

# Menstrual Health and Hygiene in low- and middle-income countries: A Comprehensive Review

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## Abstract

Menstrual health and hygiene (MHH) are fundamental for the well-being, education, and empowerment of individuals who menstruate, yet they face significant challenges in middle and low-income countries (LMICs). This review examines the barriers and advancements in MHH over the past seven years. Understanding MHH involves managing menstruation with dignity through access to accurate information, appropriate menstrual products, and adequate sanitation facilities. Challenges include cultural taboos perpetuating stigma and misinformation, economic constraints limiting access to affordable products, inadequate education resulting in poor hygiene practices, and insufficient sanitation facilities in schools and public spaces. Efforts to address these challenges have seen policy advancements such as providing free menstrual products in schools and public spaces, advocacy to destigmatize menstruation globally, and innovations in sustainable menstrual products and technology. Community-based interventions have proven effective by promoting education, distributing menstrual products, and fostering supportive networks. Case studies highlight successes, including Scotland's provision of free menstrual products, Kenya's abolition of taxes on sanitary products, and India's national guidelines on menstrual hygiene management. These initiatives underscore the importance of multi-sectoral approaches involving education, policy change, and community engagement to achieve gender equality and empower individuals to manage their menstruation with dignity.

## INTRODUCTION

Menstrual health and hygiene (MHH) are critical components of women's overall health and well-being, yet they remain significantly neglected in many parts of the world. Inadequate MHH can lead to a range of physical, social, and psychological issues, affecting women's health, educational attainment, and economic productivity.<sup>1,4,18</sup>

One of the primary challenges to effective MHH in LMICs is the prevalence of cultural taboos and stigmas surrounding menstruation. For example, in India, menstruating women are usually prohibited from entering temples, participating in religious ceremonies, and even cooking or touching certain foods.<sup>1,4,7,19</sup>

Lack of education and awareness about menstruation further exacerbates the problem. A study by UNICEF found that nearly 50% of girls in Iran, India, and other countries did not know about menstruation until they experienced it themselves. Poor menstrual health and hygiene practices are linked with a lack of knowledge about products and materials (e.g., old clothes, leaves, or ash) that increase the risk of infections and other health issues.<sup>2,4,7</sup>

The availability and accessibility of menstrual health and hygiene products and appropriate infrastructure are other significant barriers to effective MHH in LMICs. A report by WaterAid highlighted that in rural India, 70% of women could not afford sanitary pads. Furthermore, many schools and public places lack the necessary facilities for girls to manage their

menstruation discreetly and hygienically impacted the school attendance and work.<sup>4,8,15</sup>

Efforts to improve menstrual health in LMICs, particularly in India, have been increasing in recent years. For instance, the Indian government's Menstrual Hygiene Scheme aims to increase awareness and accessibility of hygienic products among adolescent girls in rural areas. NGOs like Goonj and initiatives such as the "Menstrual Hygiene Management National Guidelines" by the Ministry of Drinking Water and Sanitation are also crucial in addressing menstrual health challenges in India.<sup>5,11,14</sup>

## Cultural Influences on Menstrual Health and Hygiene South Asia

In South Asia, cultural taboos and misconceptions about menstruation are pervasive and deeply rooted in traditional beliefs. In India and Nepal, menstruating women are often deemed impure, leading to various restrictive practices that impact their daily lives. These restrictions include seclusion from family members, prohibition from participating in religious ceremonies, and exclusion from kitchen activities. Such practices are not only discriminatory but also greatly impact the physical and psycho-social well-being of women and girls of reproductive age groups.<sup>4,8</sup>

A study conducted in India found that 71% of girls reported being unaware of menstruation until they experienced their first period, leading to feelings of fear and shame. The stigma associated with menstruation can also result in social isolation and decreased self-esteem. In Nepal, the practice of Chhaupadi,

where menstruating women are banished to small huts or cattle sheds, has severe health and safety implications, including exposure to extreme weather, animal attacks, and even death. Although the Supreme Court of Nepal criminalized Chhaupadi in 2005, the practice persists in some rural areas due to strong cultural beliefs.<sup>10,14</sup>

Educational opportunities are also affected by menstrual taboos. Many girls miss school during their periods due to a lack of proper facilities and the stigma surrounding menstruation. According to a study by WaterAid, 1 in 3 girls in South Asia miss school during their periods, leading to gaps in education and decreased academic performance. The societal silence around menstruation further perpetuates misinformation and hinders the dissemination of accurate knowledge about menstrual health and hygiene.<sup>4,8,15</sup>

#### **Sub-Saharan Africa**

In Sub-Saharan Africa, cultural beliefs and practices surrounding menstruation vary widely across different communities. In some cultures, menstruation is celebrated as a joyous rite of passage into womanhood, with rituals and ceremonies acknowledging this critical stage in a girl's life. However, in many other communities, menstruation is associated with stigma and shame, which restricts open discussion and education about menstrual health.<sup>1,5,12</sup>

The stigma around menstruation in Sub-Saharan Africa often leads to poor menstrual hygiene practices. The accessibility to sanitary products may be limited to many women and girls of reproductive age groups in addition to clean water, forcing them to use unsafe alternatives such as old rags, leaves, or newspapers. These practices increase the risk of infections and other health complications. A study conducted in Kenya found that nearly half of the schoolgirls interviewed had not discussed menstruation with anyone before their first period, leading to feelings of confusion and fear.<sup>5,9,12</sup>

School absenteeism due to menstruation is a significant issue in Sub-Saharan Africa. Girls often stay home during their periods because of inadequate sanitary facilities at schools, fear of leakage, and the stigma attached to menstruation. Research indicates that girls in Kenya miss an average of four days of school each month due to menstrual-related issues, significantly impacting their educational outcomes. Efforts to provide menstrual education and improve access to sanitary products are crucial in addressing these challenges and promoting better menstrual health practices in the region.<sup>1,12</sup>

#### **Middle East and North Africa (MENA)**

The Middle East and North Africa (MENA) region also grapples with significant cultural taboos around menstruation. In countries like Iran and Egypt, menstruating women face social restrictions that limit their participation in religious and social activities. For instance, menstruating women are often prohibited from fasting during Ramadan, entering mosques, or participating in communal prayers. These restrictions, based on religious interpretations and cultural practices, contribute to the marginalization of menstruating women.<sup>4,11</sup>

Access to accurate information about menstrual health is limited in the MENA region. Many girls and women lack basic knowledge about menstruation and its management, leading to misconceptions and unhealthy practices. A study in Iran revealed that 48% of girls had poor knowledge about menstruation, which was associated with increased anxiety and lower self-esteem during their menstrual periods. The cultural silence around menstruation prevents open dialogue, making it difficult for women and girls to seek information and support.<sup>11,13</sup>

These cultural barriers often hinder efforts to improve menstrual health and hygiene in the MENA region. However, some initiatives aim to break the silence and promote menstrual education. For example, organizations like UNICEF and local NGOs are working to integrate menstrual health education into school curricula and community programs. These efforts aim to challenge taboos, provide accurate information, and ensure that women and girls can manage their menstruation with dignity and confidence.<sup>13,16</sup>

#### **Menstrual Health and Hygiene Products**

#### **Disposable Sanitary Pads**

Disposable sanitary pads are one of the most common menstrual products used globally, particularly in high-income countries where they are widely available. The ease of convenience of disposable sanitary pads is the first choice among women of reproductive age. The availability of sanitary pads is increasing in every country, especially in urban areas, and they are disposable, although access remains uneven.<sup>1,2</sup> In countries like India, the preference for disposable sanitary pads has grown, driven by increased awareness and availability. However, the high cost of these products remains a barrier for many women and girls. A study by WaterAid found that affordability is a significant issue, with many women unable to purchase disposable pads regularly. Moreover, the environmental impact of disposable pads is substantial, as they contribute to waste accumulation and are often not biodegradable. This ecological concern has prompted a search for more sustainable alternatives.<sup>1,3</sup>

#### **Tampons**

Tampons are another widely used menstrual product, especially prevalent in high-income countries due to their convenience and discreet nature. Tampons allow women to engage in various physical activities without worrying about visible menstrual products. However, their use is less common in many LMICs due to cultural taboos and misconceptions about their impact on virginity. These cultural beliefs significantly limit the acceptance and usage of tampons in certain societies.<sup>5</sup>

Additionally, tampons tend to be more expensive than sanitary pads, making them less accessible to low-income women. In the United States, approximately 70% of menstruating women use tampons. In contrast, in countries like India and Kenya, their usage is significantly lower due to economic and cultural barriers.<sup>4</sup>

#### **Menstrual Cups**

The alternative to disposable sanitary pads is menstrual cups, sustainable menstrual hygiene products. Made from medical-grade silicone, rubber, or latex, the menstrual cup's durability lasts several years with proper care. The menstrual cups are a collector of menstrual blood and are placed in the vagina of the female reproductive system. Their cost-effectiveness and environmental benefits make them an attractive option. However, menstrual cups are less commonly used in LMICs, primarily due to a lack of awareness, cultural resistance, and initial cost barriers.<sup>1,3,11</sup>

Education and proper support are crucial for the successful adoption of menstrual cups. Studies have shown that with adequate information and training, menstrual cups can be viable even in resource-limited settings. For instance, a study conducted in Kenya found that girls using menstrual cups had fewer reproductive tract infections compared to those using traditional menstrual products. This finding suggests that menstrual cups provide a sustainable solution and offer health benefits over conventional methods.<sup>4,5,9</sup>

#### **Reusable Cloth Pads**

A sustainable product gaining more popularity in recent years is reusable cloth pads, a cost-effective alternative to disposable products. These washable pads can last several years, making them a practical option for women and girls, especially in LMICs. Using reusable cloth pads addresses economic and environmental concerns, providing an affordable and sustainable solution to menstrual hygiene management.<sup>2,9,13</sup>

NGOs and social enterprises actively promote reusable cloth pads in many parts of Africa and Asia. For example, organizations like AFRIPads manufacture and distribute affordable reusable pads to women and girls in rural areas in Uganda. These initiatives improve access to menstrual products and empower women by providing them with reliable and sustainable options for menstrual hygiene management.<sup>9,18</sup>

#### **Barriers and Challenges of Menstrual Health and Hygiene Around the Globe**

Menstrual health and hygiene (MHH) remains a significant challenge around the world with a specification to low- and middle-income countries (LMICs). Various economic, cultural, infrastructural, and educational barriers hinder effective

menstrual hygiene management (MHM). This section elaborates on these barriers and their global impact on women and girls.

#### **Economic Barriers**

Economic barriers are one of the primary challenges in accessing menstrual health and hygiene products. In many LMICs, the high cost of commercial sanitary products is prohibitive for a significant portion of the population. Women and girls in these regions often resort to using unsafe alternatives, such as rags, leaves, or newspapers, which can lead to infections and other health complications.<sup>2</sup>

A study conducted in Uganda found that 90% of schoolgirls surveyed could not afford commercial sanitary pads, leading to school absenteeism and dropout rates. Similarly, in India, a survey by WaterAid revealed that 70% of women could not afford sanitary products, resulting in poor menstrual hygiene practices.<sup>1, 5</sup>

#### **Cultural and Social Barriers**

Cultural taboos and stigmas surrounding menstruation are prevalent worldwide, particularly in LMICs. These cultural norms often dictate that menstruation is a private matter, shrouded in secrecy and shame. This stigma prevents open discussion about menstruation, leading to misinformation and perpetuating myths about menstrual health.

Cultural constraints like impurities associated with menstruation are subject to various restrictions. In Nepal, the practice of Chhaupadi, where menstruating women are forced to live in isolation, continues despite being banned by the Supreme Court. This practice impacts women's health, dignity, and safety.<sup>2, 5, 9</sup> In some parts of Sub-Saharan Africa, cultural beliefs limit the use of certain menstrual products. For example, tampons are often avoided due to the misconception that they can affect a girl's virginity. These cultural barriers prevent women and girls from accessing and using appropriate menstrual products, contributing to poor menstrual health outcomes.<sup>7, 13, 16</sup>

#### **Infrastructural Barriers**

Inadequate sanitation facilities are a significant infrastructural barrier to effective menstrual hygiene management. In many rural areas and urban slums, there is limited access to clean water, private toilets, and facilities for disposing of menstrual waste. The availability of adequate infrastructure is a significant challenge for women in the reproductive age group to manage their menstrual health with proper hygiene and dignity.<sup>4, 8</sup>

A study in Ethiopia found that only 37% of schools had facilities that allowed girls to manage their menstruation privately and hygienically. The absence of such facilities leads to increased school absenteeism and dropout rates among girls during their menstrual periods. Similarly, in India, a survey by WaterAid reported that 63% of schools did not have adequate sanitation facilities, which impacted girls' education and attendance.<sup>5, 11, 16</sup>

#### **Educational Barriers**

Lack of education about menstrual health is another critical barrier. Many girls and women, particularly in LMICs, lack basic knowledge about menstruation and how to manage it effectively. This lack of education leads to fear, confusion, and the perpetuation of harmful practices and myths.<sup>2</sup>

In many regions, menstrual health education is either absent or inadequate in school curricula. A study conducted in Kenya found that nearly 50% of schoolgirls had not discussed menstruation with anyone before their first period, leading to feelings of fear and shame. In India, the National Family Health Survey revealed that 71% of girls were unaware of menstruation until they experienced their first period, resulting in anxiety and stress.<sup>4</sup>

Efforts to improve menstrual health education are crucial menstrual practices. Integrating comprehensive menstrual health education into school curricula and community programs can empower women and girls with the knowledge they need to manage their menstruation safely and confidently.<sup>3, 4</sup>

#### **Health Risks**

Poor menstrual hygiene practices can lead to significant health risks, including infections, reproductive tract diseases, and increased vulnerability to urinary and reproductive tract infections. The use of unsafe and unhygienic menstrual products exacerbates these risks.<sup>3, 8</sup>

A study in Bangladesh found that 73% of women reported experiencing infections due to poor menstrual hygiene practices. In Kenya, girls using traditional menstrual products such as rags were found to have higher rates of reproductive tract infections compared to those using menstrual cups. Different research findings indicate that a significant health risk associated with menstrual hygiene can be addressed by improved access to safe, hygienic menstrual products and practices.<sup>2, 4</sup>

#### **Government and Non-Governmental Initiatives on Menstrual Health and Hygiene Around the World**

Efforts to improve menstrual health and hygiene (MHH) globally are driven by government policies and non-governmental organization (NGO) initiatives. These efforts aim to address the barriers and challenges associated with menstrual hygiene management (MHM), promoting better health, education, and social outcomes for women and girls.<sup>5, 8</sup>

##### **Government Initiatives**

###### **Scotland's Free Sanitary Products Policy**

Scotland made headlines in 2020 by becoming the first country in the world to provide free sanitary products to all women and girls. This landmark legislation aims to combat period poverty and ensure that menstrual products are accessible to everyone, regardless of their financial situation. The Scottish government distributes these products in schools, colleges, universities, and other public buildings, ensuring widespread availability.<sup>4</sup>

###### **Kenya's Free Sanitary Pad Program**

In 2004, Kenya abolished the tax on sanitary pads, making them more affordable for women and girls. In 2011, the Kenyan government introduced a program to provide free sanitary pads to school girls to reduce absenteeism and dropout rates due to menstruation. This initiative has positively impacted girls' education, allowing them to attend school consistently and participate fully in academic activities.<sup>9</sup>

###### **India's Menstrual Hygiene Scheme**

The Indian government launched the Menstrual Hygiene Scheme in 2011, targeting adolescent girls in rural areas. The scheme provides subsidized sanitary pads and promotes menstrual health education through schools and community health workers. The initiative also includes training teachers and health workers to disseminate accurate information about menstrual hygiene. This program aims to break the silence around menstruation and empower girls with adequate knowledge and needed resources to maintain menstrual health and hygiene safely.<sup>10, 21</sup>

###### **Uganda's National Menstrual Hygiene Management Policy**

In 2015, Uganda developed a National Menstrual Hygiene Management Policy to address the challenges women and girls face regarding menstrual health. The policy focuses on increasing access to affordable menstrual products, improving sanitation facilities, and integrating menstrual health education into the school curriculum. The Ugandan government collaborates with NGOs and private sector partners to implement this policy and ensure its success.<sup>20</sup>

##### **Non-Governmental Organization Initiatives**

###### **Days for Girls**

Days for Girls is an international NGO that works to improve menstrual health and hygiene for women and girls in over 144 countries. The organization provides sustainable menstrual products, such as reusable pads, and conducts menstrual health education workshops. Days for Girls aims to break the stigma associated with menstruation and empower girls and women to manage their periods with dignity. Their holistic approach includes training local women to produce and distribute reusable pads, creating economic opportunities, and fostering community engagement.<sup>17</sup>

###### **WASH United**

WASH United is a global advocacy organization focusing on water, sanitation, and hygiene (WASH) issues, including menstrual health. The organization runs the Menstrual Hygiene Day campaign, celebrated annually on May 28, to raise awareness and promote action on menstrual health and hygiene. WASH United collaborates with governments, NGOs, and private sector partners to implement educational programs, improve sanitation facilities, and advocate for policy changes that support menstrual health.<sup>19</sup>

## AFRipads

AFRipads is a social enterprise based in Uganda that manufactures and distributes reusable cloth menstrual pads. The organization aims to provide a sustainable and affordable solution to menstrual health challenges in Africa. AFRipads partners with NGOs, governments, and community organizations to distribute their products and provide menstrual health education. Their approach addresses the immediate needs of menstrual hygiene management and promotes environmental sustainability and economic empowerment.<sup>16</sup>

## Sustainable Health Enterprises (SHE)

Sustainable Health Enterprises (SHE) is a social enterprise that focuses on producing affordable, eco-friendly sanitary pads using local materials. SHE manufactures pads from banana fibers in Rwanda, providing a sustainable alternative to commercial sanitary products. The organization also engages in advocacy and education efforts to promote menstrual health and break cultural barriers. SHE's model creates employment opportunities for local women and contributes to the economic development of the communities they serve.<sup>18</sup>

## DISCUSSION

Menstrual health and hygiene are critical aspects of public health, particularly in low- and middle-income countries (LMICs), where cultural taboos, limited education, and inadequate resources create significant barriers. Despite these challenges, growing efforts by governments, NGOs, and other stakeholders are paving the way for positive change. Key interventions include improving access to affordable menstrual products, enhancing sanitation infrastructure, and increasing awareness through education and advocacy campaigns.

The availability of menstrual products varies significantly, with disposable pads and tampons being predominant in high-income countries, while sustainable options like menstrual cups and reusable cloth pads are gaining popularity in LMICs. However, economic constraints often limit access to these products. Initiatives to promote affordability and accessibility are crucial to ensuring that menstruating individuals can manage their cycles with dignity. For instance, countries like Kenya and India have launched programs to provide free or subsidized menstrual products to schoolgirls, reducing absenteeism and stigma.

Cultural taboos and misinformation further hinder progress, emphasizing the need for community engagement and education. Programs that involve men and boys in menstrual health discussions help break stereotypes and foster supportive environments. Additionally, policy interventions addressing sanitation facilities in schools and public spaces are essential for managing menstruation safely and confidently.

By addressing these challenges through a multifaceted approach—combining policy, education, and resource provision—countries can promote better menstrual health outcomes. Such efforts not only enhance the quality of life for millions of women and girls but also contribute to broader goals of gender equity and social empowerment.

## CONCLUSION

Menstrual health and hygiene are critical yet often overlooked issues, especially in low- and middle-income countries (LMICs). Economic constraints, cultural taboos, lack of education, and inadequate infrastructure create significant barriers, preventing women and girls from managing menstruation safely and with dignity. The availability and use of menstrual products vary globally, with reusable alternatives like menstrual cups and cloth pads gaining attention for their sustainability.

Efforts to address these challenges require a multifaceted approach involving government and non-governmental initiatives. Policies promoting access to affordable menstrual products, improved sanitation facilities, and comprehensive menstrual health education are essential. Community engagement and awareness campaigns also play a pivotal role in breaking taboos and fostering understanding.

By addressing these barriers, stakeholders can enhance menstrual health outcomes, promote dignity, and improve the quality of life for millions of women and girls worldwide.

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