

# MENSTRUAL MANAGEMENT AMID DUAL DISASTERS:

CYCLONE IDAI PLUS COVID-19  
IN SOFALA, MOZAMBIQUE

QUALITATIVE LEARNING STUDY  
DECEMBER 2020



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## ABOUT BE GIRL

**Be Girl** is a social enterprise that takes a design-driven approach to menstrual health and hygiene so that all girls can understand, own, and love their bodies. Be Girl works to achieve this vision through sustainable, quality menstrual products, age-appropriate menstruation education programs, and transformative messaging for a stigma-free world. Be Girl is headquartered in Washington, DC, USA, and operates a subsidiary, Be Girl Mozambique, in Maputo.

## ABOUT THE PARTNERS

The **United Nations Population Fund (UNFPA)** is the sexual and reproductive health agency of the United Nations. Its mission is to deliver a world where every pregnancy is wanted, every childbirth is safe and every young person's potential is fulfilled. Active in Mozambique since 1979, UNFPA is currently supporting programs linked to governance, social issues and the economy.



**Plan International** is an independent development and humanitarian organization that advances children's rights and equality for girls. Plan strives for a just world, working together with children, young people, and supporters and partners. Plan has been operating in Mozambique since 2006, prioritizing quality education, sexual and reproductive health and rights, skills training and job opportunities, and youth leadership.



The **Ministry of Education and Human Development (MINEDH) of Mozambique** is the central organ of the State apparatus which, according to the principles, objectives and tasks defined by the Government, plans, coordinates, directs and develops activities in the field of education, contributing to the raising of patriotic awareness and strengthening Mozambican national unity.



## INTRODUCTION AND BACKGROUND

Cyclone Idai, one of the worst tropical cyclones on record to affect Africa and the Southern Hemisphere, made landfall in the Sofala province of Mozambique in March of 2019. As of September 2020, many of Sofala's residents, including adolescent girls trying to safely manage their menstrual cycles, were still living in resettlement centers. In addition, these girls were contending with the devastating impacts of COVID-19 on their daily lives. The following study is set against this backdrop.

### Purpose of the study:

This study initially aimed to gather quantitative data about the effectiveness of a menstrual health and hygiene intervention (sustainable products and educational workshops) on girls' knowledge and attitudes about menstruation and their ability to participate in daily activities within Sofala cyclone resettlement centers. With the onset of the COVID-19 pandemic during implementation, the study shifted its approach to collect qualitative data, which can be carried out more safely in small groups outside without passing surveys and pens. The study aims to address the evidence gap regarding girls' experiences with menstruation during COVID-19 and to capture participants' perceptions of the menstrual management intervention within this evolving context.

### Menstrual management during emergencies:

On a global level, addressing menstruation-related needs is a necessary step toward enabling girls and women to equitably participate in society.<sup>1</sup> Menstrual management affects their basic mobility and confidence, thereby affecting their education, health, hygiene, and economic development and, ultimately, global progress toward gender equity.<sup>2 3</sup> Effective menstrual management requires an ecosystem of support that includes menstrual materials, information and

education, positive social norms, sanitation infrastructure, and supportive policies.<sup>4</sup>

Humanitarian settings, locations in need of emergency aid such as Mozambique's Sofala province post-Cyclone Idai, can exacerbate existing gender inequities and harmful social norms.<sup>5</sup> Gender analyses are necessary to understand such risks – including inadequate menstrual management – as well as strategies to address them.

In humanitarian settings, girls and women may be forced to be highly mobile on a daily basis, to travel far to collect firewood and water (often in unfamiliar and sometimes unsafe settings), and to exist with a general lack of shelter and privacy. Despite efforts to create decent living standards within resettlement centers, education, healthcare, sanitation, and economic opportunities are frequently lacking.<sup>6</sup> Although advocates have succeeded in increasing awareness about the importance of menstrual management in humanitarian settings, historically this need has been treated as a secondary consideration in response efforts.

Moreover, while the practice of distributing hygienic non-food items (“hygiene kits” or “dignity kits” including menstrual products) to survivors of disasters has expanded over the past decade, studies have consistently pointed to the need for contextualized, site-specific interventions that consult target populations during the design phase.<sup>7</sup>

An early evaluation of hygiene kits carried out in 2011 for UNFPA's interventions across four countries (including Mozambique) found that the kits had positive effects on recipients' mobility and ability to participate in daily activities but noted overall that their effectiveness varied greatly according to site-specific circumstances and needs.<sup>8</sup> Many of these kits relied on the prevailing market option of disposable sanitary pads. This option, however, too often provides an imperfect solution to menstrual management in

<sup>1</sup> Julie Hennegan et al., “Women's and girls' experiences of menstruation in low- and middle-income countries: A systematic review and qualitative metasynthesis,” *PLOS Medicine* 16, no. 5 (May 16, 2019).

<sup>2</sup> Susannah Anderson, Hannah McKinney, Tatiana Reyes Jové, Cidia Chissungu, “Menstrual health and hygiene in Mozambique: Evidence of interventions that improve girls' full and equitable participation in society,” *Be Girl, Inc* (2020).

<sup>3</sup> Cristina Ljungberg and Sue Coates, “Investing in Menstrual Health Is an Investment in Global Health,” *Stanford Social Innovation Review* (September 3, 2020).

<sup>4</sup> “Guidance on Menstrual Health and Hygiene,” *UNICEF* (March 2019).

<sup>5</sup> Esther Richards et al. “Gender equality needs critical consideration in conflict-affected settings,” *Development in Practice* 25, no. 3 (April 14, 2015).

<sup>6</sup> Philip Kleinfeld, “Cyclone Victims Face Bleak Prospects in Mozambique Resettlement Sites,” *The New Humanitarian* (December 10, 2019).

<sup>7</sup> Crystal VanLeeuwen and Belen Torondel, “Improving Menstrual Hygiene Management in Emergency Contexts: Literature Review of Current Perspectives,” *International Journal of Women's Health* 10 (April 10, 2018): 169–86.

<sup>8</sup> Abbott, L et al., “Evaluation of UNFPA's Provision of Dignity Kits in Humanitarian and Post-Crisis Settings,” (January 1, 2011).



humanitarian settings, particularly given that such kits are frequently provided only during the first three months of an emergency.<sup>9 10</sup> Disposable pads must be procured repeatedly, they can cause additional strain to already-overwhelmed sanitation systems within resettlement camps, and they are unusable without underwear. Reusable products such as menstrual cups, pads, and absorbent underwear offer alternative solutions, but empirical evidence is limited regarding the efficacy of these products in humanitarian contexts, particularly given that reusable products must be safely washed and dried.<sup>11</sup>

Supply of products is only part of the solution to effective menstrual management in humanitarian contexts: in their 2017 Menstrual Hygiene Management and Emergencies Toolkit, the International Rescue Committee (IRC) and Columbia University identified three key response components required for effective intervention in these settings: 1) materials and supplies, 2) information, and 3) supportive facilities.<sup>12</sup> Their subsequent 2020 Compendium on Menstrual Disposal, Waste Management, and Laundering in Emergencies emphasized the importance of taking into consideration the use, disposal, and laundering of menstrual products in humanitarian interventions, as these often-overlooked

elements affect users' practical ability to use the products offered, particularly reusables.<sup>13</sup> They recommended thoughtful consultation of girls and women during the design of interventions, as well as engaging men and boys throughout intervention processes.

A 2019 study supported by UNICEF and implemented by the Centro de Investigação em Saúde da Manhica (Manhica Health Research Center, or CISM) in Mozambique's Tete and Nampula provinces confirmed the challenge of menstrual waste disposal and linked it to issues of stigma and taboos, as girls were afraid that others would see their used products.<sup>14</sup> In fact, stigma and taboos underpin every aspect of the menstrual management challenge, both perpetuating and perpetuated by lack of access to materials and information. The CISM study noted that the complex challenge of menstrual management affected girls' school attendance and concentration during class; due to stigma and fear of talking to their teachers about menstruation, girls' absences were often unexcused. Menstrual stigma has far-reaching effects for girls, negatively impacting their mental and emotional well-being, their ability to participate in school and other daily activities, their agency in seeking appropriate healthcare, and overall existing gender inequities.<sup>15 16</sup>

## Menstrual Management during COVID-19:

The COVID-19 pandemic has spread globally throughout 2020, with reported cases in 217 countries, including Mozambique, as of the writing of this report. Efforts to prevent transmission have produced secondary impacts on the economy, global supply chains, education systems, and water and sanitation systems. Institutional responses to the pandemic have occasionally acknowledged that efforts must include mitigation strategies for these secondary impacts, including menstrual management. Although studies remain limited (and this shortcoming is a challenge in itself), reports by UNICEF, UNFPA, and Plan International have identified challenges in menstrual management exacerbated by the pandemic and proposed potential solutions:<sup>17 18 19</sup>

<sup>9</sup> Marni Sommer, "Menstrual Hygiene Management in Humanitarian Emergencies: Gaps and Recommendations," *Waterlines* 31, no. 1-2 (2012): 83-104.

<sup>10</sup> Johanne Kragelund Nielsen, "Women and Girls' Experiences with Safety, Hygiene and Sanitation in Connection with Menstrual Health Management in Nyarugusu Refugee Camp" (Master's thesis, University of Copenhagen, 2017) quoted in Chris Bobel et al., *The Palgrave Handbook of Critical Menstruation Studies* (Palgrave Macmillan, 2020.)

<sup>11</sup> Crystal VanLeeuwen and Belen Torondel, "Improving Menstrual Hygiene Management in Emergency Contexts: Literature Review of Current Perspectives," (2018).

<sup>12</sup> Marni Sommer, et al. "A toolkit for integrating Menstrual Hygiene Management (MHM) into humanitarian response." New York: Columbia University, Mailman School of Public Health and International Rescue Committee. (2017).

<sup>13</sup> Margaret Schmitt, et al. "Menstrual Disposal, Waste Management & Laundering in Emergencies: A Compendium." New York: Columbia University and International Rescue Committee. (2020).

<sup>14</sup> Khátia Munguambe, "Atitudes e Experiências de Raparigas Em Idade Escolar em Relação a Gestão da Higiene Menstrual em Moçambique." *Centro de Investigação em Saúde da Manhica (CISM)*, (August 2019).

<sup>15</sup> Chris Bobel, *The Managed Body: Developing Girls and Menstrual Health in the Global South*. Palgrave Macmillan, (2019).

<sup>16</sup> Anna Pujol-Mazzini, "For Refugee Women, Periods a Dangerous, Shameful Time." *Reuters*, March 8, 2017.

<sup>17</sup> "Mitigating the Impacts of COVID-19 and Menstrual Health and Hygiene," *UNICEF*, (April 2020).

<sup>18</sup> "Periods in a Pandemic: Menstrual Hygiene Management in the Time of COVID-19," *Plan International* (2020).

<sup>19</sup> "Nine things you need to know about periods and the pandemic," UNFPA (2020).

The following challenges around menstrual management in the context of COVID-19 were mentioned by all three sources (UNICEF, UNFPA, and Plan International):

- **Menstrual materials:** Access to menstrual materials has become even more limited than under non-pandemic circumstances. Commercial disposable products, which must be procured monthly, are increasingly inaccessible due to disruptions in supply chains, rising prices of products, reduced distribution of products in service of funding COVID-19-related priorities, and increased financial stress of families. Sustainable menstrual product options were not widely available in emerging markets even prior to COVID-19.
- **Information:** Information and education about menstrual health and hygiene has been inadequate due to disruption in service provision (including school-based reproductive health education), diversion of resources toward the pandemic response, and the general de-prioritization of menstrual management as “non-essential.” Those with limited access to technology have faced increased challenges, as many service providers have adopted virtual methods for social distancing.
- **Water and sanitation infrastructure and services:** The COVID-19 response has placed a high demand on the WASH (Water, Sanitation, and Hygiene) sector for prevention measures (e.g., handwashing), but other essential aspects of WASH, including menstrual hygiene, are at risk of being sidelined amidst these efforts. The high demand for safe water and sanitation reduces supply and increases costs.

A cross-cutting challenge noted by all three sources is the extent to which COVID-19 prevention measures exacerbate existing challenges related to menstrual management. Confined living situations and reduced privacy worsen menstruation-related stigma. Differential access due to gender, disability status, and other factors compounds vulnerability. Widespread restrictions on movement have further compounded the mobility constraints that women and girls face when their menstrual needs remain unmet. This factor produces additional tension in a humanitarian context where girls and women are forced to be especially mobile (e.g., to escape violence or danger, to collect water/firewood, to receive distributions of food) in order to ensure basic survival. UNICEF summarizes this challenge: “Even in the best of times, gender inequality, discriminatory social norms, cultural taboos, poverty and lack of basic services often cause menstrual health and hygiene needs to go unmet. In emergencies, these deprivations can be exacerbated. The result is far-reaching negative impacts on the lives of those who menstruate: restricting mobility, freedom and choices; reducing participation in school, work and community life; compromising safety; and causing stress and anxiety.”

Potential solutions for menstrual management in the context of COVID-19 include the following, mentioned by all three sources:

- Deliver contextualized menstrual product solutions, such as strengthening local supply chains and, where facilities exist for washing and drying, providing sustainable materials (e.g., menstrual cups, washable pads, and absorbent underwear).
- Ensure that menstrual health and hygiene information is incorporated into the dissemination of other essential information and, where access is available, provide remote learning solutions and digital education information about reproductive health and rights, including menstrual health and hygiene and puberty information.
- Prioritize menstrual management as an essential component of COVID-19 response strategies and incorporate an intersectional lens in WASH infrastructure and service provision.

## STUDY APPROACH AND METHODS

### Interventions:

Two menstrual management interventions were considered in this study:

#### Provision of Sustainable Menstrual Products:

Be Girl's PeriodPanty™ (or *CalcinhaPenso*™ in Portuguese, the official language of Mozambique) is a single product that combines underwear with built-in menstrual protection using a mesh pocket that holds a washable towel to absorb menstrual flow. This design is intended to be flexible and comfortable for the user and easy to wash and dry. Each girl participant in the study received two pairs of this menstrual underwear.

#### Provision of Menstrual Cycle Education:

Be Girl's SmartCycle® education methodology involves a one-hour workshop to teach the basic biology of the menstrual cycle, the connection between menstruation and reproduction, and how to reject myths and taboos. Workshop participants receive their own SmartCycle® tool, a hand-held learning device that enables users to track three phases of the menstrual cycle (menstruation, ovulation, and preparation) for a typical 28-day cycle. Each girl and boy participant in the study took part in a SmartCycle® workshop and received a learning tool.



*A girl participant in the study displays the two interventions: menstrual underwear and a menstrual cycle learning tool, worn as necklace.*

### Emergency Context in Sofala Province: Cyclone Idai + COVID-19

In March 2019, Cyclone Idai produced a humanitarian crisis in Mozambique, Zimbabwe, and Malawi. Mozambique, particularly the coastal city of Beira in Sofala Province, was hit the hardest, with over 146,000 people displaced nationwide.<sup>20</sup> UNICEF reported on the devastating impact that the cyclone had on Mozambique's education system, saying it damaged or destroyed more than 3,400 classrooms and affected the education of over 300,000 children.<sup>21</sup> Gender-specific effects also have been noted. According to a Save the Children report in March of 2020, resettled women and girls reported a significant increase in their daily chores; they were traveling much further to find water and firewood; and girls were spending more time caring for the elderly and younger siblings because their mothers had to seek work.<sup>22</sup>

In Sofala's resettlement centers targeted by this study, the available resources remain limited even a year after the cyclone. Health centers and hospitals are not available, although many centers have mobile tents that provide basic health services. Some centers have primary schools nearby while others do not; none offer secondary education. Water points are available in the centers, but private spaces for washing and drying are limited. Electricity is not available. To

<sup>20</sup> "UNHCR Mozambique- Factsheet: Cyclone Idai, June 2019- Mozambique," *ReliefWeb* (July 10, 2019).

<sup>21</sup> "Cyclone Idai: Education at Risk for More than 305,000 Children in Mozambique-UNICEF," *ReliefWeb* (April 1, 2019).

<sup>22</sup> "Cyclone Idai: One Year On: Southern Africa Still Devasted and Vulnerable to Climate Shocks," *Save the Children International* (March 10, 2020).

access resources that are not in the centers (secondary school, hospitals, etc.), one must travel to the closest village, which can take 1-3 hours by foot, as most residents do not have money for transportation. Economic opportunities are limited, and the majority of the population depends on small-scale agriculture for survival.

Compounding the devastation unleashed by Cyclone Idai was the arrival of the COVID-19 pandemic in early 2020. Mozambique reported its first case in March. As of the writing of this report, there were over 14,000 confirmed COVID-19 cases in the country. The Government of Mozambique has taken measures to avoid the spread of the disease including requiring individuals to wear face masks in public spaces, social distancing, and restrictions on social gatherings.<sup>23</sup>

## Methods:

The study was carried out from April to July 2020 in the Sofala province of central Mozambique with residents of four resettlement centers (Mandrufi, Cura, Ndedja, and Guara-guara) in the districts of Dondo, Nhamatanda, and Buzi. Focus groups were conducted with participants pre- and post-intervention.

At baseline (pre-intervention), 50 girls and 25 boys were reached via 9 focus group discussions (7-9 participants per discussion), followed by the deployment of the menstrual product and education interventions. Participants were selected based on the following criteria: post-menarche adolescent girls and adolescent boys residing in all four resettlement centers. The study did not include pre-menarche girls, so that all female participants could use the menstrual underwear; however, it should be noted that menstrual education is ideally delivered to girls and boys before puberty to prepare girls for menarche and prevent stigma. Nearly all participants were aged 13-18 years, with the exception of one 21-year-old boy participant.

Two months following baseline, 37 girls and 19 boys participated in follow-up focus group discussions. The transient nature of the resettlement centers contributed to the attrition rate, despite efforts by the study team to maximize participation (e.g., an additional 3 focus groups were held at follow-up to attempt to reach as many participants as possible). Follow-up discussions ranged from 1-9 participants per discussion.

The study focused on three areas of learning: girls' experiences with menstruation and coping mechanisms, the efficacy of sustainable menstrual product solutions, and menstrual education and reproductive health with an additional question about COVID-19 added at follow-up only (see text box on page 6). The development of the focus group guides was informed by previous Be Girl studies, secondary research, and existing best practices, including the Menstrual Practice Needs Scale, a set of research questions to measure menstrual experiences.<sup>24</sup> The study team employed age-appropriate methods to ensure that participants felt comfortable, recognizing that menstruation can be an uncomfortable topic to discuss. For example, at baseline, girl participants warmed up with a general discussion of what a "typical girl" in their community might experience during menstruation before discussing their own experiences.

Limitations: The resettlement centers were selected based on distance from the nearest village and availability of participants who met the selection criteria. Factors of safety were



<sup>23</sup> U.S. Embassy in Mozambique, COVID-19 Information, Accessed September 18, 2020, <https://mz.usembassy.gov/covid-19-information/>

<sup>24</sup> Julie Hennegan et al., "Measuring Menstrual Hygiene Experience: Development and Validation of the Menstrual Practice Needs Scale (MPNS-36) in Soroti, Uganda," *BMJ Open* 10, no. 2 (February 1, 2020).



considered as well: one center eliminated from the study had a confirmed COVID-19 case; another required crossing a river to access it. Participants were selected by local field staff based on the criteria given, and were not randomized. The attrition rate from baseline to follow-up was 25%, despite repeated attempts to locate all participants. Some participants did not speak Portuguese comfortably; therefore, the assistant moderator helped to translate during the discussion.

COVID-19-related changes, additions: First, the methodology (originally designed to collect quantitative data) was adapted to a qualitative approach to avoid the risks associated with

large gatherings of people and the physical passing of surveys and pencils. Secondly, several additional questions were asked during the follow-up focus groups at the request of Mozambique's Ministry of Education and Human Development (MINEDH) to understand 1) how COVID-19 had affected the community generally, 2) participants' level of knowledge about preventative measures to avoid transmission, and 3) if/how the pandemic had affected menstrual management in the communities. Masks and hand sanitizer were procured for all participants, and discussions took place outside in open air with safe distance between participants to mitigate the risks of COVID-19.

### Learning Questions:

The study considered the following areas of learning within the context of the overlapping emergencies in Sofala:

1. Girls' experiences with menstruation and coping mechanisms: What are girls' experiences with menstruation and coping mechanisms for menstrual management? How have these experiences changed (or not) after the cyclone?
2. Efficacy of sustainable menstrual product solutions: Do girls use the menstrual underwear provided, and do these products provide the desired level of protection during menstruation? How does access to menstrual underwear affect girls' experiences during menstruation?
3. Menstrual education and reproductive health: How does the menstrual cycle education intervention affect girls' and boys' knowledge and attitudes related to menstruation and reproduction?

*Addition at follow-up:* How has COVID-19 affected girls' experiences in the community and their experiences with menstruation?



*One of the resettlement centers in Sofala province, Mozambique, targeted by the study*

## FINDINGS

Key findings are organized under two key themes: 1) how COVID-19 has affected girls' experiences in the community, both generally and during menstruation, and 2) how the menstrual management intervention affected girls' experiences during menstruation. Although the learning question around COVID-19 was added at follow-up, we present this finding first because of the magnitude of the pandemic, which provides important context for the remaining findings that address the original three learning questions.

### FINDINGS REGARDING HOW COVID-19 HAS AFFECTED GIRLS' EXPERIENCES IN THE COMMUNITY, BOTH GENERALLY AND DURING MENSTRUATION:

#### **Finding 1: COVID-19 produced economic hardships and social restrictions, compounding menstrual management challenges faced by girls, in particular their access to products and basic mobility.**

Cyclone Idai had dramatic effects on all participants' lives: all had lost their homes and been forced to relocate. Participants described relocating, missing school, and a struggle to find food to eat. One girl shared: "Before the floods ended, we had to turn around to have something to eat. We used canoes to go home and get food to eat."

However, girls and boys had begun to adjust to their new lives in the resettlement centers in the year since the cyclone. Several commented that they have new friends at the centers.

At the time of the study, girls and boys were navigating the changing environment due to the COVID-19 pandemic. They reported facing

social restrictions and overall limited mobility. One girl said: "We cannot play with our friends anymore."

Participants noted that schools were closed, and some described difficulties in completing their schoolwork at home:

“We can study, but not that well. Because for certain things we need to have explanations, such as subjects with calculations, like math, are very difficult to study at home.” *Girl, follow-up*

In nearly every follow-up focus group, girls and boys mentioned the economic strains due to the COVID-19 restrictions, and many said that this has made it harder to access commercial menstrual products. A few girls and boys said that prices have increased.

“Now [with COVID-19] it is more difficult for girls to have access to the products, because there are certain moments that we ask our dad, ‘I want a pad,’ and he says, ‘At the moment, I have no money, and the only money I have here is to buy food,’ or ‘Wait for next month or wear cloths.’” *Girl, follow-up*

“If a girl does small jobs, with this pandemic these small jobs are scarce, and it can be difficult for her to buy her own pads.” *Boy, follow-up*

“Things cost more because of the coronavirus.” *Girl, follow-up*

In general, both girls and boys were well-informed about COVID-19 prevention techniques and state enforcement of mask wearing.

“To prevent [COVID-19], we should wash our hands with soap and water, avoid hugs, wear masks, cover our mouth with our elbow when coughing, keep 1.5 meters of social distancing.” *Girl, follow-up*

“If the police find you without a mask, they can arrest you.” *Girl, follow-up*

“We can prevent by washing our hands with water and soap or ash, wearing masks, keeping 1.5 meters of social distancing.” *Boy, follow-up*





*A girl participant wears the SmartCycle® learning tool, which teaches three phases of the menstrual cycle: menstruation, ovulation, and preparation.*

## **FINDINGS REGARDING HOW THE MENSTRUAL MANAGEMENT INTERVENTIONS AFFECTED GIRLS' EXPERIENCES DURING MENSTRUATION:**

**Finding 2: A combination of taboos, pain, and lack of materials limited girls' participation in daily activities during menstruation, but the combined intervention of menstrual underwear and education removed some of these barriers.**

In baseline focus groups, girls described how they are limited from participation in typical daily activities during menstruation due to a combination of taboos, pain, and lack of menstrual materials. Girls said that they were unable to play with their friends during menstruation: "I feel sad because I can no longer play [during menstruation] because I'm afraid that the pad will fall." Others said that they believed they should not talk to boys during their period "because it can make the period worse." Menstrual pain was also described as a limitation to daily activities, making it difficult to attend school or to concentrate in class or to carry out their regular chores.

At follow-up, in contrast to the sadness or frustration expressed at baseline, many participants expressed the belief that menstruation was a normal occurrence, and that this conceptual shift made them feel more comfortable participating in everyday activities:

“ [The workshop] changed some ideas that I had that were wrong, for example, when I'm on my period, not wanting to talk to people, staying in my corner alone, not wanting to play with men, so that workshop changed my way of thinking of not wanting to play with men, wanting to be alone, not wanting to talk to anyone.” *Girl, follow-up*

“I had a friend who missed school because of her period. She missed school for 3 days.... But if I saw her now, I would not let her miss school. I would tell her that it is normal to have a period and that she does not have to miss school because it is not an illness.” *Girl, follow-up*

At follow-up, girls also said that they were more comfortable participating in daily activities during menstruation due in part to the menstrual underwear intervention:

“ Another thing that helped me were the panties I received, and now I play *mata-mata* with boys and I can ride my bike.” *Girl, follow-up*

**Finding 3: Although girls preferred disposable pads at baseline, nearly all reported a preference for menstrual underwear at follow-up after exposure to the new product.**

Prior to the intervention, girls reported preferring commercial disposable pads to washable cloths because pads are comfortable and do not require washing; however, most girls said that they typically used cloths or homemade pads called *ndanda* because they could not afford pads. Despite the prevalence of cloth usage, some girls were ashamed to admit that they use cloths when they could not access pads.

“[A disposable pad] is so easy to use.” *Girl, baseline*

“[Cloths/*ndanda*] create a lot of work to wash, and when there’s no sun it is difficult for the cloth to dry.” *Girl, baseline*

“[Cloths/*ndanda*] are often uncomfortable; sometimes it makes it hard to walk and leaves blisters.” *Girl, baseline*

At follow-up, most girls had used the menstrual underwear with absorbent towel insert that they received, and they reported positive experiences. A few girls used disposable pads in addition or instead, if they had them available.

Girls reported that the panties were easy to wash and dry, particularly when compared with the cloths/*ndanda* they used previously. Multiple girls stated that both the panties and included towel dried quickly, between 30 minutes to 1 hour depending on the amount of sunlight. A few girls said they had hung them inside to dry because they were afraid people would steal them.

“I used [the menstrual underwear] during the day; when it was 12 o’clock I took a bath, then I changed and used the other one. When I went to sleep and woke up that one had already dried; then I changed and used the other one that I had left to dry.” *Girl, follow-up*

“It was easy to wash, and even the blood itself wasn’t difficult to get out like with regular panties.” *Girl, follow-up*

When asked if two panties were enough to manage their periods, most girls said yes but also asked for more. Many of them wanted to give them to their friends. Only one girl said the two panties were not enough because they took time to dry. She had dried the panties



*A girl participant washes her menstrual underwear and absorbent towel.*



inside her house because she was afraid that someone would steal them.

Girls reported that the product made them feel safe and protected and able to move around comfortably. Girls in each focus group explained that they felt more comfortable because the panties' design was leakproof and kept the absorbent material in place.

**“That material in the middle of the panties is like plastic and will not let anything out. It really protects you.”**  
*Girl, follow-up*

“I felt good, because, wearing normal panties and a pad, if you do not put it right, it goes sideways and might fall off. But with these [menstrual] panties because of the pocket the cloth stays very safe.” *Girl, follow-up*

“We liked everything about our [menstrual] panties and there is nothing we would change about them.” *Girl, follow-up*

Girls said that, with the menstrual underwear, they were able to participate in daily activities without worrying about leaks. Several said that they felt comfortable sleeping in the panties because their bedding did not get stained. Others described riding a bike, walking to the market, and playing *nharrumbe* (a local game) comfortably because of the panties. They explained that this was a change compared to before the intervention, when they felt

uncomfortable being around many people or doing activities that required lots of movement due to fear of stains.

**“I felt free with my panties.”** *Girl, follow-up*

At follow-up girls were asked what they would put in hygiene kits if they were responsible for choosing items. The top item was the menstrual panty (listed by girls in every focus group), followed closely by cloths/*capulana*<sup>25</sup> material, then soap and a bucket (see Table 1).

**Table 1: Imagine that you are responsible for choosing a kit to give to other girls in the community right now to help them manage their periods. What would you put in the kit?**

Hygiene Kit Item	# of Focus Groups that Listed Item
Menstrual underwear	7
Cloth/ <i>capulana</i>	6
Soap	5
Bucket	5
Sanitary pads	3
Toothbrush	3
Toothpaste	3
Bath soap	3
Flashlight	2
Regular panties	2
Masks	1
Body cream	1
Powdered detergent	1

### When girls are consulted, what menstrual products do they choose?

At follow-up, girls were asked which they would prefer if they could choose between a pair of menstrual underwear and a pack of disposable pads. Nearly all of the 37 girl participants at follow-up said they would prefer the menstrual underwear, while two girls said they would like to have both.

**“Because when you wear disposable pads, then you must throw them away. The panties, on the other hand, I just need to wash them, put them out to dry, and in a few minutes, they dry, and I can wear them again.”** *Girl, follow-up*

“I have never seen panties like this before. I can use them with a cloth and feel comfortable. While the pad is unreliable, because sometimes I can have them, and other times not. With the panties I will not have to worry anymore, and they are comfortable.” *Girl, follow-up*

“I would rather get a new pair of menstrual underwear because the pad will not last long while the menstrual underwear I will wear for months and months.” *Girl, follow-up*

<sup>25</sup> *Capulana* is a multi-purpose Mozambican cloth used for wearing, cleaning, carrying babies, and more.



*A girl participant wears a SmartCycle® learning tool while her menstrual underwear dries on the clothesline.*



**Finding 4: Both girls and boys lacked access to accurate information about menstruation, and the menstrual cycle education intervention contradicted misinformation and stigmatized beliefs.**

Many girls reported experiencing menarche (their first period) without knowing what was happening to them.

“When I had my first menstruation, I didn’t know... it was the first time, and I was alone. I didn’t tell anyone. My mother had traveled, so I shut my mouth and I didn’t speak to anyone.... On the third month I finally told my mother.” *Girl, baseline*

“I was very scared because I had never heard of menstruation.” *Girl, baseline*

Both girls and boys reported believing misinformation about menstruation, such as taboos that a menstruating person should not add salt to food, wash dishes, carry something heavy, touch a boy, and more.

At baseline, boys reported mixed opinions about interacting with girls who are menstruating: some said that it is normal to interact (talk, date, etc.); others said it was not.

“I wouldn’t want to be around [a menstruating girl], because I think it’s disgusting. I would go somewhere else.” *Boy, baseline*

“Talking is normal; it is a way of communicating, and it is not that big of a deal.” *Boy, baseline*

Participants reported being told by teachers or parents not to play with boys when they were menstruating and to limit their daily activities: “My family told me that I could not play with boys while menstruating, and I should just stay at home.”

At follow-up, many girls said that they are more comfortable interacting with boys and doing daily activities during their periods, which they attributed to information they learned during the workshop.

“Before [the workshop] I was afraid to play with boys when I was on my period, and now I play with them normally.” *Girl, follow-up*

At follow-up, boys in all focus groups reported shifts in their attitudes about menstruation compared to baseline, stating that they are “no

longer ashamed to talk about menstruation” and “no longer afraid to sit next to a girl who is menstruating.” A few boys shared that they would take different actions in the future, such as refraining from teasing a girl who was menstruating or buying pads for her if she needed them.

“It is normal now for me to see a girl on her period.” *Boy, follow-up*

At baseline, participants expressed mixed opinions about whether or not boys should learn about menstruation, but at follow-up both girls and boys unanimously supported boys’ education about menstruation, many saying that it would help to reduce teasing.

One girl said at follow-up: “For me before the talk I also thought that men could not learn [about menstruation], but now I know that they can learn because, for example, if the girl is sitting and stains her clothes due to menstruation, men can help and will no longer laugh, and if she is a friend, for example, he can approach the girl and say that her *capulana* is dirty without laughing.”



*A boy participant shows off the SmartCycle® learning tool.*



At follow-up, boys also said that they believed education about menstruation is important for both boys and girls, because it affects the way boys interact with women and girls in their lives. One said that it is important for boys to learn “because menstruation can happen with sisters, girlfriends, family. When it happens, men can explain to their sisters.” Others explained that, if boys are more knowledgeable, they can “stop teasing girls who are menstruating” and overall be kinder to menstruating girls:

**“ I think men should learn about menstruation, because if we do not know what it is, we can think it is something abnormal and even push away the girls when they are menstruating.” Boy, follow-up**

Participants also discussed the idea that women are unable to engage in sexual activity during menstruation, a belief expressed by

many at baseline. Some referred to sex as an obligation; one boy included it in a list of household tasks that women are expected to do. He said, “When a woman menstruates, she should not stop doing household tasks; she can cook, wash dishes, and even have sex.” Boys and girls described the potential for physical abuse if a woman refuses sexual activity because of menstruation:

“For example, at night when her husband wants to have sex with his wife and the woman refuses and tells him that she has her period, he doesn’t understand and may even beat her.” *Girl, baseline*

“Yes, the boy has to learn [about menstruation] because when you want to have sex with your girlfriend she will tell you that she’s menstruating, and you have to understand, and if you don’t know you will fight with her.” *Boy, baseline*



*Boy and girl participants discuss how to use a SmartCycle® learning tool.*



## **Finding 5: Menstrual cycle education provided participants with needed information about reproduction and family planning.**

At baseline, all girls (all of whom were post-menarche) knew what menstruation was and associated it with the regular bleeding they experienced. However, very few girls understood fertility or ovulation or knew that there was a connection between menstruation and reproduction; those who did had just a vague understanding: "The woman needs to take care of herself and has to be very careful with men; otherwise, she will get pregnant."

Most boys at baseline understood menstruation to be associated with bleeding and abdominal pain; a few had not heard about menstruation before, and a few knew that there was a connection with reproduction: "The baby comes from ovulation."

One girl and one boy mentioned at baseline that a woman who does not menstruate cannot have children, but could not explain why. Girls linked menstruation with a general sense of womanhood: "When blood comes out, it means that the woman has grown up."

At follow-up, many girls and boys more accurately described the menstrual cycle as a whole, including describing the connection with reproduction and identifying ovulation as the fertile phase halfway through the

menstrual cycle. One girl explained: "It is during [the ovulation] stage that women have a high chance of becoming pregnant. Example: when a girl is ovulating and gets involved with a boy, and the man's sperm joins the egg, then a baby is formed."

A boy shared: "Menstruation occurs because a woman had prepared a 'home' to receive a baby, and if this home is not used it is destroyed. When woman's body prepares to get pregnant, it prepares a home for the baby. There in the womb where the child would live. When what was supposed to happen does not happen, then menstruation is released in the form of blood."

Nearly all girls and boys said at follow-up that they would feel comfortable talking to a future partner about whether or not to have children. Many (at least 7 girls and 5 boys) further shared that they had not felt that way before the workshop:

**“ Yes, I would feel comfortable talking to [my future wife about having children]; if she denies it, I will not force her. I did not think that way before the talk; I did not think anything about it.” *Boy, follow-up***

### **What do girls and boys do with their SmartCycle® menstrual cycle learning tools?**

Nearly all girls used the SmartCycle® menstrual cycle learning tool they received and indicated that they used it correctly (i.e., they started counting on the first day of menstrual bleeding). A couple girls wore it like a necklace, but most kept it in a safe place at home or kept it in their bag, while still making sure to turn it correctly every day.

**"It was something easy to use and it's something really fun to be able to spin and track the days, dates and the phases." *Girl, follow-up***

During the workshop, boys were guided to share the SmartCycle® tool with an important girl or woman in their life to show empathy and to pass on their knowledge. Boys shared it with their cousins, girlfriends, sisters, or female friends:

**"I showed my partner how it works and how to spin it; she understood how to use it and she keeps spinning it to this day. There was one day she forgot so we had to skip two days and keep going." *Boy, follow-up***

**"My friend took it from me...and I explained to her how to use it. I was able to explain everything to her because I recorded all the material I learned here." *Boy, follow-up***

## DISCUSSION AND RECOMMENDATIONS

The dual emergencies of Cyclone Idai displacement and COVID-19 have produced layers of challenges for girls to manage menstruation. Constraints around mobility are particularly complex. Residents of the centers must be highly mobile to access basic resources (e.g., hospitals) that are not available in the centers. Girls' mobility is limited during menstruation due to taboos, pain, and lack of materials (Finding 2). COVID-19 further increased scarcity of menstrual materials (Finding 1), and prevention measures imposed restrictions on all persons' mobility. Left unchecked, these combined challenges around mobility can result in daunting barriers to girls' ability to equitably access opportunities for education, healthcare, and social capital.

The interventions (sustainable menstrual underwear for girls and menstrual cycle education for girls and boys) removed certain menstruation-related barriers girls were facing to equitable access to opportunities: participants reported increased ability to manage menstruation safely and comfortably with the provided menstrual underwear, increased knowledge about menstruation and reproduction, and decreased shame and taboos. These findings suggest that, even during complex emergencies, contextualized menstrual management interventions can be important strategies to narrow the gap in gender equity.

The recommendations below are based on these findings:

- 1.** Prioritize integrated, holistic intervention strategies to address menstrual needs in humanitarian settings, particularly in the context of COVID-19. Include appropriate and sufficient menstrual materials, infrastructure, strategies to dismantle stigma, solutions for pain, and information for the whole community. Include parents, teachers, boys, and community leaders, in addition to girls and women, in interventions around education and dismantling stigma to contribute to systemic change.
- 2.** Deliver menstrual cycle education to adolescent girls and boys starting at an early age (ideally pre-menarche) to reduce fear during menarche and to build a foundation for reproductive health. Menstrual cycle education should be considered a complement (not replacement) for comprehensive sexual and reproductive health and rights education.
- 3.** Involve girls in decision-making around menstrual product interventions. As part of this process, expose girls to a wider range of available options, particularly modern sustainable product options such as menstrual underwear, so that girls can provide informed input into decisions.



*A girl participant hangs her menstrual underwear on the line to dry.*

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