

Improving Menstrual Health in Urban Schools of Addis Ababa, Ethiopia: A social ecosystem evaluation



Since 2019, Splash has partnered with 500+ government schools in Addis Ababa through a citywide school-based program to foster holistic improvements water, sanitation and hygiene (WASH) and a strong focus on menstrual health (MH). From trainings to pad-drives, mentorship to infrastructure improvements, the MH activities aimed to shape the MH social ecosystem with girls, boys and mothers.

To explore the impacts of this program, the team conducted a three-phase evaluation spanning 2019 to 2024. The evaluation explored five sub-cities with girls before and after menarche, boys, and mothers of female students. Surveys captured shifts in knowledge, practices, stigma, school participation, and the support students received from peers and caregivers. These data were complemented by qualitative insights that helped illuminate how students navigated menstruation at school, including the role of bathroom access and broader social norms.

The analysis offers meaningful, policy-relevant evidence on how comprehensive menstrual health programming can influence the school environment in urban public-school settings.

HIGHLIGHTS



Girls feeling able to manage MH at school

↑ from 74% to 99%



Girls missing school due to MH

↓ from 16% to 3%



Access to emergency menstrual materials

↑ from 64% to 87%



Average belief in myths by girls

↓ from 50% to 8%



SOCIAL ECOSYTEM

The social ecosystem for menstrual health (MH) centers on pre- and post-menarche individual girls, who are influenced by interpersonal, institutional and societal factors as illustrated in **Figure 1**. Splash’s programming particularly focused on the influence of peers (other girls), boys and mothers as well as the institutional enabling environment.

Splash’s programming aimed to impact positive change in girl’s empowerment and menstrual hygiene management (MHM) using a set of interventions across the social ecosystem as illustrated in **Table 1**. Societal impacts were not explored.

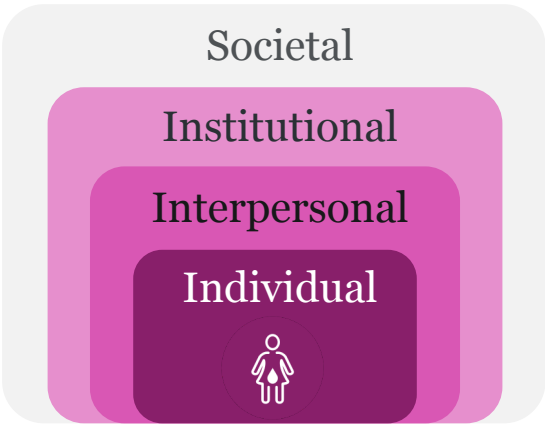


Figure 1: Adapted social-ecological model framework [1,2].

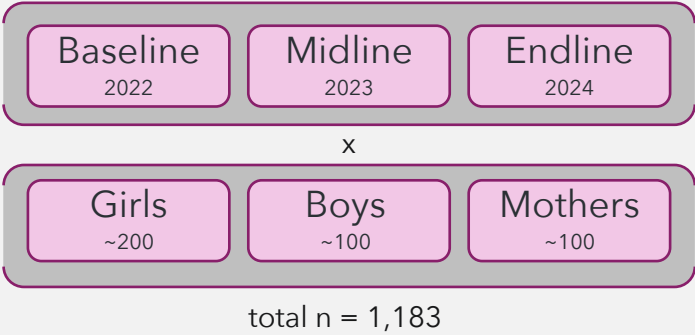
Table 1: Illustrative inputs and activities to shape the MH social ecosystem in Addis Ababa.

Level	Focus	Inputs → Activities
Individual	Age-Appropriate Curriculum and Reference Materials	Provide access to Rosie’s World (Take Action), Teacher Training Reference Guide, and Growth and Changes materials → Train teachers in MH curriculum
Interpersonal	Peer Mentoring Programming	Provide peer-mentoring materials, including guide and schedule → Four peer mentoring sessions/year
	Male Student Puberty workshops	Provide boy-puberty-materials, including video, workshop discussion guide, and advocate pledge certificate → Two workshops offered/year
	Parent Engagement Program	Provide parent-engagement materials, including virtual support group moderators guide, reference brochure, and discussion guide → One session offered/year
Institutional	Infrastructure Improvements	Girl friendly infrastructure designs for schools → infrastructure installed with capacity strengthening
	Pad Drives	Provide teachers and school administrator with training to initiate a school pad drive → Pad drive conducted at least once/year

METHODS

This analysis relied on nine program monitoring surveys (n=1,183) and document review. The surveys explored the experiences of 200 girls, 100 boys and 100 mothers in each round from 10 schools supported by Splash. The 10 schools were selected from a sampling frame of 29 schools representing the 500+ schools supported. A full sample was obtained during baseline and midline. At endline some schools had slightly lower response rates.

The study was approved by City Government of Addis Ababa’s Health Bureau Ethical Clearance Committee with protocol number A/A/4524/227.



The surveys explored individual knowledge, attitudes, practices, experiences in school toilets, teasing and support, perceptions and basic demographic information.



INDIVIDUAL: GIRLS' EMPOWERMENT

Focused on individual empowerment and practices, girls' empowerment increased from baseline to endline across all main indicators. This included forms of empowerment both as '*power-within*' where girls felt more personal agency leading to improved practices (**Figure 2**), as well as '*power-with*' where girls felt more a greater sense of social support (**Figure 3**). For example, girls' confidence managing MH at school rose from from 56% to 69% and a feeling sense of community and support about menstruation rose from 72% to 79% of girls.

Additionally, disposable pad use rose for both post menarche girls and their mothers while the use of cloths decreased for girls as illustrated in **Figure 4**. Importantly, in this urban context, there was a strong preference for disposal pads which were seen as cleaner and more modern.

Figure 2 **MH AT SCHOOL**
% OF GIRLS...

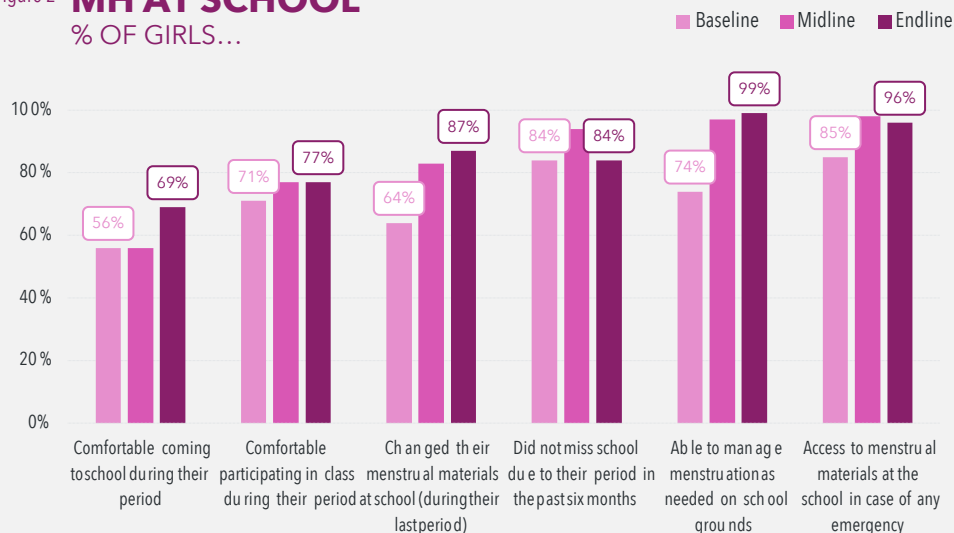


Figure 3 **MH SUPPORT**
% OF GIRLS...

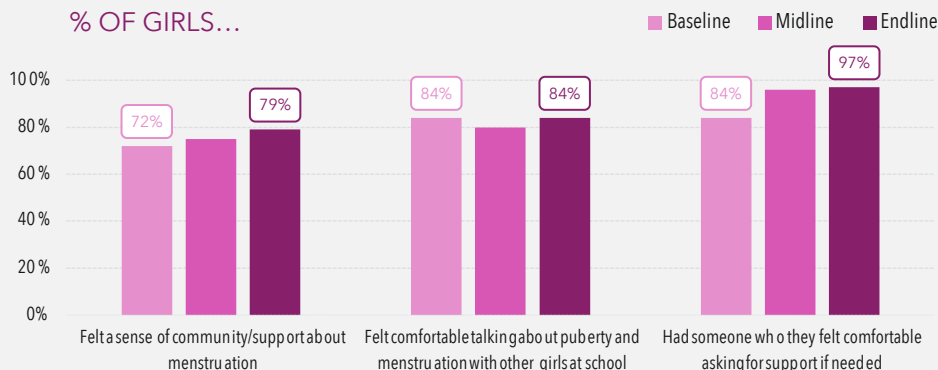
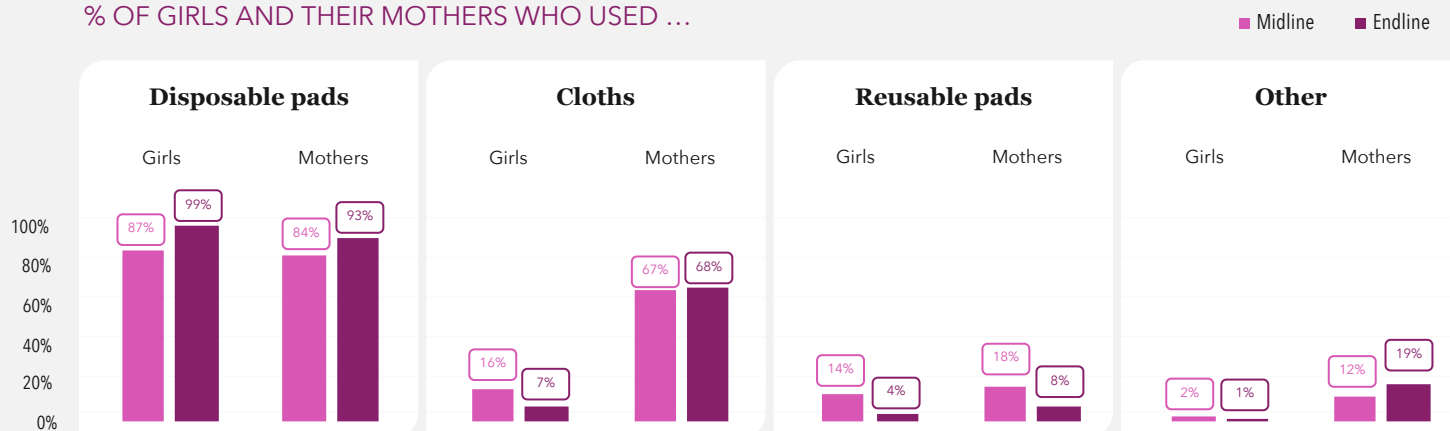


Figure 4 **MH MATERIALS**
% OF GIRLS AND THEIR MOTHERS WHO USED ...



Multiple response options allowed and all responding girls were post-menarche.



INDIVIDUAL & INTERPERSONAL: KNOWLEDGE & AWARENESS

The program aimed to improve knowledge and awareness about mensuration for girls, boys and mothers through workshops, awareness materials and support groups. This included knowledge of basic anatomy, changes during puberty and menstruation.

To explore the impact of these activities over time, we summed the number of correct answers to 33 questions about MH knowledge. As shown in **Figure 5**, MH knowledge increased among girls by 17% (post-menarche), 10% (pre-menarche) and 6% by mothers. However, boys showed minimal knowledge gain (+1%) and not retain more knowledge about male puberty than female puberty.

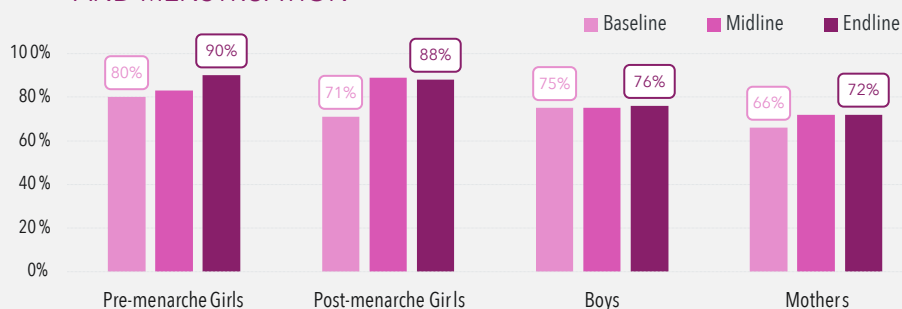
An anatomy training in progress by teachers.



Figure 5

AWARENESS

% OF RESPONDENTS WITH BASIC KNOWLEDGE OF PUBERTY AND MENSTRUATION



MENSTRUATION MYTHS

Myths about menstruation remain a complicated aspect of MH work as they are often connected to stigmas, taboos and beliefs. The awareness materials directly aimed to address some of the most common negative myths in Ethiopia.

The survey asked between 5 and 11 myths and the average agreement with assessed myths is indicated in **Figure 6**.

Overall, belief in menstrual myths dropped substantially over the course of the project. Among girls, average agreement with the listed myths fell from 50% at baseline to 8% at endline. Boys showed a similar pattern, with average agreement falling by 20 percentage points, and mothers saw a 14-percentage-point reduction.

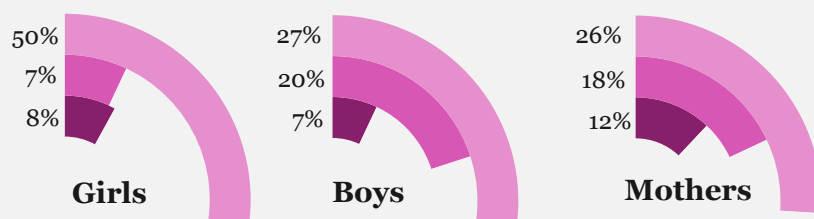


Figure 6

BELIEF IN MYTHS

AVERAGE % OF RESPONDENTS WHO BELIEVED MENSTRUATION RELATED MYTHS

Example Myths

Menstruation means a girl is ready for marriage.

Menstruating girls should not enter the kitchen or cook food.

Menstruating girls should not drink water.

Menstruating girls should not eat spicy food.

Menstruating girls should not drink hot drinks like tea because it may cause heavy bleeding.

Between 5 and 7 myths assessed at baseline, dependent on respondent group.
11 myths assessed at mid- and endline for all respondents.



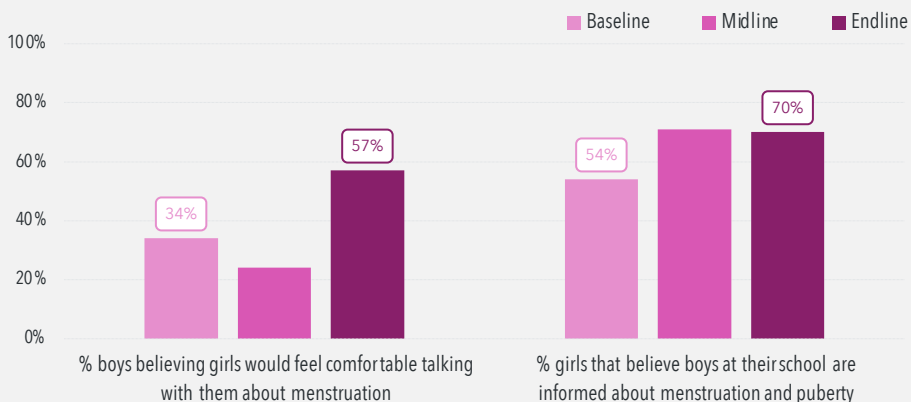
INTERPERSONAL: SUPPORTIVE SOCIAL RELATIONSHIPS

Including boys in menstrual health programs led to clear improvements in empathy and awareness. As seen in **Figure 8**, by endline, far more boys believed girls would feel comfortable talking with them about menstruation (+23%), and girls increasingly viewed boys as informed about puberty and MH topics (+16%). These shifts suggest that shared learning helped reduce discomfort and opened space for more supportive conversations across genders.

Nonetheless, teasing related to puberty and menstruation remained a small but persistent issue (**Figure 9**). Although the overall frequency declined slightly, many students continued to report witnessing or experiencing teasing by boys. At the same time, more boys described stepping in when they saw teasing occur, indicating early movement toward positive bystander behavior and a more respectful school environment

Figure 8

BOYS' EMPATHY % OF BOYS OR GIRLS WHO...



A sample of materials used in Male Student Puberty workshops on allyship and support.

The Puberty Experience

Adolescence is the transitional phase of growth and development between childhood and adulthood. As children approach adolescence, their bodies begin to produce chemicals called hormones. These hormones cause changes in bodies and emotions. This time of change is called puberty. It is normal, natural, and we all go through it!

Puberty for Boys

Puberty usually begins between the ages of 10 and 14. Boys may find that their feelings and interests change during puberty. Physical changes also occur. Here are some changes boys may experience during puberty:

- Voice changing
- Penis and testes begin to grow
- Wet dreams
- Growing hair in new places
- New body odor
- Oily skin & acne
- Changes in mood, emotions, and interests
- Developing Testes
- Starting to menstruate

Puberty for Girls

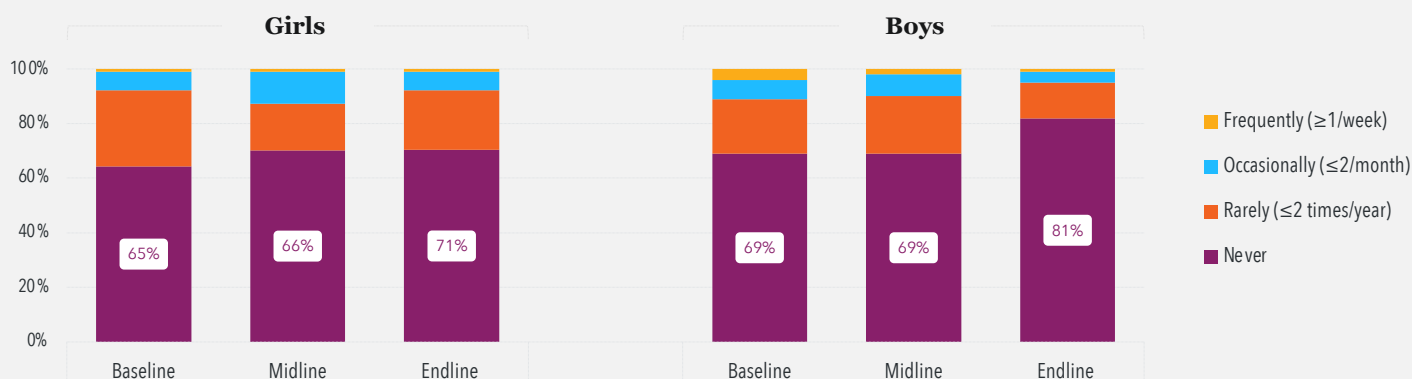
Puberty begins between the ages of 8 and 14. During puberty, your feelings, interests, and emotions will change. Physical changes also occur. While changes at puberty differ from person to person here are some changes girls may experience during puberty:



Figure 9

TEASING

% OF BEING TEASED OR WITNESSING BEING TEASED BY BOYS AT SCHOOL ABOUT PUBERTY OR MENSTRUATION





INTERPERSONAL: SUPPORTIVE MATERNAL RELATIONSHIPS

Supporting mothers to speak to and support their daughters was also an important determinant to address. More mothers described initiated conversations about menstruation and puberty with their daughters over time. Among mothers whose daughters had already reached menarche, initiation rose from 85% at baseline to 95% at endline (**Figure 10**). For mothers of pre-menarche girls, initiation also increased 10% by endline.

Comfort discussing these topics also shifted. Mothers' comfort talking with daughters increased from 88% to 96% as seen in **Figure 11**, while comfort discussing puberty and menstruation with sons declined by 13%.

Most girls learned about which MH products to use from their mothers and over the course of the project mothers' knowledge of menstrual health products improved substantially. Knowledge of reusable pads and hoe to maintain their hygiene while using these types of products rose from 17% to 84% (**Figure 12**). However, this did not translate into use of reuseable pads (**Figure 4**) as young girls had a strong desire to use disposable products.



A sample of materials used in Parents Engagement program.

Figure 10

STARTING CONVERSATIONS

% OF MOTHERS THAT INITIATED CONVERSATIONS ABOUT MENSTRUATION AND PUBERTY WITH THEIR DAUGHTERS

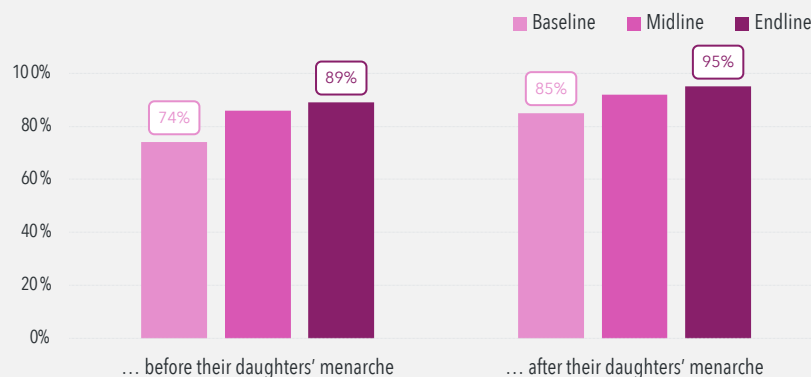


Figure 11

OPEN TO CONVERSATIONS

% OF MOTHERS FEELING COMFORTABLE DISCUSSING PUBERTY AND MENSTRUATION WITH THEIR ...

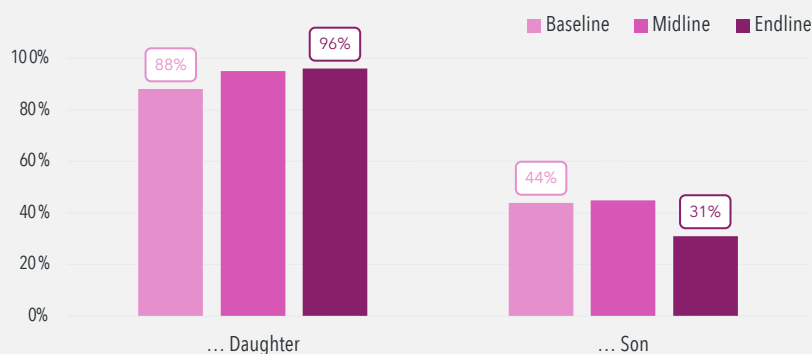
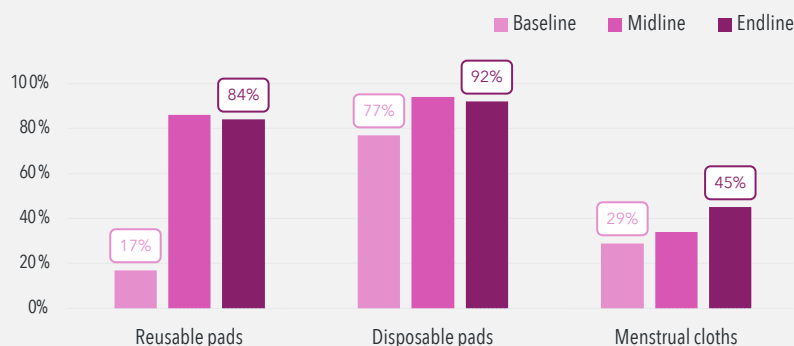


Figure 12

MOTHERS' MATERIALS KNOWLEDGE

% OF MOTHERS WITH KNOWLEDGE OF THE FOLLOWING MH PRODUCTS AND THEIR PROPER HYGIENIC USE AND DISPOSAL





INSTITUTIONAL: SUPPORTIVE BUILT ENVIRONMENT

To improve the built environment for improved sanitation and hygiene, the program worked with the Addis Ababa Bureau of Education (BOE) to improve the conditions in all school bathrooms, by collaboratively designing a more cost-effective, girl-friendly toilet block. However, the construction of improved toilet blocks was the responsibility of BOE and was delayed. Therefore, progress on the built environment saw lower levels of improvements.

The program also conducted janitor training which specifically focused on building the capacity of school cleaners to maintain sanitation infrastructure.

Comfort with the cleanliness, privacy, and safety of bathrooms remains limited (**Figure 13**), this could also be due to increased awareness of what constitutes a good bathroom. Nonetheless perceived levels of cleanliness did increase over time between baseline and endline for students, while decreasing for mothers (**Figure 14**).



Figure 13 **COMFORT WITH BATHROOMS**
LEVEL OF COMFORT WITH THE BATHROOMS'...

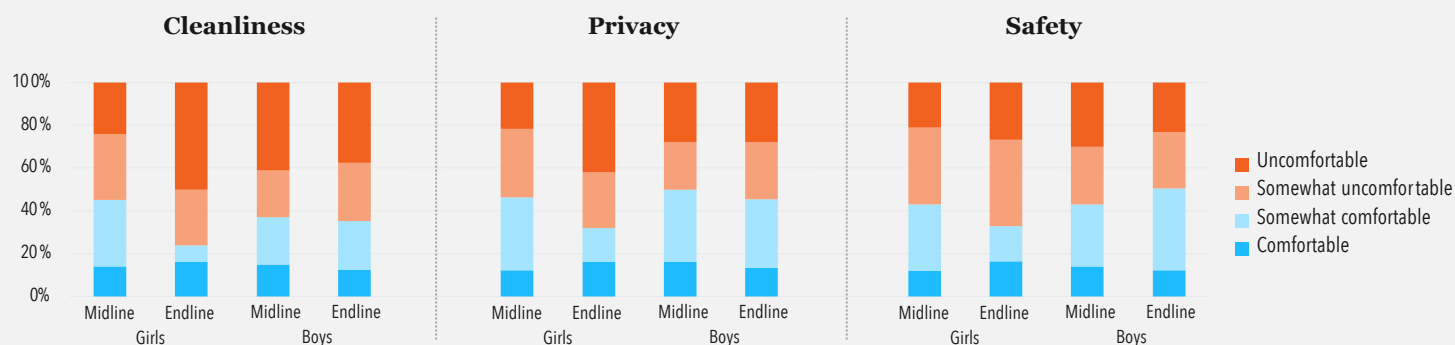
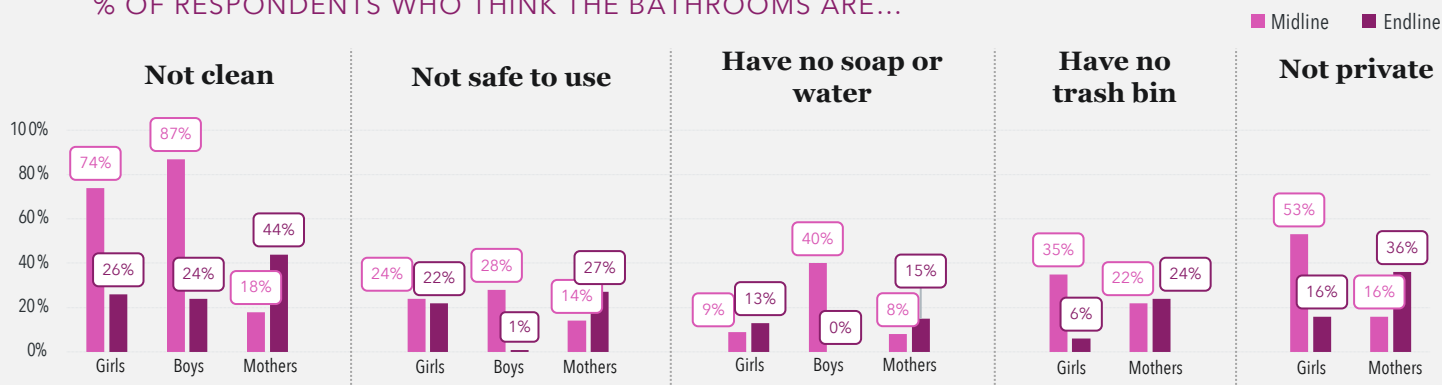


Figure 14 **PERCEPTIONS OF BATHROOMS**
% OF RESPONDENTS WHO THINK THE BATHROOMS ARE...





LESSONS

- **A social-ecosystems approach strengthens program impact.** Working across girls, boys, mothers, peers, and teachers helps address MH challenges holistically. This approach supports more coherent intervention packages reinforcing learning across settings.
- **MH knowledge gaps persist, especially among boys.** Even with program exposure, boys continue to show lower understanding of menstruation and puberty. These gaps limit their ability to act as supportive peers and contribute to ongoing stigma.
- **Harmful myths and social norms remain influential.** Beliefs such as “menarche signals readiness for marriage” still appear among students and caregivers. These norms affect expectations around girls’ roles and require sustained community-level engagement.
- **Infrastructure challenges continue to hinder effective MH management.** Cleanliness, privacy, and reliable access to soap and water remain inconsistent across schools. These conditions directly shape girls’ comfort, participation, and ability to manage menstruation safely.
- **Male engagement needs to be deeper and more intentional.** Boys showed improvements in empathy but continued to tease and hold misconceptions. Stronger, targeted programming is needed to shift norms and encourage positive bystander behavior.

RECOMMENDATIONS

- **Continue holistic MH programming that includes families, peers, and infrastructure.** Multi-layered approaches remain essential for addressing knowledge, norms, and practical barriers. Strengthening school facilities alongside education ensures girls can manage menstruation with dignity.
- **Scale digital and mass media to normalize MH conversations.** Media platforms can shift norms by making menstruation more visible and relatable. Story-driven content—such as radio dramas or short videos—can reach broad audiences and spark dialogue.
- **Advocate for curriculum integration and system-level change.** Embedding MH into national education frameworks ensures sustainability beyond project cycles. Policy engagement can help standardize teacher training, materials, and expectations.

REFERENCES

1. Ssemata, A.S., Ndekezi, D., Kansime, C., Bakanoma, R., Tanton, C., *et al.* Understanding the social and physical menstrual health environment of secondary schools in Uganda: A qualitative methods study. *PLOS Global Public Health* **3**, e0002665 (2023). <https://doi.org/10.1371/journal.pgph.0002665>
2. Sharma, A., McCall-Hosenfeld, J.S. & Cuffee, Y. Systematic review of menstrual health and hygiene in Nepal employing a social ecological model. *Reproductive Health* **19**, 154 (2022). <https://doi.org/10.1186/s12978-022-01456-0>

FURTHER READING

- Harper, J., Cruz, E., Nicoletti, C., Conroy, K., Haile, A., Moges, B. Improving the Menstrual Health Social Ecosystem in Urban Schools of Addis Ababa, Ethiopia: A Program Evaluation. *Manuscript under review*. https://osf.io/preprints/osf/6bhsf_v1

Further information:

splash.org/our-work/project-wise

Authors:

Jess MacArthur, James Harper, Emily Cruz and Chris Nicoletti

Recommended Citation:

MacArthur, J., Harper, J., Cruz, E., Nicoletti, C. (2025). Improving Menstrual Health in Urban Schools of Addis Ababa, Ethiopia: A social ecosystem evaluation. Project WISE Learning Brief.

