Outlook on reproductive health

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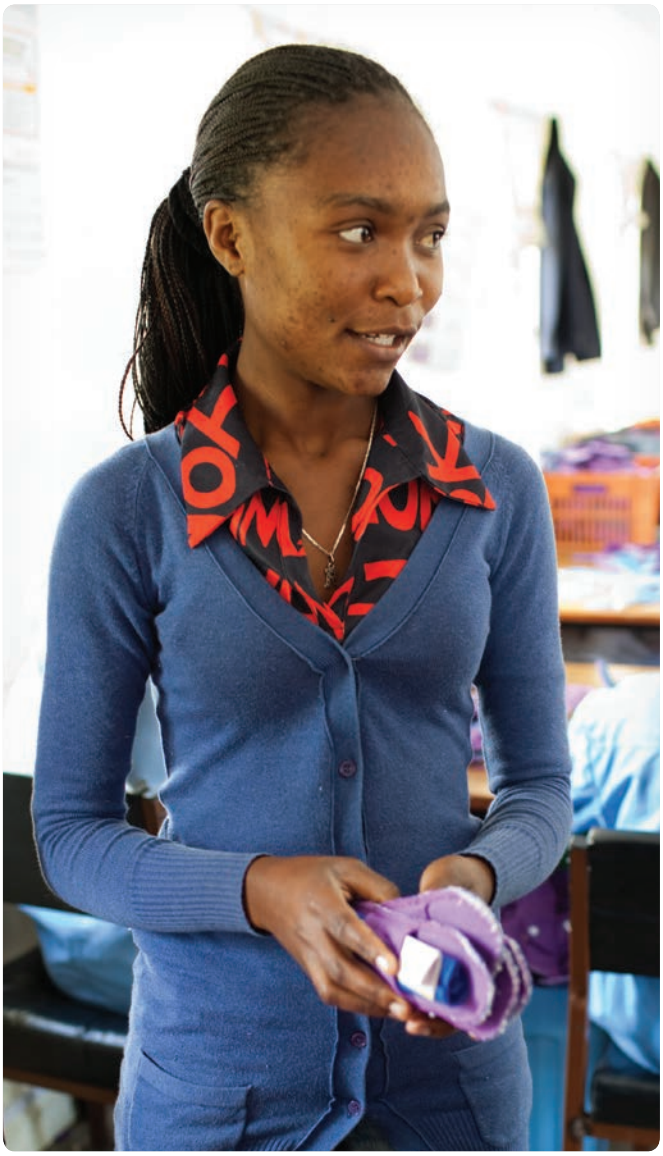
Girls' and women's right to menstrual health: Evidence and opportunities



PATH/Eric Becker

Menstruation is a natural and regular occurrence experienced by nearly all women of reproductive age. The average woman will have about 450 menstrual cycles over approximately 38 years of her life; this translates to managing menstruation for roughly 6.25 years.[1,2]

The ability to manage one's menstrual health with adequate knowledge, safety, and dignity and without stigma is an essential human right.[3] However, hundreds of millions of girls and women in low-resource settings are not well prepared when menstruation begins. They lack access to information, products, and infrastructure needed to comfortably manage menstruation. Girls' and women's health, well-being, and rights are compromised when they must isolate themselves from their families; avoid work, community activities, or school; and face risks to their physical safety because of their basic biology.[4] Adolescent girls are especially vulnerable to negative outcomes related to menstruation, including effects on their overall self-esteem and confidence.

This issue of *Outlook* establishes menstrual health as a sexual and reproductive health and rights issue; presents the obstacles to and the consequences of not promoting and protecting menstrual health; and highlights opportunities to improve menstrual health in low-resource settings.

MENSTRUATION: HEALTH, RIGHTS, AND BEYOND

The Programme of Action from the 1994 International Conference on Population and Development defines sexual and reproductive health as "...a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes."[5] Menstruation, a key function of the reproductive system, is fundamental to sexual and reproductive health and rights (see box on page 2 for a description of menstrual health).

INSIDE

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What is menstrual health?

Most efforts to address menstruation in low-resource settings use the term menstrual hygiene management (MHM). The United Nations Children's Foundation (UNICEF) and the World Health Organization define a state of "good" MHM when girls and women use clean material to absorb or collect menstrual blood; can change this material in privacy; and have access to soap, water, and disposal facilities for used materials (e.g., sanitary pads).[6] The United Nations Educational, Scientific and Cultural Organization (UNESCO) goes further and summarizes systemic factors that facilitate healthy menstrual management:[7]

- Accurate and timely knowledge
- Available, safe, and affordable materials
- Informed and comfortable professionals
- Referral and access to health services
- Sanitation and washing facilities
- Positive social norms
- Safe and hygienic disposal
- Advocacy and policy

This issue of *Outlook* uses the term "menstrual health" to encompass both the MHM practices and the broader systemic factors that link menstruation with health, well-being, gender, education, equity, empowerment, and rights.

The right to information about sexual and reproductive health presents an ideal opportunity for strengthening linkages with menstrual health, especially for adolescents. Preparing adolescent girls for menarche—the initial onset of menstruation—can set an important foundation for overall reproductive health and well-being. Globally, there are 1.8 billion young people between the ages of 10 and 24 years old.[8] Adolescents in many countries often lack basic knowledge about puberty and reproductive physiology, not to mention comprehensive information about sexuality. As a result, many young girls are uninformed or misinformed about menstruation before puberty and are alarmed at menarche.[9-17] Research in five African countries found that, on average, 66 percent of respondents were unaware of menstruation before they experienced menarche.[18]

Improving girls' and boys' access to quality education on puberty and menstrual health provides opportunities to discuss other aspects of sexual and reproductive health (including contraception). Life skills education can take place over time and at appropriate ages with adolescents, as well as their parents or caregivers.[17,19] Discussions with young adolescents can address puberty, fertility, gender, hygiene, safety, and communication (see the Grow and Know and the GrowUp Smart programs for two strong examples).

Menstrual health is also closely linked to sectors beyond health, including water, sanitation, and hygiene (WASH), as well as education.[20] Menstrual health crosscuts a number of the Sustainable Development Goals (SDGs; see box on page 3), and achieving the SDGs will require cooperative action and integrated programs.[21] Coordinated interventions may present ideal opportunities to test development models that include attention to menstrual health.

OBSTACLES TO ATTAINING MENSTRUAL HEALTH

Cultural taboos and restrictions

In many countries and cultures, menstruation is a taboo subject that is rarely discussed. As a result, girls and women experience shame and fear that interfere with their ability to manage menstrual health and can impact their overall well-being.[7,12,22-24] The barriers discussed here do not exist in all low-resource settings, of course. In some places, menstruation is considered a time of cleansing and menarche is celebrated.[12,25]

Many cultures consider menstrual blood and menstruating females to be dirty and impure,[12,18,22,25] which leads girls and women to be embarrassed about menstruation. This seems particularly true for adolescent girls, negatively affecting their self-esteem and their outlook on puberty and growing up.[11,14,18,26] In addition, some norms require girls and women to alter daily routines while menstruating. For example, women in India and Nepal may be required to avoid cooking, religious practices, bathing, and sexual intercourse while menstruating.[9,12,22]

Limited access to information and supplies

Materials and supplies enable girls and women to manage menstrual blood. In many low-resource settings, girls and women cannot access or afford commercial menstrual management supplies such as disposable or reusable sanitary pads, tampons, or menstrual cups.*

* Menstrual cups are reusable, flexible devices inserted into the vagina to collect menstrual blood. Women empty the cup as needed, usually after 4 to 12 hours.

Disposable sanitary pads are widely preferred to traditional cloth—the more common management method.[12,18,22,24,26,27] More than 70 percent of girls interviewed for a five-country study in sub-Saharan Africa stated that cost was the primary reason they were not using commercial sanitary products (e.g., USD $1 to $2 for a pack of disposable sanitary pads).[18] Some girls and women lack access to clean cloth and have to adapt less clean cloth or other materials for absorbing menstrual blood, including grass, leaves, cotton wool, and tissue.[4,9,12,18] Leakage and odor are more likely with products not designed for menstrual blood absorption.

Commercial menstrual health supplies are made more expensive by import and sales taxes, effectively taxing women for their physiology.[25] In 2011, Kenya eliminated import taxes on menstrual products, reducing costs by about 18 percent.[28] These products may also be considered an unnecessary expense at the policy, community, or household level, particularly when finances are limited and/or controlled by men.[13,15,22]

Lack of infrastructure

In many low-resource settings, girls and women lack access to appropriate infrastructure and systems to support menstrual health. When menstrual cloths are used they are often cleaned and reused. Ideally, used cloths would be washed with soap and clean water and then dried and aerated in the sun. However, girls and women will often attempt to dry cloths in hidden spaces, which may not allow them to fully dry and may facilitate growth of harmful bacteria.[12,14,16] Moreover, many girls and women do not have access to soap and water, particularly if they aim to clean their supplies in secret.[12,14]

Lack of infrastructure is particularly challenging for girls in school who must manage menstruation during the school day. In a 2014 manual, UNESCO states that menstrual health requires comprehensive puberty education, menstrual management materials, safe and private latrines, water and soap, and adequate disposal options.[7] Unfortunately, many schools in low-resource settings do not have such supportive environments.[10,18,29] Research indicates few schools have separate latrines for girls, with doors and locks, clean water sources close by that also have soap, a mechanism to privately dispose of sanitary materials, and supplies on hand to keep latrines clean.[18,26,29] For example, an assessment of 62 primary schools in rural Kenya found that only 23 percent of latrines had locks on the doors.[29] Furthermore, schools rarely have sanitary products available, and if they do, it is often through small-scale and unsustainable donations.[18,29]

Many challenges found in schools also are relevant to girls out of school and women in the workplace. For example, a needs assessment in Bangladesh found that female factory workers used contraceptive pills to avoid menstruating so they would not need to manage menstruation in the factory's inadequate toilet facilities.[30]

NEGATIVE OUTCOMES: WHAT DO WE KNOW?

Research on menstrual health is limited and of inconsistent quality, making it difficult to draw clear conclusions (see Table 1 on page 4 for an overview).

Menstrual health and the Sustainable Development Goals (SDGs)

While not mentioned explicitly in the 2030 Agenda for Sustainable Development, menstrual health is relevant to at least 5 of the 17 SDGs and multiple targets, including:

Goal 3: Ensure healthy lives and promote well-being at all ages.

- Target 3.7: By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

- Target 4.a: Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.

Goal 5: Achieve gender equality and empower all women and girls.

- Target 5.1: End all forms of discrimination against all women and girls everywhere.

Goal 6: Ensure availability and sustainable management of water and sanitation for all.

- Target 6.2: By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all.

For more information on the SDGs, visit www.un.org/sustainabledevelopment/sustainable-development-goals/.

Menstrual health and sexual and reproductive health

Links to infection

Some research has linked poor menstrual health to reproductive tract infections (RTIs),** with the most recent evidence identifying a link between reusable menstrual cloths and RTIs, specifically bacterial vaginosis (BV) and urinary tract infections (UTIs).[31] Menstrual health practices that may transmit bacteria to the reproductive tract and contribute to infections include use of improperly washed and dried cloths; use of absorbent alternatives (e.g., grass or tissue); extended use of absorbent material; and poor general hygiene due to limited access to soap and water.[13,23] If left untreated, some RTIs can lead to increased susceptibility to HIV and other STIs, which can in turn lead to secondary infertility and/or adverse pregnancy outcomes.[13,23]

A rigorous 2015 study in Odisha, India, found strong associations between reusable menstrual cloths and self-reported RTI symptoms among women.[31] This study used case-control methodology and lab-confirmed diagnosis, and it controlled for a number of potential confounding factors such as income, religion, and water and sanitation in the home. The researchers concluded that women using reusable cloths were significantly more likely to self-report symptoms of urogenital infection (e.g., abnormal vaginal discharge, burning or itching while urinating) than women using disposable products. Furthermore, women using reusable cloths were also more likely to be diagnosed with either BV or UTIs.

This study also highlighted the influence of socioeconomic and contextual factors on reproductive health outcomes. The authors found that women with the ability to change absorbent materials privately indoors and those with higher incomes were less likely to have BV.[31] Women with limited education were three times more likely than higher-educated women to have a UTI.

Although this recent study suggests a link between menstrual management and RTIs, other evidence is inconclusive. A 2013 review of published evidence on correlations between menstrual health and reproductive health outcomes concluded that "...there is an initial indication that [poor menstrual health] may be associated with an increased risk of RTI but the strength and route of infection is not known."[23] The majority of the 14 studies reviewed found an association between poor menstrual management—primarily the use of unsanitary absorbent material—and RTIs; however, the research included limited control for confounding factors and relied on self-reported and observational data.

Links to high-risk sexual behavior?

The fact that some adolescent girls and women engage in transactional sex to obtain money for basic living expenses is well understood. Evidence from Kenya, South Sudan, Tanzania, and Uganda indicates that some adolescent girls may specifically engage in transactional sex to obtain commercial sanitary products.[4,14,18,24,26] Research among 2,721 sexually active menstruating women under 30 years of age in rural Kenya found that, while overall prevalence of reported transactional sex for commercial sanitary pads was only 1.3 percent, it was much higher among adolescent girls, with 10 percent of sexually active 15-year-old girls confirming

** This issue of *Outlook* refers specifically to endogenous reproductive tract infections caused by overgrowth of organisms normally present in the genital tracts of healthy women, such as bacterial vaginosis or vulvovaginal candidiasis.

Table 1. **Outcomes: What do we know about menstrual health and...**

...sexual and reproductive health?	• Use of reusable menstrual cloths or absorbent alternatives may increase women's risk of reproductive tract infections (RTIs), although that link needs to be further confirmed. • Evidence suggests some young girls in East Africa are engaging in transactional sex in exchange for money for commercial sanitary products.
...education?	• Some girls miss school due to menstruation, but the association is very complex to study. There is limited evidence consistently linking menstruation to educational outcomes. • Interventions that focus on health and puberty more broadly, rather than those focused more narrowly on menstrual product availability, may be more or equally likely to improve girls' school attendance and participation.
...gender-based violence?	• Girls and women are more vulnerable to violence when they have limited access to WASH facilities; this exposure is increased when menstruating.

this practice.[4] Transactional sex, even if relatively infrequent, places adolescent girls at significant risk of HIV, other STIs, and pregnancy, underscoring the inequities and vulnerabilities faced by girls and women.

Menstrual health and education

Research suggests that menstrual health challenges can lead girls to stay home from school while menstruating. The precise impact of menstruation on girls' school attendance and other educational outcomes, however, is less clear. Studies have identified several possible reasons for absences: lack of sanitary supplies, pain associated with menstruation, lack of appropriate sanitation and hygiene facilities in the school, and fear or shame.[11,14,16,18] It is also not clear how absenteeism due to menstruation compares with girls' absence or withdrawal from school for other reasons.

International institutions consider that menstruation does impact school attendance. Data from UNICEF indicate that one out of ten school-age girls in Africa are absent from school when menstruating.[32] Specific studies have produced a wide range of results, however. A survey of five African countries found that, on average, 49 percent of girls interviewed missed four days of school each month while menstruating.[18] Conversely, research in Malawi concluded that menstruation and menstrual health–related barriers played a limited role in school absenteeism for girls.[33,34] Others have noted that the latter evidence was based on data from girls ages 14 to 16 years, potentially excluding girls who had already left school by that age.[35]

Researchers in Ghana and Nepal tried to explore this link more closely by assessing whether provision of menstrual management materials impacted girls' school attendance, and their findings underscore the complexity of this potential association. Researchers in Ghana assigned girls to receive either puberty education alone or puberty education plus disposable sanitary pads.[36] While it took slightly longer for the education-only group, girls in both intervention groups saw significant and similar improvements in school attendance (approximately 9 percent increase) by five months. These findings indicate that provision of commercial sanitary pads with puberty education may improve school attendance at a faster rate, but that puberty education alone has a positive influence on attendance in the communities studied. The assessment in Nepal found that the provision of menstrual cups had limited impact on school attendance, although school attendance rates in the study sites were already relatively high.[27] While self-reported adoption of the menstrual cup was fairly good in the treatment group, the effect on school attendance was minimal—menstrual cup use improved school attendance by 0.5 days of school per year at most. The study found that many other menstrual factors had an effect on girls' school attendance, including cramps, tiredness, having to change and wash clothes, and difficulty walking and sitting. The authors noted that low-cost schooling and overall health improvements might have a larger impact on girls' attendance. Researchers concluded that the primary impact of menstrual cup provision was on convenience and ease of managing menstrual blood, as opposed to improving attendance. The Ghana and Nepal studies used very small sample sizes, however, so these findings may not be representative of larger trends.

Stigma and shame associated with menstruation in many cultures can also affect girls' well-being and performance in school, even when they do attend. Concerns about leakage affect girls' ability to concentrate and participate in the classroom and may discourage them from attending school altogether when menstruating, limiting their school attendance and education outcomes.[13,14,18,24,36] For example, studies in Kenya found that girls were unable to focus on the teacher because they were concerned about blood leaking on their clothes[24] and, similarly, were afraid of standing up to answer questions in case blood had seeped onto their uniforms.[14]

Menstrual health and gender-based violence

It is well documented that girls and women are highly vulnerable to gender-based violence, including harassment, physical assault, and/or rape; this vulnerability is exacerbated by limited access to WASH facilities.[37] A 2015 literature review noted girls' and women's experiences of rape when using toilets, taking a bath, or collecting water, as well as when they leave their communities at night to defecate in private—a common sociocultural norm.[37] It follows that girls and women are at increased risk of gender-based violence while menstruating, due to the need for increased access to WASH facilities, desire to hide evidence of menstruation, and lack of sanitation in homes. For example, Dalit women in India have reported facing sexual harassment when using communal latrines.[37,38]

Risk of gender-based violence during menstruation may be particularly high for adolescent girls, who experience sexually threatening behavior from their male classmates and teachers, as well as from family members and family friends.[10,14,26,39] Moreover, girls and women in humanitarian relief environments may also be at particular risk of violence. The limited infrastructure means women and girls may have to travel far from home at odd hours to privately change and wash their menstrual materials.[13] To mitigate these challenges, the WASH sector has prioritized building well-lit, gender-separated latrines and washing facilities.[13,40]

OPPORTUNITIES TO IMPROVE MENSTRUAL HEALTH IN LOW-RESOURCE SETTINGS

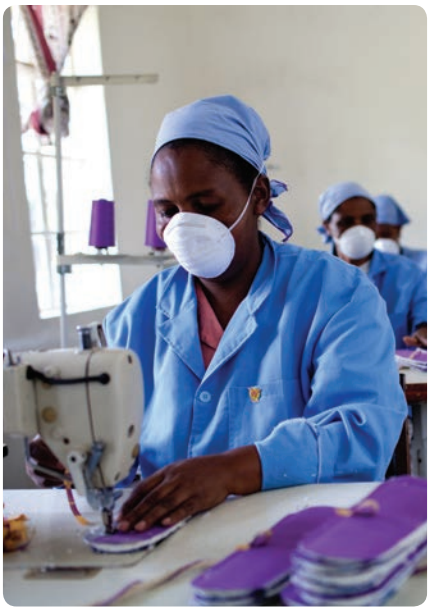
Current evidence indicates that girls and women do face some risks related to menstruation, including the potential for infection, violence, stigma and emotional distress, and restricted educational and workplace participation. Although the full impact of these risks has not been quantified, addressing menstrual health is fundamental to girls' and women's sexual and reproductive rights and well-being. Promising opportunities to improve menstrual health through partnership and innovation are highlighted below.

Working across sectors to address menstrual health

Menstrual health is a cross-sectoral issue that requires a coordinated response and partnership between governments and stakeholders in health, WASH, education, and employment. The WASH sector has been a leader in integrating menstrual health in development and humanitarian settings, influencing other actors to address menstrual health and stimulating collaboration.[40] For example, WASH activities to address menstrual health in humanitarian settings motivated the United Nations Population Fund to provide female refugees and internally displaced persons with dignity kits that include culturally appropriate sanitary pads or cloths, underwear, and soap.[40,41] The WASH and education sectors have worked together to improve infrastructure and access to menstrual health supplies in the hopes of improving girls' school attendance and participation.

However, uptake of menstrual health initiatives is limited, and current activities are fragmented. Civil society, education, public health, and commercial actors can integrate menstrual health in their ongoing work in order to:

- Provide both girls and boys with clear and accurate information about menstruation and reproductive physiology.
- Ensure that girls grow and develop in contexts where menstruation is seen as healthy and positive.
- Ensure that girls and women are supported by their families and communities at the time of menarche and during menstruation.



PATH/Eric Becker

Many women prefer commercial products like sanitary pads over the traditional cloth often used for menstrual management. Here, a woman sews reusable sanitary pads in a factory in Kenya.

As stewards of their country's public health, governments can also take action to improve menstrual health. The governments of India, Kenya, South Africa, and Uganda have recognized the importance of menstrual health by making commitments to improve access to sanitary supplies for low-income adolescent girls.[20,42]

Innovating: Menstrual health supplies and their delivery

Access to affordable and good-quality menstrual management supplies supports girls and women to manage their menstrual health effectively.[4]

A number of social entrepreneurs are working to improve access to sanitary pads for girls and women in low-resource settings. For example, Sustainable Health Enterprises (SHE) is working with communities in Rwanda to turn discarded banana fibers into affordable, biodegradable sanitary pads.[43] In addition to manufacturing affordable products and employing local staff, SHE provides menstrual education in schools and is working to eradicate taxes on menstrual health products, with plans to franchise their model in other countries. The simple sanitary pad machine developed by Arunachalam Muruganantham allows women to manufacture and sell low-cost sanitary pads in their communities.[44] Each machine produces 200 to 250 pads per day and employs ten women who operate as an independent business.[44] Finally, BeGirl creates underwear and reusable pads that work together or separately.[45] Both products incorporate a pocket that can be filled with the reusable or disposable absorbent material available to users.[45] BeGirl estimates that the underwear lasts for two years and the reusable pads for one year, and that use of the pad alone will keep 150 disposable sanitary pads out of the environment.

Long-lasting alternatives such as menstrual cups may also transform how girls and women manage their menstrual health. The limited use of insertable items such as cups or tampons in many of these locations may result from fears that they interfere with virginity, cultural beliefs that deter girls and women from touching their genitalia, a lack of familiarity with the concept, and/or limited resources such as soap and water for cleansing.[46] However, menstrual cups offer some benefits over sanitary pads, including that they are more cost-effective due to their longevity, with some lasting as long as ten years (although they are expensive to purchase initially).[47] Furthermore, these products would result in less stress on an already weak sanitation infrastructure.[46,47] Research on menstrual cups in low-resource settings shows that, although uptake may be slow initially, adolescent girls

and women find cups acceptable.[27,46-48] For example, 76 percent of women who tried the cup in Bihar, India (N = 245 approximately) preferred it to their usual menstrual management method.[47] Learning to use menstrual cups also offers supplementary opportunities to share information about overall reproductive anatomy and health.[19,46,48]

These innovative products offer potential solutions to the challenges girls and women face in managing their menstrual health; however, these commodities also require testing to determine their acceptability and utility to girls and women in low-resource settings. New commodities must be desirable and pragmatic for users, affordable and easily accessible—and, ideally, have limited environmental impact.

Beyond the supplies themselves, additional work is needed to ensure access to both new and existing menstrual management products. Specific approaches could include market-shaping efforts to identify locally appropriate products and brands and reduce the cost of supplies to end users, defining minimum performance standards, and developing partnerships with national and international manufacturers to lower prices for high-quality products. Following the example of Kenya, eliminating taxes on menstrual health supplies could help make commercial sanitary products more affordable for women.

CONCLUSION

At the most basic level, menstrual health is an issue of equity for girls and women. The sexual and reproductive rights of girls and women are compromised when they must alter their daily routines; face stigma in their communities, schools, and workplaces; and be at risk of poor sexual and reproductive health outcomes because they cannot manage menstruation with dignity. Governments, global health and development partners, and the private sector must work together to ensure that girls and women in low-resource settings no longer face discrimination as a result of their basic biology. Taking advantage of opportunities to address menstrual health through health and sexuality education, access to appropriate and affordable supplies and infrastructure, and improved collaboration across sectors could reduce disparities and contribute to improved physical, mental, and social well-being of girls and women.

Additional evidence may also help to engage policymakers and global stakeholders around this issue and highlight worthwhile interventions. The upcoming multi country Global Early Adolescent Study (www.geastudy.org) should provide critical new evidence on menstrual health. Future research activities might include:

- Assessing feasibility and impact of integrating menstrual health into sexual and reproductive health education and service delivery interventions.
- Determining how girls and women can maintain reproductive health when disposable materials are not an option or reusable materials are preferred.[12–14,23,31]
- Identifying effective menstrual health–related interventions that will improve girls' comfort, self-esteem, and confidence to attend and fully participate in school while menstruating.
- Collecting surveillance data on menstrual health to better understand the effects and demographics of menstruation, including puberty trends, and to tailor programs.[49]

There are clear and compelling reasons to address menstrual health as an issue of sexual and reproductive rights. Improving girls' and women's menstrual health can contribute to larger efforts to reduce gender inequities and improve their health, confidence, and community engagement.

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