Cambodian girls’ recommendations for facilitating menstrual hygiene management in school

Susan Connolly and Marni Sommer

ABSTRACT

Inadequate school water and sanitation facilities in many low-income countries, including Cambodia, are problematic for pubescent girls as they reach menarche and must subsequently manage monthly menses while attending school. This comparative case study explored girls’ own suggestions for improving the pubertal guidance they receive in the classroom, and for modifications of existing school water, sanitation and hygiene (WASH) facilities in order to better meet schoolgirls’ menstrual hygiene management needs. Key findings included girls’ recommendations for teaching methodologies that encourage questions and practical content regarding puberty and menstrual management before the onset of menarche, and WASH-specific recommendations for the increased availability of water and sanitary materials in toilet stalls and greater privacy from boys and other girls. Incorporating girls’ recommendations into WASH, health and education related policy and programming in low-income countries would allow girls to comfortably and confidently manage menses within the school environment.

Key words | adolescents, Cambodia, education, health, menstruation, sanitation

INTRODUCTION

In many low-income countries where school environments lack adequate and sufficient water and sanitation facilities, adolescent girls face unique challenges in managing menstrual flow. Much of the existing evidence on the specific barriers that exist for adolescent girls around menstrual hygiene management (MHM) in schools has emerged from sub-Saharan Africa and South Asia (Deo & Ghattargi 2005; Ahmed & Yesmin 2008; Sommer 2009a; Fehr 2011; McMahon et al. 2011). Minimal to no data exist on schoolgirls’ experiences of menstruation and education in Southeast Asia. This article aims to help fill this empirical gap in the evidence by describing the findings from a study conducted in rural and urban Cambodia that explored schoolgirls’ experiences of menarche and menstrual management. The study was part of a larger effort to adapt a successful girls’ puberty resource book from the Tanzanian to the Cambodian context (Sommer 2011). In order to develop effective school water and sanitation interventions, it is important to capture adolescent girls’ voiced experiences and opinions of menstrual management in potentially ‘girl unfriendly’ school environments (Sommer 2010; Sommer et al. 2013). Adequate school water and sanitation facilities are essential for ensuring that post-pubescent girls can attend school and participate comfortably during their monthly menses (Freeman et al. 2012; Sumpter & Torondel 2013). The Royal Government of Cambodia’s National Strategy for Rural Water Supply, Sanitation and Hygiene 2011–2025 acknowledges girls’ difficulties in attending school due to a variety of reasons, including a lack of toilets at school. In response to this challenge, the government plans to set a standard for the number of students per latrine, defined separately for boys and girls (Ministry of Rural Development 2011).

Girls’ educational attainment has been prioritized as a Millennium Development Goal and is an important factor in achieving population health outcomes. Decades of evidence support the relationship between girls’ education and improved contraceptive uptake, delayed childbearing,
improved child nutrition and vaccination rates and the empowerment of young women (UNICEF 2003; UNFPA 2003; Herz & Sperling 2004). In recent decades, global and local efforts have contributed to an increase in the number of girls now attending school in low-income countries (UNESCO 2008; Ali & Rizvi 2010; McMahon et al 2011; World Bank 2011). These efforts have been most successful in improving girls’ access to primary school. In many low-income countries, however, girls continue to leave school at the secondary level. The Royal Government of Cambodia has adopted gender equity as a priority in its educational policy, reflected in the Education for All National Plan 2003–2015. Though the government has made considerable progress in eliminating the gender gap in enrolment rates at all levels, girls and boys both continue to drop out of school at high rates at the secondary level. The net enrolment ratio for girls at the primary level is 96.1, and drops to 37.4 at the lower secondary and 20.1 at the upper secondary level (Ministry of Education, Youth and Sports 2012). Although there are numerous reasons why girls may not successfully transition from primary to secondary school, including household responsibilities and pressures to be economically productive, high dropout rates among girls in Cambodia may also be related to the timing of menarche. The average age for menarche in Cambodia is estimated to coincide with girls’ transitions from primary to secondary school, at approximately age 12 (Ministry of Education, Youth and Sports 2012). The study described in this article sought to explore the ways in which the onset of menses may be disrupting girl’s school experiences in Cambodia, with the additional aim of informing future school water, sanitation and hygiene interventions in Cambodia.

The onset of menses for girls in low-income countries

In countries around the world, the onset of menstruation marks a transition from girlhood to womanhood. In many cultural contexts, menarche also introduces strong social norms regarding the need for girls to learn to hide their monthly management of menses from men, and frequently even from other girls and women (Buckley & Gottlieb 1998; Bharadwaj & Patkar 2004; Sommer 2009a). This presents particular challenges in school settings that have insufficient water and sanitation facilities, and when girls lack pragmatic MHM-related guidance. Research in Tanzania and Ghana found that urban and rural schoolgirls expressed fear, shame and confusion in the face of the new hygienic requirements presented by the onset of menses (Sommer 2009a; Sommer & Ackatia-Armah 2012). A series of case studies conducted in Nepal and India demonstrated post-pubescent girls’ needs for adequate, private and safe water and sanitation facilities on school grounds. The schoolgirls in these studies reported harassment from male students (who would search in their bags for sanitary materials); a hesitancy to respond to teachers’ questions during their menstrual cycle as standing up is required and they did not want anyone to notice if they had had a ‘menstrual accident’; and the absence of curriculum that addressed their menstrual management questions and concerns (Deo & Ghattargi 2005; Ahmed & Yesmin 2008). A small study conducted in Ethiopia by the non-governmental organization (NGO) CARE found that only 10% of post-pubescent girls age 13–18 reported having a place to maintain menstrual hygiene at school, while 43% reported missing school at least once due to menstruation (Fehr 2011). Similarly in Nepal, 53% of adolescent girls reported ever being absent due to menstruation, and some girls reported that when present at school, they performed poorly due to worry or an inability to manage menses because of a lack of water or privacy (WaterAid 2009). In Pakistan, a survey conducted with 1,275 adolescent girls found that the average duration of each menstrual cycle was 3 days, with most girls experiencing the onset of menses between the ages of 12 and 14 (Ali & Rizvi 2010). If menstruation occurs monthly, girls in upper primary school and in secondary school are experiencing increased hygienic requirements for 24–48 days per year in school environments that may not be conducive for MHM-related needs.

In Cambodia, a recent government survey indicated that out of 10,455 schools, 31.0% do not have any latrine on school grounds (Ministry of Education, Youth and Sports 2012). This suggests that numerous post-pubescent girls must leave school in order to effectively manage menstrual hygiene. These findings are not dissimilar from data on school water and sanitation facilities in other low-income countries, particularly in sub-Saharan Africa (UNICEF
However, the physical presence of sanitation facilities is just one indicator of the potential MHM-related challenges facing menstruating girls in Cambodia and other low-income countries. Some schools may have latrines, but the facilities may be unsafe or may lack adequate access to water, to privacy, or to a means of disposing of soiled sanitary materials. As girls in Tanzania, Ghana, Kenya and elsewhere have described, school environments need a holistic package of MHM components to ensure girls are comfortable managing menses while in school (Sommer 2009b; McMahon et al. 2011; Sommer & Ackatia-Armah 2012; Sommer et al. 2013). In general, these components include safe, private and clean sanitation facilities with locks and doors; easy, private access to water; disposal facilities for used sanitary materials (cloths or pads); pragmatic guidance on the management of menses; adequate sanitary materials for girls who cannot afford them; and teachers and administrators who are sensitized to girls’ MHM-related needs and concerns (Sommer 2009b). The study described here explored Cambodian adolescent girls’ voiced experiences of menstruation and education and their suggestions to address the challenges they face managing menses in the school environment.

The research setting

Cambodia, located in Southeast Asia, continues to make development strides to overcome the many years of war and conflict that devastated the country, and the school system. Currently, the Cambodian education system consists of six years of primary education (age 6–11) and three years of lower secondary education (age 12–14), both of which are compulsory and free. During the 2010–11 school year in Cambodia, 17.9% of primary school students were older than 11, and 40.1% of lower secondary students were over age 14 (Ministry of Education, Youth and Sports 2012). Upper secondary education consists of three additional years of schooling, which is intended for students age 15–18. Official policy states that in order to be promoted to the next level, students must not be absent more than 20 days without school permission, or more than 60 days if permission is granted. This may have implications for pre-pubescent girls if they are missing school days to manage their menses in the absence of adequate school water and sanitation facilities, and if asking permission from male teachers, or teachers not sensitized to girls’ menstrual-related needs, results in unexcused absences.

We conducted a comparative case study of urban versus rural Cambodia to capture relevant differences in social and cultural beliefs, the existence and quality of the water and sanitation facilities in schools, and other aspects of menstrual onset and management that might vary in more traditional versus more modern settings within Cambodia. The Cambodian population is relatively homogeneous, with 90% considered ethnically Khmer (Central Intelligence Agency 2013). The research was conducted in an urban area in Dangkao District of Phnom Penh, and a rural area in Rotanak Mondul District of Battambang Province. In the urban area, businesses, Internet shops, health clinics and schools line the main streets. Markets and small shops sell sanitary pads for approximately US$0.50 each. The nearby urban area of Phnom Penh is a tourist hub, with a variety of hotels and attractions and many NGOs. A co-ed public secondary school and private vocational training center were the sites for recruitment of urban girls. In the rural area, fewer economic opportunities are available and access to technology, health care and educational resources is limited. As in the urban area, sanitary pads were sold in markets, but because girls may not live in the market town and families have less money in general, girls in Rotanak Mondul District had less access to sanitary pads than girls in Phnom Penh. The primary source of income in the rural area was rice farming. A co-ed public secondary school and a tailoring class at a public vocational training center were the sites for recruitment for rural girls.

METHODS

Our comparative case study of girls’ experiences of menstruation and education utilized multiple methods. This included document review of relevant health and education policies and reproductive health curricula in the primary and secondary school system; ethnographic observation of secondary schools and vocational training center grounds, as well as nearby primary schools; key informant interviews with adults involved in girls’ daily lives (such as parents and teachers); and participatory activities with groups of

Downloaded from https://iwaponline.com/washdev/article-pdf/3/4/612/384762/612.pdf by guest
in-school and out-of-school girls (aged 16–19). This article will focus on the data that emerged regarding primarily girls’ voiced recommendations about MHM-related challenges in the school environment. The research team was based in each site for 3–4 weeks. Adult insights served to triangulate the findings and suggested recommendations. In each site, key informant interviews were conducted with 7–8 adults (total \( n = 15 \)), and weekly meetings utilizing participatory activities were conducted with four groups of girls (three in-school and one out of school group). Each group had approximately 16 girls (total \( n = 146 \)). The study was intentionally conducted with older adolescent girls, given that they were likely to have already experienced menarche and could reflect on how to improve the school environment and curriculum for future generations of girls. The study was approved by the Columbia University Medical Center Internal Review Board and the Royal University of Phnom Penh Administration.

The use of ethnographic observation at the secondary school sites and primary schools in the two sites was important for enabling the field research team, which included two young women (one American and one Cambodian), to observe schoolgirls’ daily interactions with peers and teachers. Observations provided context to girls’ voiced menstrual management-related concerns through observation of existing (or non-existing) water and sanitation facilities and other relevant aspects of the school environment, both during the primary school years when menarche can occur and during the secondary school years when monthly management is likely required. The use of key informant interviews with adults was essential for capturing the perspectives of parents, teachers, and other sources of influence and potential guidance for girls during this important transition through puberty. The use of participatory activities with groups of girls, a type of qualitative research methodology, was critical for empowering participants, and enabling discussion of sensitive topics (Minkler & Wallerstein 2003). Although a range of participatory activities was utilized, the findings from the following select activities will be discussed here: (1) True or false quiz: Each girl wrote ‘True,’ ‘False,’ or ‘I don’t know’ in response to 15 oral statements about puberty and menstruation; (2) Design a puberty curriculum: Girls were divided into small groups to describe what future generations of schoolgirls should learn about puberty; (3) Dream toilet: Groups of girls were asked to draw the ideal toilet (water and sanitation) facility for adolescent girls in school; and (4) One million riel: Groups of girls were asked to describe how they would improve the school environment to make it friendly for menstruating girls if they were given an imaginary enormous amount of funds. During group activities, the facilitators engaged in discussions with each group of girls about their responses and related topics.

Sample and recruitment

The administrators at selected schools (one secondary school in each site) and at the vocational training centers assisted the research team in identifying adolescent girls for the participatory activities. In order to capture a diversity of experiences, adolescent girls were recruited from a variety of socioeconomic and academic backgrounds. Groups of girls met once a week for three weeks in a confidential location when class was not in session. At the first meeting, informed consent was obtained from all participants. All sessions were conducted in Khmer, with careful note taking, and all written participatory activity data in Khmer submitted by the girls was subsequently translated into English for analysis by the larger research team. In each site, adults for the key informant interviews were similarly recruited through the school and vocational training administrators. Participants included male and female teachers, parents, custodians, administrators and shopkeepers. An effort was made to include men and women from a variety of educational backgrounds and marital statuses.

Data analysis

Grounded theory was used to analyze fieldnotes, narratives, analytic memos, and participatory activity data. A systematic approach was taken, beginning with multiple readings of all materials. Open coding was used to develop categories and axial coding was used to build connections between these categories. Senior Cambodian education and health experts provided feedback on preliminary findings. The following overarching themes were identified and will be discussed in this article: (1) gaps in menstrual knowledge and girls’ recommendations for MHM guidance; (2) MHM challenges
posed by school water and sanitation facilities; and (3) menstrual management, school absenteeism and participation. These themes will be illustrated using anonymous quotations from responses written during the participatory activities.

RESULTS

Gaps in menstrual knowledge and girls’ recommendations for MHM guidance

Most of the girls were found to have a basic knowledge regarding menstruation and puberty, including that menstruation is a natural process, that blood on underpants is a sign of menstruation, and that menstrual cramps are common. However, both rural and urban girls’ responses to the true/false quiz activity highlighted gaps in their understanding, including confusion regarding the average age of menarche and the average length of monthly menstruation, both of which involve a certain level of understanding of the physiological process of menstruation.

Girls reported that the Cambodian curriculum includes discussion of reproductive health and anatomy in biology class in Grades 7 and 9 (the first and last years of lower secondary school), but that more pragmatic details were needed on how to manage menses. Discussions with schoolgirls, along with observations at both primary and secondary schools, revealed that Cambodian classrooms typically involved large class sizes of mixed genders and rote memorization of course material. In terms of reproductive health lessons, both male and female teachers were reported by girls to frequently be too shy or lack the confidence necessary to teach the material in an effective way, and particularly in a way that encouraged questions. The girls reported that this was problematic because menstruation and puberty were often taboo subjects that were not to be discussed at home. Guidance from female relatives was reported to include reassurance that menstruation was natural, to include the provision of culturally appropriate materials for collecting the flow, but generally excluded an explanation of menstrual cramping or variability in terms of age of menarche, menstrual frequency or heaviness of flow.

During the puberty curriculum design activity, girls were asked how they preferred to learn about menstruation and growing up. Most in-school and out-of-school girls expressed a preference for a female teacher to teach and discuss topics related to girls’ and women’s health with them. The girls felt that a female teacher would be better prepared to discuss these issues from her own experience, and that the girls themselves would feel more comfortable asking a female teacher questions. However, one girl spoke about her experience of being taught by a female teacher in secondary school who was too shy to answer the students’ questions. She thought that a male teacher would be more confident. This suggests that though gender is important, it is the teacher’s perceived level of knowledge and confidence in discussing these practical issues that is crucial.

Most girls felt that they should learn about puberty around age 10–12 or before menarche, although there is no available data regarding the average age of menarche in Cambodia. Some girls reported that they had learned about the basics of puberty, such as the presence of body changes and occurrence of monthly bleeding, in Grade 7 (the first grade of lower secondary school), as follows the educational curriculum. However they expressed a strong desire for more in-depth and timely information or pragmatic guidance to adequately prepare them for menarche and menstrual management. As one girl responded:

‘The girls at age 12 should know about menstruation or students at grade 5 and up should be provided [information on] the subject. I learned about menstruation when I was at grade 9. At that time, I learned about how to take care of myself and how to be hygienic when we have our periods’ (Urban, Grade 11).

The implication of the above quote is that this girl learned about menstruation too late (in Grade 9), and that more pragmatic guidance on how to manage menses is needed earlier by girls. Overall, girls suggested that future generations of girls should learn about menstruation at an earlier age than they had.

MHM challenges posed by school water and sanitation facilities

The school WASH environment appears to create several challenges for Cambodian girls as they navigate the onset
of puberty, and specifically managing monthly menses. Observations conducted during the school day revealed that in both the urban and rural sites, the water and sanitation facilities on school grounds were inadequate for girls’ needs. More than 4,000 students were enrolled at the urban school and attended classes in two shifts. Students had access to 16 squat toilets, which were constructed in blocks. Two groups of five toilets each were clustered together, with each nominally assigned to boys or girls. This meant that overall, the school had approximately 125 students per toilet, but the ratio of girls to girls’ toilets was 170 per toilet (1,690 female students to five girls’ toilets in two shifts). In the rural secondary school, there were approximately 850 students, with eight toilets constructed, corresponding to a ratio of around 100 students per toilet. However, five of these toilets were locked, with the keys kept by nearby vendors who sell school supplies and snacks on school grounds, as they were presumably available to give students the keys as needed. This effectively meant that the ratio of students to easily accessible toilets was 283 per toilet. Adding to the toileting challenges in both schools, in the urban secondary school, dirt pathways to the toilets were rendered impassable after heavy rains, and in the rural secondary school, three of the eight toilets were not considered private enough by the girls to use, as they were not shaded by trees and therefore were perceived to be easily visible by boys and others from the school yard.

In both the urban and rural secondary school sites, toilet facilities were not regularly cleaned and lacked a reliable water source for hand washing, flushing, or washing of menstrual accident stains. Also absent from inside the toilet stalls were covered trash receptacles where used sanitary materials could be discretely placed. The girls reported never using the trash receptacles that were located outside of the toilet stalls for disposing of menstrual waste because they were visible to boys and other girls. At the urban school, girls and boys waited in large groups to use the accessible toilet stalls, but at the rural school, few students were observed entering bathroom facilities. When key informants in both school sites were asked if the school environment should be improved to accommodate menstruating young women, several responded that more school toilet facilities needed to be constructed, and in particular that a larger number of facilities would help the female students.

‘Women need a lot of hygiene, [they are] not like boys’ (Rural, Male vocational training center computer science teacher).

Other informants suggested a need for improvement in the existing toilet cleaning practices. A male Grade 12 science teacher at the rural secondary school hypothesized that girls did not use the school toilets because they were infrequently cleaned. The rural secondary school director expressed a need for improved access to water in order to adequately clean the school toilets, which he reported was done by the students only when the condition of the facilities called for it.

The girls themselves had useful recommendations for improving the water and sanitation facilities. These suggestions emerged primarily from the 100 million riels activity and the drawing of the ideal girl’s toilet. Several desired components were revealed through the girls’ drawings, including having a water source and rubbish bin inside the stall rather than a communal water source and rubbish bin outside the facility (see Figure 1). The most common water source drawn in the illustrations was a concrete water container, which is relatively inexpensive and does not require running water if clean water from another source is regularly provided. Rural students drew water containers more frequently than urban students, who sometimes included a sink for hand washing instead. This may be because urban girls are more familiar with sinks owing to Western influence in urban areas.

Another sanitation-related challenge that emerged from the drawings was girls’ significant discomfort with the current proximity of their sanitation facilities to the boys’ facilities. Field observations revealed that although some primary and secondary schools had divided the toilets by gender, the boys’ and girls’ toilets were frequently located within a few feet of each other. This meant that as girls and boys waited to use the toilet and as they exited the toilet, there was no separation and boys could easily observe girls’ behavior, including whether they were carrying a sanitary pad into the toilet or needed to clean themselves after a menstrual accident. Also absent from the drawings was girls’ toilet. Several desired components were revealed through the girls’ drawings, including having a water source and rubbish bin inside the stall rather than a communal water source and rubbish bin outside the facility (see Figure 1). The most common water source drawn in the illustrations was a concrete water container, which is relatively inexpensive and does not require running water if clean water from another source is regularly provided. Rural students drew water containers more frequently than urban students, who sometimes included a sink for hand washing instead. This may be because urban girls are more familiar with sinks owing to Western influence in urban areas.

Another sanitation-related challenge that emerged from the drawings was girls’ significant discomfort with the current proximity of their sanitation facilities to the boys’ facilities. Field observations revealed that although some primary and secondary schools had divided the toilets by gender, the boys’ and girls’ toilets were frequently located within a few feet of each other. This meant that as girls and boys waited to use the toilet and as they exited the toilet, there was no separation and boys could easily observe girls’ behavior, including whether they were carrying a sanitary pad into the toilet or needed to clean themselves after using it. In their drawings, some girls drew a wall separating the boys’ and girls’ bathrooms, while others specified 5–20 meters of space between the two genders’ facilities, and a few even suggested planting a tree between the two facilities.
in order to force a separation. Similarly, a group of girls at the urban secondary school responded during the 100 million riel activity that the two blocks of gender-specific toilets built next to each other in the school were not appropriate, and that the boys' toilets should be located on a different pathway from the girls' toilets, and perhaps even on the other side of the school yard. Another group of girls responded similarly:

'The boys should not be allowed to walk past the [girls'] toilets. Boy's bathrooms should be far away from the girls' bathrooms' (Urban, Grade 11).

The adults involved in adolescent girls' lives also recognized the need for meaningful separation between boys' and girls' toilets. A female biology laboratory teacher at the urban secondary school recommended that to resolve this challenge, one set of non-gender-specific toilets located near the cafeteria could be assigned to girls and the other at the back of the campus could be assigned to boys.

A final sanitation-related challenge that emerged for girls through observations conducted at local markets and from discussions with female teachers and young girls in both sites was the nature and availability of the sanitary materials girls are currently using to manage monthly menses. In general, and depending on family income level and other factors, girls use sanitary pads, rags or tissue paper to manage their monthly menses. The urban school was located near a major street and directly across from a market where sanitary pads could be purchased for around US$0.50 each, which was prohibitively expensive for poorer girls. The rural school, however, was located more than 2 kilometers from the closest town where sanitary pads were sold. Girls in both sites reported that if they needed a pad while at school, they would ask a friend for one or return home. This would mean that girls who lived near school might miss just one class, but girls who lived far away might miss the rest of the day's class. When asked what improvements could be made to the school environment to help menstruating girls feel more comfortable, several groups of girls suggested increasing access to sanitary materials, including:

'[I want] pads in the bathroom because it would be easier when we have our period at school' (Rural, Grade 10).

'Have a person selling pads [near the school] in case we have our period accidentally' (Urban, Grade 11).

When a group of rural girls were asked how sanitary pads could be provided in the toilet stall, they suggested that someone, perhaps a teacher or groundskeeper, be appointed to take charge of collecting funds and placing the pads in the toilet stalls. An additional suggestion was made regarding the vendors on the school grounds who sell food, school supplies and novelty items. Students were able to visit these stalls throughout the school day in both the rural and urban school. One adult female sandwich vendor at the rural secondary school reported that she had already considered selling pads at her stand based on the obvious demand. She had also considered a basic business plan...
including price mark-up needed to make a profit and a discreet publicity plan. It was clear both from the discussion about expanding the vendor’s small business to include sanitary materials and girls’ suggestions themselves that sanitary pads be made available that there is currently a lack of discreet, convenient access to menstrual management materials on or near school grounds.

**Menstrual management and school absenteeism**

When asked whether young girls faced constraints at the onset of menses, several informants discussed the traditional belief that young girls should stay at home during their first period to learn about womanhood and protect themselves from the outside world. Although most of the key informants and girls reported that modern Cambodian girls no longer follow this belief, a few discussed the school absenteeism that occurs due to monthly menstrual pain. A computer science teacher at the rural vocational training center said that he did not allow his sister to attend school while menstruating because he feared that she would not be able to take care of menstrual-related needs while at school. He said that girls should stay home during the first and second day of their period each month in order to manage the blood, but afterwards, they could attend school. In contrast, a female Khmer literature teacher at the rural secondary school suggested that adolescent girls did not need to stay home during their monthly menstruation, but that they could if they experienced menstrual pain. The rural school director also reported that girls are sometimes given permission to leave school because of menstrual cramps, indicating girls are not always overly shy about reporting discomfort to teachers. Our overall findings suggested that although the traditional Cambodian practice of staying home during the first menstruation is fading, some girls may still be missing school due to an inability to adequately manage menstrual flow and pain or discomfort while at school.

Adolescent girls in both the urban and rural sites suggested additional changes in the school environment to facilitate the management of menstrual pain. Some of the girls understood that exercise during menstruation can decrease menstrual pain and cramping. However observations at the urban and rural schools revealed that while boys played basketball, hackey sack and soccer on school grounds, the girls rarely participated. At the urban site, some girls were observed participating in stretching and light cardio exercise during bi-weekly physical education sessions. An out-of-school girl in the urban area suggested that more exercise materials be provided for girls to use during break times. In addition, girls expressed a desire for a private space on the school grounds where they could go and rest from menstrual pain or to change sanitary materials.

‘[There should be] resting rooms for girls in case they need it when they have cramps during their period’ (Urban, Grade 12).

‘A changing room would make it easy to change pads and there would be less disease’ (Urban, Out-of-school).

These comments reflect girls’ unmet MHM-related need for privacy while at school. This insufficiency in the school environment was also realized by at least one male teacher at the urban school, who commented that girls need a changing room in order to better manage their menstrual flow in privacy. Based on girls’ comments on the necessity of privacy from boys and other girls when washing after using the toilet, such a changing room would need to be accessible from girls’ toilet facilities.

**DISCUSSION**

In this article, we explored Cambodian adolescent girls’ own suggestions for improving pubertal education and the school environment to accommodate girls’ menarche and menstrual management needs. The findings suggest there is no noticeable difference in general menstrual knowledge based on urban or rural status. Cambodian post-pubescent girls in both the urban and rural sites were aware of basic menstrual information, such as that menstruation is a natural and that blood on underpants signifies the monthly flow, but lacked scientific knowledge of the physiological menstrual process, including an understanding of a normal menstrual cycle and monthly flow. A study in urban Pakistan revealed girls had a similar understanding that menstruation is a natural process, but lacked knowledge about the physiology...
menstrual hygiene guidance, similar to findings from participatory research conducted with girls in Tanzania and Ghana, including the suggestion that information on menstruation be conveyed at an earlier grade than is currently outlined in the school curriculum (Sommer 2009a; Sommer & Ackatia-Armah 2012). Although the Cambodian government’s existing Grade 7 and Grade 9 biology curricula include lessons on reproductive health and anatomy, the study findings suggest the need for the conveyance of MHM-related guidance before girls reach menarche and must learn to manage menses in school.

A preference for receiving guidance from knowledgeable, confident, and preferably female teachers was demonstrated in girls’ responses. This preference for female teachers may reflect in part the lack of female teaching staff above the primary school level in Cambodia, particularly in the rural areas. At urban primary schools in Cambodia during the 2010–11 school year, 66.7% of teachers were female; while at rural schools, 41.4% of teachers were female. At the secondary school level, 42.3% of urban teachers and 33.2% of rural teachers were female (Ministry of Education, Youth and Sport 2012). One reason for this discrepancy between the proportion of female teachers in urban and rural schools may be that cultural norms hold that females should not be posted far from their family homes (Bennell 2004). Though Cambodian girls did not mention teachers as a source of menstrual guidance, female teachers should be encouraged to provide frank and appropriate classroom instruction as well as one-on-one advice or assistance in locating sanitary materials. An alternative or complementary solution may also be the dissemination of a girl’s puberty book aimed at 10–14 year olds, similar to an approach developed in Tanzania (Sommer 2011), an approach that is currently under way in Cambodia. The latter takes some of the burden from teachers who may be uncomfortable (or even inappropriate if male) conveying guidance to girls on MHM, and also creates a private learning sphere through girls reading (in Khmer or English) the menstrual stories and puberty guidance contained in the material. Similar puberty books have been adapted from the Tanzania example to Ghana, Ethiopia, Zimbabwe, Uganda, Nepal, and are currently under development in Malawi (see: www.growandknow.org).

Cambodian schoolgirls also expressed a need for programs and policies that improve the quantity and quality of water, sanitation and hygiene facilities in schools in order to allow them to manage their monthly menstruation in a more private and hygienic way. The girls’ voiced requests for more girls’ toilets support the World Health Organization’s (WHO) recommendation that schools maintain a ratio of one latrine to 30 girls. In order to achieve this ratio, however, the urban school would be required to construct 25 girls’ toilets and the rural school would need 10 additional girls’ toilets. Cambodian public school budgets are already strained, and without outside donor funding or support, such construction may be unlikely to occur in the near future.

Cambodian girls also identified specific MHM-related interventions that would improve the quality of sanitation facilities, such as improvements in the availability of water and the cleanliness of existing facilities. An evaluation conducted in India of the five-year impact of UNICEF’s School Sanitation and Hygiene Education program similarly highlighted a need for improved cleanliness, which it associated with higher toilet use among primary school students in intervention sites (interventions illustratively included the separation of facilities by gender, a focus on child hygiene behaviors, and family outreach). In addition, girls in the control schools reported problems managing menstruation at school twice as often as girls at intervention schools, and both boys and girls expressed a desire for locks on latrine doors and cleaning tools inside the latrine stalls (Mathew et al. 2009). Cambodian girls also emphasized the need for a meaningful separation between boys’ and
girls’ toilets. This study responded to the recommendation of Birdthistle et al. (2011) to define a ‘separate’ toilet. Girls requested an actual physical barrier or significant geographic distance to ensure privacy from the view of boys. An increased number of girls’ toilets, a regular system for toilet cleaning, and ensuring a meaningful separation between gender-assigned facilities are the MHM-specific requirements recommended by Cambodian girls to ensure that menstruating schoolgirls can utilize sanitation facilities with dignity and confidence.

Although a number of important insights were gained from this study with adolescent girls in rural and urban Cambodia, the study had some limitations that are important to note. The primary limitation was the small number of research sites. The focus on two sites was necessary for this comparative case study in order to allow in-depth qualitative and participatory research with girls to be conducted. Preliminary feedback from key education and gender experts in Phnom Penh suggests that girls may in fact encounter similar challenges in other regions of the country; however additional research is needed to identify any additional social, cultural or environmental MHM-related challenges that may exist for schoolgirls living in other areas of Cambodia.

Despite the above-mentioned limitations, specific recommendations can be directed at WASH practitioners in the Cambodian context given the numerous excellent suggestions made by girls regarding how to make school environments more comfortable and suitable for managing monthly menses in co-ed settings. The primary recommendation for all WASH practitioners would be to always engage girls (and female teachers) in the effort to identify what WASH-related interventions should be prioritized and implemented to enable successful, comfortable, private and dignified management of monthly menses while attending school. Additional data should be gathered on girls’ experiences in a range of Cambodian school contexts across the country, with a particular focus on aspects of the school WASH facilities (e.g. number, quality, privacy, cleanliness of latrines; easy access to water inside or near to latrine stalls; mechanisms for disposal of used sanitary materials; the provision of MHM guidance to girls). The latter may ultimately be deemed the responsibility of education and reproductive health experts working in schools in Cambodia, emphasizing the inter-disciplinary and collaborative nature of addressing the MHM challenges facing girls in school. The gathered data on the range of mentioned issues can ultimately ideally be channeled into practice and policy in the Cambodian context.

CONCLUSION

The findings from this comparative case study with girls in Cambodia highlight the many water and sanitation related challenges that girls encounter in attempting to manage their menstrual monthly flow successfully in school environments. The absence of sufficient pragmatic menstrual management guidance for Cambodian girls also presents a barrier for schoolgirls today in both the rural and urban areas studied. Although relatively small in size, the study’s findings identify key potential MHM-related interventions for water and sanitation practitioners and policy makers to consider in schools across Cambodia, along with gaps for future research to explore. Most importantly, the findings were drawn directly from Cambodian adolescent girls’ lived experiences and their own recommendations for how they might better conduct successful menstrual management in school in order to participate fully in the academic experience.

ACKNOWLEDGEMENTS

We would like to express our deepest gratitude to our Cambodian research assistant Phadalis Pheun, our Cambodian colleagues in the Ministry of Education and in the field sites, and to all the young women and adults in their lives who so graciously provided time and information that made this research possible. They must remain anonymous for the purposes of this research, but we hope they will find the results of the study true to the insights they provided.

REFERENCES

International Water and Sanitation Centre and WaterAid, The Netherlands.
Birdthistle, I., Dickson, K., Freeman, M. & Javidi, L. 2011 What is the impact of separate toilets for girls at schools on girls’ education outcome? A systematic review of the evidence. MARCH Centre at London School of Hygiene and Tropical Medicine and EPPi-Centre, University of London, UK.
Sommer, M. & Ackatia-Armah, N. 2012 The gendered nature of schooling in Ghana: Hurdles to girls’ menstrual management in school. JENDA 20, 63–79.