



Dispatch

New Directions for Assessing Menstrual Hygiene Management (MHM) in Schools: A Bottom-Up Approach to Measuring Program Success

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Jackie Kirk pioneered research on global menstrual taboos, which initiated critical conversations about how the silence surrounding menstruation affects girls and women's wellbeing. The 2006 Kirk and Sommer article "Menstruation and Body Awareness: Linking Girls' Health with Girls' Education" reviewed project experiences from Uganda, India and Sudan, identified challenges that girls and women experience when menstruation is taboo, and proposed early programmatic solutions. They highlighted challenges with menstrual knowledge, menstrual hygiene, and stigma, and linked those challenges to educational constraints for girls – findings that researchers are continuing to uncover in other contexts today. They noted:

Where girls are able or determined to attend school throughout menstruation, the insufficient facilities and sanitary protection may nevertheless create discomfort for girls in the classroom and an inability to participate. (Kirk & Sommer, 2006, p. 8)

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This work, on an under-explored topic with scant literature available to inform it, provided the foundation for a now rapidly growing trajectory of menstruation-focused research and programming around the globe. It laid the groundwork for researchers to explore MHM (Menstrual Hygiene Management) in schools, thereby advancing research, policy discussions, and programmatic solutions to addressing menstrual hygiene in support of girls' education.

Girls' retention and grade promotion in school has improved in many countries due to increased focus on girls' education among the global development community and local and national governments, and has also spurred a demand to further support girls' transition and access to secondary education (Sperling & Withrop, 2015). As more girls stay in school than ever before, there is a new generation of girls who will have their first menstrual period in school and will have to continue to manage their menses in schools. Many schools, and the policies that govern them, are not intentionally designed with girls' physical, social or emotional needs at this life stage, including the availability of life-stage appropriate facilities and uniforms. There is also a lack of support structures, guidance, and rules that enable girls to access facilities when needed or to answer questions in class without standing (Sommer, 2010).

Menarche marks an important biological, and often social, transition from childhood to womanhood. Though menstruation directly links to health concerns such as fertility, family planning, sexuality and overall body literacy, it remains an under-recognized public health issue in its own right (Sommer, Ackatia-Armah, Connolly, & Smiles, 2015). Over a decade of formative research has repeatedly documented the difficult, embarrassing, stressful, confusing, fear-inducing, stigmatizing, and sometimes traumatic experiences girls have had while managing their periods in school. Many of these experiences are consequences of a lack of education and practical guidance explaining menstruation and how to manage menses once they begin. Poor quality or absent school water, sanitation and hygiene infrastructure in schools and limited access to materials, further impact girls' experiences. Additional concerns stem from unsupportive social environments that force girls to contend with teasing, secrecy, and social norms that dictate a range of behavioral restrictions including what is acceptable to say, who they can talk with, where they can go, what they can touch, or how they can pray, among others (Alexander et al., 2014; Caruso et al., 2013; Ellis et al., 2016; Haver et al., 2013; Long et al., 2013; Mason et al., 2013; McMahan et al., 2011; Sommer, 2009; Sommer, 2010; Sommer, Ackatia-Armah, Connolly, & Smiles, 2014; Sumpter & Torondel, 2013; Trinies, Caruso, Sogoré, Roubkiss, & Freeman, 2015; Van Eijk et al., 2016).

The challenges girls face, along with their reports that those challenges can encourage them to miss full or partial days of school, has increased interest in identifying links between menstruation and school attendance. A cross-sectional study in Bangladesh found that girls were more likely to miss

school during menstruation if they felt uncomfortable being at school during menstruation, believed that their menstrual challenges impacted their performance in school, attended schools that had locked toilets, or faced restrictions during menstruation (Alam et al., 2017). A cross-sectional study in rural Malawi found that a third of girls interviewed missed at least one day of school during their last menstrual period (Grant, Lloyd, & Mensch, 2013). Studies evaluating the impact of material and education provision on school attendance, however, have yielded mixed results (Montgomery, Ryus, Dolan, Dopson, & Scott, 2012; Montgomery et al., 2016; Oster & Thornton, 2011; Phillips-Howard et al., 2016a).

Regardless of mixed results on attendance, qualitative research from around the globe consistently finds that when girls face challenges managing their menstruation at school their educational experience is compromised. Girls report reducing participation in class and non-class activities, feeling distracted, isolating themselves or being isolated by others, missing class time to manage their needs, or even leaving school for the remainder of the day (Haver et al., 2013; Long et al., 2013; Miiro et al., 2018; Van Eijk et al., 2016). These findings demonstrate the need to evaluate the impact of girls' menstruation experiences in school beyond measures of absenteeism alone. Indeed, calls have been made to prioritize the development of measures so girls' experiences can be more fully assessed (Phillips-Howard et al., 2016b; Sommer et al., 2016).

This dispatch aims to share lessons learned from the process of developing instruments to measure school participation, stress, and self-efficacy – outcomes that qualitatively link to girls' experiences managing menstruation in school. Currently, valid and reliable tools for measuring these domains do not exist. In response, Save the Children, through support from its Child Sponsorship Innovation funding, is working to develop new measurement tools to allow its programs to assess the success of menstrual hygiene strategies in schools, signaling a move away from assessment using attendance rosters and a shift in focus to the changes and improvements in girls' lived experiences. The action research described below ties back to girls' stories and voices, based on fundamental principles of Jackie Kirk, whose initial work focused on the practical challenges girls experienced when managing menstruation in an unsupportive school environment.

Methodology of Approach

The development of the Menstrual Related – School Participation, Stress and Self-Efficacy (MR-SSS) tool has consisted of four phases, including (1) qualitative data collection, (2) qualitative analysis to inform tool development, (3) tool piloting and analysis of pilot results to improve the tool, and (4) a second pilot in the Philippines with the updated tool (see Figure 1).

Phase I of the study aimed to understand how girls in El Salvador and The Philippines experienced and described school participation, stress, and self-efficacy, regarding menstruation. In both locations, between May and November of 2016, Save the Children staff and Columbia University Fellows utilized qualitative methods, including participatory learning activities, in-depth interviews, focus group discussions, and key informant interviews, to investigate the themes of interest. Parents, teachers, and girls and boys in grades five through seven were engaged in discussions regarding girls' typical worries managing their menses in school (stress), how their behavior in class or with peers changed on those days (school participation), and the abilities girls believed they had to solve these challenges (self-efficacy). Qualitative tools were initially the same for each country, though they were iteratively adapted in each location (Hennink, Hutter & Bailey, 2011).

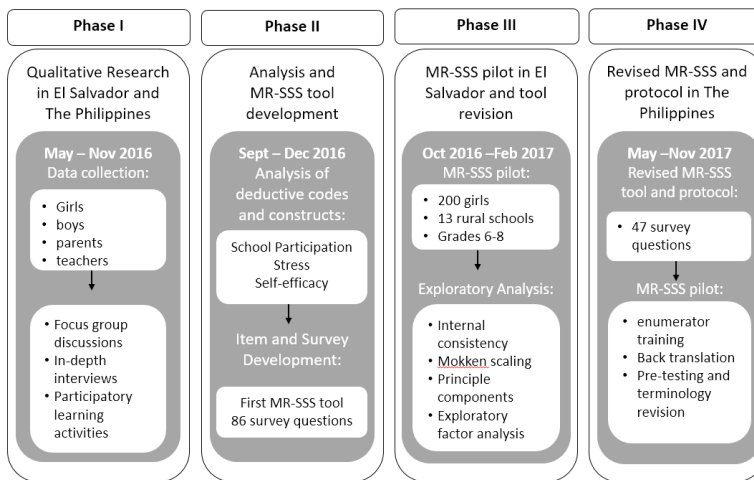


Figure 1. Development phases of the MR-SSS measurement tool.

In Phase II, qualitative data was transcribed verbatim and analyzed using MAX QDA. The domains of interest were coded first, and then each domain was analyzed separately to understand the various facets that defined school participation, stress and self-efficacy for girls. Using the findings from each domain, including many direct quotes, tools were separately developed for the Philippines and El Salvador, including 20-30 close-ended survey questions per domain of interest (see Figure 2). We then compared survey questions between El Salvador and the Philippines to add or subtract items to create one tool for both locations.

In Phase III, 86 MR-SSS questions were piloted in El Salvador in October 2016, among 200 menstruating girls in grades six through eight, from 13 rural schools. Multiple exploratory analyses were conducted to assess the

reliability, validity, and utility of the initial MR-SSS scale, including: measures of internal consistency; exploratory principal components analysis; exploratory factor analysis; and exploratory Mokken scaling procedures. Exploratory analyses were inconclusive; few questions meet final inclusion criteria for any procedure. Low interrater reliability measures, however, suggested potential challenges with the administration of the tool and format of the questions. Results were used to refine the MR-SSS survey questions and format as well as create an intensive enumerator training and survey protocol for subsequent surveys in the Philippines. A variation of the refined tool was also tested in Kyrgyzstan (April 2017) and Ethiopia (June 2017), though methods, translation, survey items, and oversight of data collection varied between contexts.



Figure 2. Development of a qualitative question in El Salvador to a MR-SSS survey question.

Phase IV utilized the revised MR-SSS tool, protocol, and training to conduct the pilot in the Philippines in July-August 2017. The revised MR-SSS tool included 13 school participation questions, 13 stress questions and 21 self-efficacy questions. The tool was translated from English to Tagalog and back-translated to English. Based on lessons from testing the tool in other locations and in response to potential issues with administration, we conducted a thorough training and extensive pre-testing before administering the tool.

The Institutional Review Board of Columbia University and Save the Children's Ethical Review Committee approved all research conducted in El Salvador and the Philippines. Save the Children obtained written parental

consent and oral and student assent from all children for each phase of the study. All research followed the principles outlined in the Declaration of Helsinki.

The tool is still in development and preliminary results are promising. The next step for the development of the MR-SSS tool involves a follow-up assessment in the Philippines. We will update the tool based on this assessment and pilot the refined MR-SSS tool in additional countries.

Below we document lessons learned thus far, to inform other researchers and practitioners about the process.

Lessons Learned: Insights for Future Measurement Development Related to MHM

Lessons were learned across the entire spectrum of research activities, from improving the content of enumerator training to analysis of the menstruation-related domains, and were crucial to the development of the MR-SSS tool.

First, we found it imperative that those administering the tool in the field not only have a clear understanding of the questions and survey protocol, but also an introduction to the menstrual health field and awareness of the overall objective of the work. In the Philippines, the details we added to the training and protocols motivated enumerators to collect high-quality data, as they understood their valued contribution to the innovation and its implications beyond the Philippines.

Second, training and clear understanding of the tool matters. In comparison to countries that could not afford the time, a longer training period in the Philippines resulted in greater buy-in and understanding of the MR-SSS tool concepts, and therefore improved the administration of the tool. Moving forward, we recommend more enumerator engagement and interaction with the tools during the training.

Third, it was important for our research team to be able to tailor the survey as appropriate. The use of familiar terms that were age and culturally appropriate was important for girls' understanding of the survey question. However, not all girls use the same words to describe menses or their menstrual materials, which may also vary between disposable and reusable products. To address this issue, our team used electronic data collection tools that could be customized based on emic terminology. Early in the assessment girls were asked their preferred term for menstruation. The enumerators then were prompted to enter this term into the tool, and the assessment form was automatically updated to use the girl's preferred term throughout the survey. This not only made girls feel more comfortable and eased their ability to answer the survey questions, but it also eased the burden of the enumerator to remember their word of choice.

Fourth, we learned that our MR-SSS measurement tool is likely age-sensitive. A comparison of basic descriptive statistics across countries that

collected MR-SSS data suggests that the tool and the domains we were attempting to capture may be more relevant for younger girls. Older schoolgirls have more experience managing their menses in school, their menstrual periods may be more regular, and more of their friends have reached menarche, potentially creating additional social support. Thus, older girls may not experience the same levels of stress or lack of self-efficacy as younger girls just beginning to transition into puberty and dealing with these changes for the first time. Our tool will be able to determine if there are in fact differences. Future assessments will recruit girls by age and not grade, as age-for-grade varies significantly across contexts. This key finding has corresponding policy and implementation implications, further supporting evidence that MHM programming in schools should target girls by a certain age and not grade, to reach them with pertinent information before menarche (Caruso et al., 2013; Haver et al., 2013; Long et al., 2013).

Fifth, our experience to date suggests that school participation, stress and self-efficacy are not independent domains, but overlap with one another. For example, when a girl has her period in school, she can be stressed about standing up in the classroom (stress and school participation domains) or she may not feel confident she can perform well on an exam that day because of her period (self-efficacy and school participation domains). Attempting to create consistently separate domains was important for the purposes of analysis, though not necessarily representative of the reality of girls' experiences.

Reflection

Save the Children's experiences in the development of the MR-SSS tool and MHM programming continues to be informed by the body of research that grew from the foundational work by Jackie Kirk on MHM. Save the Children's work advances her research, by exploring evidence-based programming to address gender gaps and equity issues in schools related to menstruation and girls' education.

In this spirit, girls' voices were the backbone and foundation of the MR-SSS tool development. We are confident that the survey tool is an accurate representation of the experiences girls shared with us during in depth interviews and focus group discussions. The survey questions echo similar findings shared in grey literature and journal articles from global MHM research that reflect the experiences of girls. However, it was important to apply a systematic approach to build the evidence that could show us the power of girls' voices in this process.

Beyond the girls' education agenda, discourse on MHM has bolstered gendered water, sanitation and hygiene (WASH) in schools' approaches; and has revealed that MHM is not only a female issue but that there is also a

necessity to include men and boys in MHM research, programming and staffing on projects. Kirk (2005, n.p.) wrote:

From a very practical perspective, girls who lack adequate sanitary materials may miss school each month during their period. If girls attend schools which – as many do – lack adequate latrines and water supplies for girls to comfortably change sanitary pads and wash themselves in privacy, they may be unable to remain comfortably in class during their menstrual cycle.

Menarche signifies the beginning of a new life stage for girls, but there is a growing recognition that women's WASH needs, like their bodies, will change over the life course (Caruso et al., 2017; Hullah et al., 2015; Sahoo et al., 2015; Sommer et al., 2017). Kirk's research on menstruation and her recognition of the role that WASH plays was perhaps the critical catalyst for encouraging further research on the gendered, biological, and social changes that could be further addressed by the WASH sector.

In the years since Kirk's pioneering contribution, the global MHM community has expanded to include multiple sectors, and a multitude of actors and stakeholders. Researchers, NGO's, donors, Ministries of Education, and the private sector continue to delve into the world of MHM, producing research, developing programmatic solutions and policies, and identifying and advancing an agenda for holistic MHM solutions – for girls and women to learn and thrive in a gender equitable community.

References

- Alam, M. U., Luby, S. P., Halder, A. K., Islam, K., Opel, A., Shoab, A. K., ... Unicomb, L. (2017). Menstrual hygiene management among Bangladeshi adolescent schoolgirls and risk factors affecting school absence: Results from a cross-sectional survey. *BMJ open*, 7(7), e015508.
- Alexander, K. T., Oduor, C., Nyothach, E., Laserson, K. F., Amek, N., Eleveld, A., ... Ombok, M. (2014). Water, sanitation and hygiene conditions in Kenyan rural schools: Are schools meeting the needs of menstruating girls? *Water*, 6(5), 1453-1466.
- Caruso, B. A., Clasen, T. F., Hadley, C., Yount, K. M., Haardörfer, R., Rout, M., ... Cooper, H. L. (2017). Understanding and defining sanitation insecurity: Women's gendered experiences of urination, defecation and menstruation in rural Odisha, India. *BMJ Global Health*, 2(4), e000414.
- Caruso, B.A., Fehr, A., Inden, K., Sahin, M., Ellis, A., Andes, K. L. & Freeman, M. C. (2013). *WASH in schools empowers girls' education in Freetown, Sierra Leone: An assessment of menstrual hygiene management in schools*. New York: United Nations Children's Fund.
- Ellis, A., Haver, J., Villasenor, J., Parawan, A., Venkatesh, M., Freeman, M. C., & Caruso, B. A. (2016). WASH challenges to girls' menstrual hygiene management in Metro Manila, Masbate, and South Central Mindanao, Philippines. *Waterlines*, 35(3), 306-323.
- Grant, M., Lloyd, C., & Mensch, B. (2013). Menstruation and school absenteeism: Evidence from rural Malawi. *Comparative Education Review*, 57(2), 260-284.
- Haver, J., Caruso, B. A., Ellis, A., Sahin, M., Villasenor, J. M., Andes, K. L. and Freeman, M. C. (2013). *WASH in schools empowers girls' education in Masbate Province and Metro Manila, Philippines: An assessment of menstrual hygiene management in schools*. New York: United Nations Children's Fund.
- Hennink, M., Hutter, I., & Bailey, A. (2011). *Qualitative research methods*. London: Sage.

- Hulland, K. R., Chase, R. P., Caruso, B. A., Swain, R., Biswal, B., Sahoo, K. C., ... Dreibelbis, R. (2015). Sanitation, stress, and life stage: A systematic data collection study among women in Odisha, India. *PLoS One*, *10*(11), e0141883.
- Kirk, J. (2005). *The SoEISBEP gender equity support program: An early impact assessment*. Unpublished program document of Sudan Basic Education Program. Nairobi, KE.
- Kirk, J., & Sommer, M. (2006). Menstruation and body awareness: Linking girls' health with girls' education. *Royal Tropical Institute (KIT), Special on Gender and Health*, 1-22.
- Long, J., Caruso, B. A., Lopez, D., Vancraeynes, K., Sahin, M., Andes, K. L., & Freeman, M. C. (2013). *WASH in schools empowers girls' education in rural Cochabamba, Bolivia: An assessment of menstrual hygiene management in schools*. New York: United Nations Children's Fund.
- Mason, L., Nyothach, E., Alexander, K., Odhiambo, F. O., Eleveld, A., Vulule, J., ... Phillips-Howard, P. A. (2013). 'We keep it secret so no one should know' – A qualitative study to explore young schoolgirls attitudes and experiences with menstruation in rural Western Kenya. *PLoS One*, *8*(11), e79132.
- McMahon, S. A., Winch, P. J., Caruso, B. A., Obure, A. F., Ogotu, E. A., Ochari, I. A., & Rheingans, R. D. (2011). 'The girl with her period is the one to hang her head': Reflections on menstrual management among schoolgirls in rural Kenya. *BMC International Health & Human Rights*, *11*(1), 7.
- Miir, G., Rutakumwa, R., Nakiyingi-Miir, J., Nakuya, K., Musoke, S., Namakula, J., ... Weiss, H. A. (2018). Menstrual health and school absenteeism among adolescent girls in Uganda (MENISCUS): A feasibility study. *BMC Women's Health*, *18*(1), 4.
- Montgomery, P., Hennegan, J., Dolan, C., Wu, M., Steinfield, L., & Scott, L. (2016). Menstruation and the cycle of poverty: A cluster quasi-randomised control trial of sanitary pad and puberty education provision in Uganda. *PLoS One*, *11*(12), e0166122.
- Montgomery, P., Ryus, C. R., Dolan, C. S., Dopson, S., & Scott, L. M. (2012). Sanitary pad interventions for girls' education in Ghana: A pilot study. *PLoS One*, *7*(10), e48274.
- Oster, E., & Thornton, R. (2011). Menstruation, sanitary products, and school attendance: Evidence from a randomized evaluation. *American Economic Journal: Applied Economics*, *3*(1), 91-100.
- Phillips-Howard, P. A., Caruso, B., Torondel, B., Zulaika, G., Sahin, M., & Sommer, M. (2016b). Menstrual hygiene management among adolescent schoolgirls in low-and middle-income countries: Research priorities. *Global Health Action*, *9*(1), 33032.
- Phillips-Howard, P. A., Nyothach, E., ter Kuile, F. O., Omoto, J., Wang, D., Zeh, C., ... Eleveld, A. (2016a). Menstrual cups and sanitary pads to reduce school attrition, and sexually transmitted and reproductive tract infections: A cluster randomised controlled feasibility study in rural western Kenya. *BMJ Open*, *6*(11), e013229.
- Sahoo, K. C., Hulland, K. R., Caruso, B. A., Swain, R., Freeman, M. C., Panigrahi, P., & Dreibelbis, R. (2015). Sanitation-related psychosocial stress: A grounded theory study of women across the life-course in Odisha, India. *Social Science & Medicine*, *139*, 80-89.
- Sommer, M. (2009). Ideologies of sexuality, menstruation and risk: Girls' experiences of puberty and schooling in northern Tanzania. *Culture, Health & Sexuality*, *11*(4), 383-398.
- Sommer, M. (2010). Where the education system and women's bodies collide: The social and health impact of girls' experiences of menstruation and schooling in Tanzania. *Journal of Adolescence*, *33*(4), 521-529.
- Sommer, M., Ackatia-Armah, N., Connolly S., & Smiles, D. (2014). A comparison of the menstruation and education experiences of girls in Tanzania, Ghana, Cambodia and Ethiopia. *Compare: A Journal of Comparative and International Education*, *45*(4), 589-609
- Sommer, M., Ackatia-Armah, N., Connolly, S., & Smiles, D. (2015). A comparison of the menstruation and education experiences of girls in Tanzania, Ghana, Cambodia and Ethiopia. *Compare: A Journal of Comparative and International Education*, *45*(4), 589-609.
- Sommer, M., Caruso, B. A., Sahin, M., Calderon, T., Cavill, S., Mahon, T., & Phillips-Howard, P. A. (2016). A time for global action: Addressing girls' menstrual hygiene management needs in schools. *PLoS Medicine*, *13*(2), e1001962.

- Sommer, M., Phillips-Howard, P. A., Mahon, T., Zients, S., Jones, M., & Caruso, B. A. (2017). Beyond menstrual hygiene: Addressing vaginal bleeding throughout the life course in low and middle-income countries. *BMJ Global Health*, 2(2), e000405.
- Sperling, G., & Withrop, R. (2015) What works in girls' education: Evidence for the world's best investment. Washington, DC: Brookings Institution Press.
- Sumpter, C., & Torondel, B. (2013). A systematic review of the health and social effects of menstrual hygiene management. *PloS One*, 8(4), e62004.
- Trinies, V., Caruso, B., Sogoré, A., Toubkiss, J., & Freeman, M. (2015). Uncovering the challenges to menstrual hygiene management in schools in Mali. *Waterlines*, 34(1), 31-40.
- Van Eijk, A. M., Sivakami, M., Thakkar, M. B., Bauman, A., Laserson, K. F., Coates, S., & Phillips-Howard, P. A. (2016). Menstrual hygiene management among adolescent girls in India: A systematic review and meta-analysis. *BMJ Open*, 6(3), e010290.