-49	75.7	16.3	0.2	7.8	0.0	1.0	92.1	96.0	89.5	9403	
Education	Pre-primary or none	82.1	12.8	0.1	4.9	0.0	1.0	95.1	96.3	92.3	12866	
	Primary	66.3	31.1	0.1	2.5	0.0	1.0	97.4	96.9	94.9	26567	
	Secondary+	55.1	40.8	0.2	3.9	0.0	1.0	96.0	96.7	93.6	18765	
Currently married	YES, CURRENTLY MARRIED	69.6	26.2	0.1	4.1	0.0	1.0	95.9	96.8	93.4	45352	
	NO, NOT CURRENTLY MARRIED	53.9	44.3	0.2	1.5	0.0	1.0	98.5	96.5	95.6	12846	
Life satisfaction	Very happy / Somewhat happy	63.8	32.8	0.1	3.3	0.0	1.0	96.7	96.7	94.0	49462	
	Neither happy nor unhappy	79.8	15.9	0.1	4.2	0.0	1.0	95.8	97.7	94.1	6250	
	Somewhat unhappy / very unhappy	79.7	14.8	0.2	5.3	0.0	1.0	94.7	95.3	91.0	2466	
Ethnicity of household head	Bengali	66.3	30.2	0.1	3.4	0.0	1.0	96.6	96.8	94.1	57480	
	Other	55.7	29.4	0.0	14.9	0.0	1.0	85.1	90.5	78.8	718	
Education of household head	Pre-primary or none	72.8	23.2	0.1	3.9	0.0	1.0	96.1	96.7	93.5	15980	
	Primary	61.1	36.0	0.0	2.8	0.0	1.0	97.2	96.7	94.5	16780	
	Secondary+	65.2	30.9	0.2	3.7	0.0	1.0	96.3	96.7	93.8	26438	
	Missing/DK	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	30	
Age of household head	<18	(83.4)	(16.6)	(0)	(0)	(0)	(1)	(100)	(90.8)	(90.8)	35	
	18-34	68.6	28.5	0.1	2.7	0.0	1.0	97.3	96.7	94.5	11690	
	35-64	66.3	29.6	0.1	3.9	0.0	1.0	96.1	96.8	93.6	41309	
	65-84	59.4	38.5	0.2	1.9	0.0	1.0	98.0	96.4	95.0	4927	
	85+	60.0	38.1	0.0	1.9	0.0	1.0	98.1	98.7	96.9	237	

[1] MICS indicator WS.12 - Menstrual hygiene management

[A] Appropriate materials include sanitary pads, tampons or cloth

Table 5

Table 5: Exclusion from activities during menstruation
 Percentage of women age 15-49 years who did not participate in social activities, school, or work due to their last menstruation in the last 12 months, Bangladesh, 2019

		Percentage of women who did not participate in social activities, school or work due to their last menstruation in the last 12 months [1]	Number of women who reported menstruating in the last 12 months
Total		7,9	58198
Urban wealth index	Poorest	7,5	2447
	Second	7,8	2685
	Middle	5,8	2797
	Fourth	5,7	2863
	Richest	5,1	2951
Rural wealth index	Poorest	8,6	7843
	Second	7,6	8418
	Middle	8,1	8892
	Fourth	8,5	9471
	Richest	8,8	9832
Functional difficulties (age 18-49 years)	Has functional difficulty	11,0	1375
	Has no functional difficulty	7,5	50160
Currently using a method to avoid pregnancy	YES	7,1	30239
	NO	7,7	12476
	NO RESPONSE	(*)	12
Wanted to get pregnant at the time	YES	6,8	1944
	NO	10,0	679
	NO RESPONSE	(*)	2
Number of women 15-49 yrs in a household	1	7,0	34040
	2-5	9,1	24013
	5+	9,1	145
Sex of household head	Male	7,7	51542
	Female	9,4	6656
Region	Barishal	9,9	3102
	Chattogram	12,9	11445
	Dhaka	6,9	14934
	Khulna	5,6	6609
	Mymensingh	2,1	3917
	Rajshahi	3,5	7537
	Rangpur	3,6	6359
	Sylhet	19,0	4296
Age	15-19	9,7	11654
	15-17	10,3	6663
	18-19	9,0	4991
	20-24	8,1	9740
	25-29	7,6	9371
	30-39	7,2	18029
	40-49	6,9	9403
Education	Pre-primary or none	7,1	12866
	Primary	8,0	26567
	Secondary+	8,2	18765
Currently married	YES, CURRENTLY MARRIED	7,3	45352
	NO, NOT CURRENTLY MARRIED	10,0	12846
Life satisfaction	Very happy / Somewhat happy	7,8	49462
	Neither happy nor unhappy	6,8	6250
	Somewhat unhappy / very unhappy	11,3	2466
Ethnicity of household head	Bengali	7,9	57480
	Other	2,2	718
Education of household head	Pre-primary or none	7,8	15980
	Primary	7,7	15780
	Secondary+	8,0	26438
	Missing/DK	(*)	23
Age of household head	<18	(8.6)	35
	18-34	6,8	11690
	35-64	7,8	41309
	65-84	10,7	4927
	85+	10,9	237

[1] MICS indicator WS.13 - Exclusion from activities during menstruation

Appendix E: Extra Country-Specific Questions

- Type of material used
 - Bangladesh - UN18A - sanitary napkin, cotton pad, tissue, cloth
 - Madagascar - UN19AA-ANR - disposable sanitary napkins, tampons, tissues, hygienic tissues or napkins, menstrual cup, toilet paper, undergarments only, others
 - Zimbabwe - UN19A - sanitary pads, tampons, cotton wool, cloth, menstrual cup, tissue paper, cow dung, paper, leaves/grass/cobs, other, nothing
- Reason for exclusion from activities
 - Mongolia – UN16A – main reason to refrain from attending school or going to work, or any social activities
 - Feeling unwell or in pain
 - Heavy bleeding
 - Poor sanitation facilities
 - Fear of degrading treatment

For information on the report, please contact:

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