

Putting menstrual hygiene management on to the school water and sanitation agenda

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The water and sanitation community, in partnership with the educator sector, is long overdue in taking ownership of the menstrual hygiene management agenda for schools in low-income settings. While the global community writ large is implementing numerous interventions aimed at closing the gender gap in education, attention to assuring schools are non-discriminating structural environments where both girls and boys can succeed academically continues to be limited. Engaging schoolgirls in the assessment process to determine the essential water and sanitation interventions needed to enable comfortable school attendance and participation during monthly menses is critical. Solutions can be cost effective, but must be grounded in the local context, and designed according to the recommendations of school-going girls.

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The global community has been calling for a narrowing of the gender gap in education

THE GLOBAL COMMUNITY writ large has for decades been calling for a narrowing of the gender gap in education in low-income settings. Along with girls' basic human right to acquiring an education, there is widespread recognition of the important role that educating girls serves for a country's economic development, civil society formation and population health outcomes. Despite this continued call for attention to the importance of girls' education, schools throughout low-income countries continue to lack the basic water and sanitation-related facilities essential for adolescent girls who, on a monthly basis, must manage their personal menstrual hygiene needs in school environments that frequently lack adequate latrines (or any latrines), a sufficient supply of easily accessible and clean water, and a mechanism for disposing of used sanitary materials in a private and culturally appropriate way. The water and sanitation community, in partnership with the education community, is long overdue in taking ownership of this important agenda, and in advocating for the unique needs of girls throughout sub-Saharan Africa, Asia and other regions of the world where inadequate sanitary facilities continue to fail adolescent schoolgirls. Just as teachers and classrooms are essential ingredients for academic success, so too are school environments that are non-

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gender discriminatory in their structural physical design, allowing both girls and boys to fulfil their academic potential.

The evidence on menstrual hygiene management and girl unfriendly schools

Evidence on the importance of addressing menstrual hygiene management in schools continues to grow

The empirical evidence on the importance of addressing menstrual hygiene management in school environments continues to grow as more researchers and practitioners undertake research and intervention projects in various resource-limited regions. Although additional evidence is needed and, in particular, evaluations of multi-level interventions designed on the basis of schoolgirls' own recommendations about their menstrual hygiene management-related needs, both the grey and peer-reviewed literature have provided some important findings.

Girl-unfriendly school environments hinder attendance and class participation

A range of reports and newsletter articles have highlighted the ways in which a 'girl unfriendly' school environment (specifically referring to girls' menstrual hygiene-related needs) hinders girls' successful school-going abilities. These illustratively include mention of girls who are unable to attend school because of insufficient facilities to wash and change sanitary materials, girls who miss school because they have insufficient sanitary materials to manage daily menses, and girls who have had a menstrual accident or leak while at school, and are subsequently too ashamed to return (Insights Education, 2004; Millennium Promise, 2010). It should be noted that many girls participate and attend school successfully during monthly menses. However, the continued existence of girl-unfriendly school environments is reported to hinder attendance and class participation in numerous low-income countries, and is overdue for greater attention and investment.

The notion of a girl-unfriendly school environment has been defined in a number of articles (El-Gilany et al., 2005; Sommer and Kirk, 2008), and refers in this article to the following: 1) school environments in which there is a complete lack of latrines or when latrines are inadequate in number, quality, design, safety and privacy, including having locks on the inside of doors; 2) school environments in which there is insufficient (clean) water available within close proximity to the latrines, and/or water is not available inside latrines to provide privacy for washing hands and washing menstrual stains out of uniforms or other school clothes; 3) school environments that lack adequate mechanisms for disposal of used sanitary materials, including dustbins inside latrine stalls, and a place to burn used sanitary materials at the end of each school day, such as an incinerator or pit (although each setting must define what is a culturally appropriate

mechanism for disposing of used materials); 4) for those girls who use cloths or other re-usable materials, and in particular, boarding school students, a school environment that lacks a private area for washing, drying, and ironing of menstrual cloths, taking into consideration the potential taboos that may exist around other people seeing the drying cloths. Once evaluated, the above girl-friendly components of menstrual hygiene management in schools could provide the start of a useful framework for developing specific indicators to be used in systematic monitoring.

While other aspects of school environments in many countries are girl unfriendly, such as the predominance of male teachers and school administrators, and the lack of a private space for resting when menstrual discomfort (e.g. cramps) arises, these aspects will not be discussed in this article given that they may be perceived as falling outside the realm of water and sanitation practitioners. However, additional details are available in a working paper recently published for the GPIA-UNICEF Adolescent Girls' Conference in New York City in April 2010 (Sommer, 2010). There is also growing attention to the role of providing affordable sanitary pads to girls in low-income countries, given the potential challenges of managing menses for long school days with only tissues, toilet paper, or poor quality cloths as an alternative option. What cannot be emphasized enough is the importance of eliciting girls' own recommendations for how best to address the girl-unfriendly aspects of school environments in each local context, and the utilization of participatory methodologies for engaging and empowering girls in the process.

Over the last decade, there has been increasing interest in addressing the issue of menstrual hygiene management in schools, with women's groups, non-governmental organizations (NGOs), private sector companies, and academic researchers all starting to explore and respond to girls' perceived menstrual hygiene management needs in school. While some of the projects have been minimally documented and evaluated owing to the limited resources of the organizations implementing the interventions, an increasing number of qualitative and quantitative research studies, and quality evaluations, are being conducted. Hindering the effort to address this issue in sub-Saharan African countries in particular is the absence of data on the average age of menarche, making it difficult to target responses for the appropriate girls' schooling level. However in most countries girls are estimated to be reaching menarche towards the end of primary school or early secondary school, which suggests that Ministries of Education (and the organizations with whom they collaborate) should be implementing appropriate menstrual hygiene-related interventions in water and sanitation facilities and design at both primary and secondary school levels. While the water and sanitation community is

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The education sector is fundamental to the management, maintenance and accessibility to facilities for girls

overdue in engaging more fully in addressing this issue, the education sector serves a fundamental role as well in terms of management, maintenance and assuring accessibility to such facilities for girls.

The current literature on menstruation and education

A number of research studies have explored schoolgirls' knowledge of menarche and menstrual hygiene

Local attitudes and beliefs around menstruation may be important for designing school interventions or policy

Although research conducted on girls' education and menstruation remains limited, a number of small and primarily qualitative research studies have explored schoolgirls' knowledge of menarche and menstrual hygiene in a range of low- and middle-income countries, including Nigeria, Egypt and Mexico (El-Gilany et al., 2005; Marvin and Bejarano, 2005; Adinma and Adinma, 2008). These studies are useful in terms of identifying the gaps in girls' menstrual onset and pubertal knowledge, while also highlighting challenges girls may be facing in managing menses successfully in school. A related grouping of the menstrual-related literature emerges from the anthropological field, which has used ethnographic methods to better understand menstrual beliefs and practices, such as a study that explored socio-cultural aspects of menarche in an urban Delhi slum (Garg et al., 2001), and a study that aimed to elicit the meanings around menstruation in rural Mexico (Castaneda et al., 1996). Such studies can help to elucidate local attitudes and beliefs around menstruation that may be important for designing school interventions or policy that will be culturally appropriate and acceptable to families and communities.

Along with the above, a growing number of studies have specifically examined the intersection of menstruation and education, approaching the topic from a variety of different research methodologies. These include a series of case studies that were funded by the Rockefeller Foundation in 2000, that explored sexual maturation of girls (and boys) in schools in Uganda, Kenya, Zimbabwe and Ghana (Stewart, 2004; Kirumira, 2004). These case studies provided useful evidence for the Forum for African Women Educationalists (FAWE, 2008), ministries of education, and relevant local organizations to respond to schoolgirls' specific challenges as their bodies matured, and menstrual hygiene management needs arose within the school environment. Subsequent to the analysis of the case study findings, FAWE/Kenya implemented a menstrual hygiene management-related intervention in schools, while Makerere University in Uganda followed up with the design (funded by Rockefeller) of low-cost sanitary pads made of papyrus leaves (Maka Pads) for schoolgirls. Less evidence is available on the effectiveness of the various interventions that have been introduced, although reports suggest local researchers and implementers did conduct evaluations (Quest, 2001).

Drawings by
adolescent girls of
the 'perfect girl's
toilet' were essential
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useful solutions

In Tanzania, the author conducted an in-depth comparative case study in rural and urban northern Tanzania which explored girls' experiences of menstruation and schooling (Sommer, 2009a, b). The methods included observation, in-depth interviewing, analysis of attendance data, curricula and policy documents, and most importantly, participatory activities with groups of in-school and out-of-school girls. The study identified a series of challenges within the school environment for menstruating girls, including the absence of sufficient pragmatic guidance on managing menses, the inadequate nature of the available water, sanitation and disposal facilities, the difficulty girls faced in identifying support given the predominance of male teaching and administrative staff and, for many girls, a lack of adequate sanitary materials for managing their monthly menses. Differences were seen in rural versus urban Tanzania, particularly around the strength of cultural beliefs and secrecy regarding menstruation. Critical to the findings and subsequent recommendations made to the Ministry of Education in Tanzania were the challenges and solutions elicited from adolescent girls themselves. The use of participatory activities with girls, including the writing of 'menstrual stories' (which were later incorporated into a book for girls described below), the design of a puberty curriculum to inform the government of Tanzania of the information girls seek, and drawings girls did of the 'perfect girl's toilet' were all essential for identifying useful solutions. Additional information is available in the published data from this study (Sommer, 2009a, b); the recommended next steps include the conducting of a multi-level intervention and evaluation pilot study, one that incorporates the girls' suggestions for making schools more girl friendly for menstrual hygiene management; and additional in-depth study of relevant menstrual beliefs and practices in different regions of Tanzania, to enable adaptation of interventions to differing local contexts.

More quantitative methodological approaches investigating menstrual hygiene management have recently emerged from Nepal, in a small, randomized-control trial study that introduced the use of menstrual cups (silicone devices that are vaginally inserted for capturing menstrual blood) in a random sample of 199 girls (98 girls were given menstrual cups, 101 were controls), and from Ghana, where a mixed-methods approach was utilized in an intervention pilot study that introduced sanitary pads and puberty education to schoolgirls. In Nepal, the researchers used primarily quantitative self-report survey data, while aiming to triangulate the findings with girls' diaries and the collection of school attendance data. The Nepal study is discussed in a series of working papers, with findings suggesting that the provision of menstrual cups did not have a significant impact on girls' school attendance (Oster and Thornton, 2009a). The study also

Menstrual-related discomfort may be hindering girls school attendance or participation

provided insights into the menstrual-related discomfort girls are experiencing (e.g. menstrual cramps) that may be hindering school attendance or participation, and the peer dynamics around technological uptake (Oster and Thornton, 2009b). While making an important contribution to the literature, caution must be applied in generalizing the findings from the Nepal study to other socio-cultural contexts, given the existing taboos that surround vaginal insertion in other cultures. In Ghana, researchers utilized qualitative methods to first explore schoolgirls' menstrual beliefs and menstrual hygiene-related needs, and then introduced a pilot intervention in four villages that included treatment arms with sanitary pads and puberty education and a control site. Surveys were conducted (pre-post) with schoolgirls to assess the impact of the different interventions. Although the data are not yet public, findings have been cited as suggesting that menstrual hygiene management interventions are indeed effective in improving school attendance (Scott et al., 2009). Additional data from a recent study conducted in Malawi (cited in Lloyd, 2009) suggests that the onset of menstruation does not in fact impact on girls' school attendance; however, the minimal information provided in the cited report includes mention that schoolgirls aged 14–16 years were the focus of the data collection. The study may therefore have failed to account for the experiences of girls who had already dropped out as a result of the challenges of girl-unfriendly school environments. In addition, attendance reports may not have accounted for partial days of school missed by girls. All of the above studies make important contributions to the existing literature and underscore the need for additional rigorous quantitative impact evaluation of menstrual hygiene management-related interventions.

The private sector, NGOs and social enterprises are addressing menstrual hygiene management for schoolgirls

The private sector (e.g. Proctor & Gamble, Johnson & Johnson), a range of NGOs (e.g. Catholic Relief Services, Save the Children) and new social entrepreneurial organizations (e.g. Sustainable Health Enterprises) are also addressing the challenges of menstrual hygiene management for schoolgirls in various countries. A few examples will be included here. In 2002, Catholic Relief Services (CRS) and the National Union of Eritrean Women (NUEW) collaborated on a study that revealed the challenges Eritrean girls were facing in managing menstruation in school, and subsequently the two organizations designed and implemented an intervention that provided latrines and sanitary pads to schoolgirls (NUEW and CRS, 2002). In Ethiopia, Save the Children (SCF) and Proctor & Gamble are collaborating on a school-based project providing latrines, puberty guidance and sanitary pads to schoolgirls, with evaluation results expected in the coming year (personal communication, Brad Kerner, SCF). In Rwanda, Sustainable Health Enterprises (SHE) is implementing a project to produce low-cost and environmentally friendly sanitary materials

Providing girls with adequate sanitary materials might be as important as the provision of textbooks and quality teachers

that are aimed at enabling menstruating girls to attend and participate in school more comfortably. Additional examples are cited elsewhere (Sommer, 2010), but the above suggests a growing interest in finding effective and cost-effective solutions to addressing girls' menstrual hygiene management needs in low-income settings. Issues of sustainability and product affordability with respect to the provision of sanitary supplies to schoolgirls is often mentioned in discussions and reviews of various interventions, and are important to consider. However education colleagues in low-income settings in particular might argue that providing girls with adequate sanitary materials to enable regular and comfortable school attendance and participation might be just as important as the provision of textbooks and quality teachers. All girls have the right to dignity and privacy, something which holistic interventions incorporating both adequate facilities and supplies would help to fulfil.

Engaging schoolgirls in addressing menstrual hygiene management

The most successful interventions are those grounded in the local context, and elicit girls' views

As mentioned above, critical to identifying effective and sustainable solutions is the engagement of girls themselves in the research and planning process. Although involving parents, teachers, school administrators, water and sanitation engineers, and policy makers is very important to any policy and programme development, the most successful interventions will be those that are strongly grounded in the local context, and that elicit girls' own views and recommendations. The use of participatory activities is particularly effective in this regard, both because such methods enable the involvement of girls (who are living the experience) in exploring a potentially sensitive topic, and because such methods are empowering in their design.

The participatory methods utilized in the above-mentioned Tanzania study included both group and individual activities. Girls' recommendations for changing the school environment were elicited most successfully through an activity called the 'one million shillings activity' during which girls were asked to brainstorm how they would re-design school environments (if they were provided with such a large sum of funds) to better provide for the comfort of pubescent and menstruating girls (Sommer, 2009b). The data quickly reached saturation with the groups of girls listing almost identical components (e.g. adequate latrines, locks on the doors, water availability, pragmatic puberty guidance, sanitary pads and underwear for girls who could not afford them). The drawings of the girl's toilet also provided critical insights, including identifying the girls' preference for having a water container or tap inside latrine stalls for private washing, and

an incinerator located near the latrines so that boys would not make fun of girls carrying dustbins across the school campus for burning. Such findings are critically important for designing successful interventions, and can only be identified through the active engagement of girl students.

One particularly successful intervention resulted from the 'menstrual story' writing activity mentioned above (Sommer, 2009a). The collection of stories led to the development and publication of a girls' puberty book in Tanzania aimed at 10–14-year-old girls. The book is in Swahili and English (both languages on each page), and incorporates a selection of the girls' menstrual stories alongside basic puberty and menstrual management guidance, the latter of which was based on a puberty curriculum the Tanzanian Ministry of Education was developing. The book also includes activities to help girls manage their menses more successfully, and build their self-esteem, the content of which was derived from a participatory activity that had the girls submitting their anonymous puberty questions to the researcher, which helped to identify the gaps in girls' pubertal and menstrual-related knowledge (Sommer, 2009b). An initial 16,000 copies of the book were published with support from the Nike Foundation, and the Tanzanian Ministry of Education is now approving the book for use in the primary school curriculum. UNFPA (United Nations Population Fund) and UNICEF also became interested, and their combined support has brought the number of copies published in Tanzania to over 100,000. Given the book's inclusion of pragmatic guidance on how to manage menstruation in school, including advice on how to keep clean and appropriately dispose of used menstrual materials, there is the possibility that its widespread distribution across Tanzania will lead to grassroots local efforts to address the girl-unfriendly aspects of school environments.

Girls were asked how they would re-design school environments to better meet their needs

Gaps in our knowledge: Development and humanitarian relief settings

Despite the growing literature on the topic of menstrual hygiene management, significant gaps remain in the knowledge base that are of relevance to the water and sanitation community. In terms of exploratory research, additional in-depth qualitative and ethnographic studies are needed to better understand local menstrual-related beliefs and practices, so the constraints or behavioural pressures experienced by newly menstruating schoolgirls are better understood in different social and cultural environments. In terms of intervention research, there is a need for additional evidence on the impact of multi-level interventions in schools that address girls' menstrual hygiene-related

Studies must consider how urban versus rural girls, and girls coming from high versus low income families may be differentially impacted

needs. These might include, for example, testing a holistic combination of adequate and safe latrines, water availability inside latrines, appropriate disposal mechanisms located nearby, and the provision of pragmatic menstrual management guidance. Another possibility would be to include sanitary pads and/or high quality cloths for easier management of menstrual blood flow. Capturing the impact of such interventions on girls' academic experience and attendance requires careful study design, as girls may be missing partial days rather than whole days of school, with study attendance data collected accurately, and for the appropriate age group of girls. In addition, studies must consider the socioeconomic context, and the ways in which urban versus rural girls, and girls coming from high- versus low-income families (and attending better or worse quality schools) may be differentially impacted by such interventions and the onset of menses in general.

Numerous refugees and internally displaced girls find themselves without basic menstrual hygiene sanitary materials

NGOs are increasingly providing girls with 'comfort kits' that contain a supply of sanitary pads and underwear

Lastly, a wholly untapped area of research in need of urgent attention is that of school-going girls in post-conflict settings. While the provision of shelter, food and water are of the utmost importance in the immediate post-conflict time period, numerous refugees and internally displaced girls find themselves in living situations with little to no privacy, and without their basic menstrual hygiene management sanitary materials. Girls attending improvised schools in post-conflict settings may lack adequate clothing wraps to cover a menstrual stain on the back of their skirt, and may struggle with sitting on the ground at school (if desks are unavailable) during their monthly menses if they do not have adequate sanitary materials, or water and sanitation facilities at which to change. While a number of NGOs are increasingly providing girls with 'comfort kits' or other types of package that contain a supply of sanitary pads and underwear, more in-depth assessment is needed of both girls' menstrual-related needs, and the success of various interventions currently being attempted in post-conflict settings. The latter ought to address the menstrual hygiene management (e.g. privacy and accessibility of latrines and water, availability of sanitary supplies and underwear) needs of all girls and women in such settings, and not just the needs of school-going girls who are the main focus of this article.

In conclusion, there is a growing body of literature on the topic of menstrual hygiene management and girls' education, but continuing important gaps in the existing empirical evidence. This includes the testing of multi-level interventions, with the ultimate aim of identifying the most effective, cost-efficient and culturally appropriate responses to be implemented across low-income settings. The water and sanitation community is at the forefront of some of these efforts, with UNICEF and other international organizations becoming increasingly interested in the provision of guidance on this topic to schools in

low-income settings. However, until the water and sanitation community takes ownership of this issue and, in partnership with the education sector, begins to identify low-cost solutions for implementation into existing and future education projects, girls will continue to suffer gender discrimination in school design and infrastructure, and have their academic success (with significant implications for population health and development) impacted negatively in turn.

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