



MONITORING & EVALUATION REPORT

KILIMANJARO REGION, 2017

*SUCCESSES AND LESSONS LEARNED
FROM THE TWaweza PROGRAM.*

JENNIFER RUBLI

Table of Contents

1. Executive Summary	2
2. Glossary	3
3. Introduction	4
4. Twaweza Program Overview	5
5. M&E Framework	6
5.1 Theory of Change	6
5.2 Assumptions	6
5.3 Logic Model	6
6. Tools and Indicators	8
7. Data Collection	9
8. Schools: Six-Month M&E	10
8.1 Socio-demographics	11
8.2 Usage	11
8.3 Indicators	13
9. Schools: One-Year M&E	15
9.1 Socio-demographics	15
9.2 Usage	15
9.3 Indicators	15
10. Africa School Assistance Project: Kupanda Project for Girls	17
10.1 Socio-demographics	18
10.2 Usage	18
10.3 Indicators	18
11. Community Groups	19
11.1 Tuleeni Orphans Home	19
11.1.1.1 Socio-demographics	19
11.1.1.2 Usage	19
11.1.1.3 Indicators	20
11.2 Give a Heart to Africa	20
11.2.1.1 Socio-demographics	20
11.2.1.2 Usage	21
11.2.1.3 Indicators	21
12. Conclusion	23
13. References	25

1. EXECUTIVE SUMMARY

Despite increasing attention being paid to the needs of menstruating women globally, menstruation and the issues surrounding it remain a critical gap in development and programming. On any given day, approximately 200 million women and girls in LMICs (low/middle-income countries) are menstruating¹ and struggling to manage safely, hygienically, and remain healthy.

Poor MHM (menstrual health management) significantly impacts a woman's quality of life, by affecting her health, her (or her children's ability to attend) school, her financial independence and therefore her agency through her ability to earn and/or save money, and her image and self-worth, which are affected by the way her menstruating body is perceived.

Because the issues surrounding menstruation affect so many aspects of a woman's, and therefore family's and community's, life, broad, multi-sectoral, community-based interventions are required to address them. The challenges women face that prevent safe, healthy periods include a lack of WASH infrastructure, cultural taboos, lack of information, and lack of access to products. The engagement of so many stakeholders, especially for an issue traditionally considered singularly female and private, results in MHM primarily being addressed by NGOs.

Research and programming is further hampered by a lack of coordination and collaboration between individual actors within the MHM sphere. To date, despite collaborative efforts, there are no standardised indicators or tools, and interventions have very little rigorous M&E (monitoring and evaluation) to assess program effectiveness and best practices. In collaboration with three menstrual cup organisations in East Africa, Femme has spent 2017 developing, piloting, and validating tools and indicators that can be used for both research and M&E purposes across LMIC settings.

Femme's Twaweza Program has been developed specifically to fill the critical gap in MHM programming. Our program is a comprehensive, community-based, educational approach that tackles the issues surrounding menstruation. Its three-pronged approach of education, distribution, and conversation combine to effectively address issues of access, stigma, myths, and lack of knowledge that hamper women from being healthy during menstruation.

Results show that the Twaweza Program reduces deliberate school absenteeism amongst adolescents, and increases participation at school, work, and in the social spheres. The education component is effective at improving MHM practices regardless of what menstrual product menstruators use. Beneficiaries are more confident, and exhibit less menstrual-related shame. They are 1.5 times less likely to report 2 or more symptoms of RTIs (reproductive tract infections), UTIs (urinary tract infections), and STIs (sexually transmitted infections) associated with poor MHM practices.

Taken together, these results convincingly demonstrate that the Twaweza Program is an effective MHM intervention that can significantly improve the quality of life for its participants on multiple aspects.

'Twaweza' means 'we can' in Swahili. Because menstruation is an issue we *can* solve.

Period.

2. GLOSSARY OF TERMS

AHI	Adverse health instance
FGD	Focus group discussion
GDP	Gross domestic product
M&E	Monitoring and evaluation
MC	Menstrual cup
MHM	Menstrual health management
(I)NGO	(International) Non-governmental Organisation
PPI	Probability of Poverty Index
RTIs	Reproductive tract infections
SES	Socioeconomic Status
STIs	Sexually transmitted infections
UTIs	Urinary tract infections
WASH	Water, sanitation, and hygiene

3. INTRODUCTION

Menstruation is not primarily a 'female' issue, nor is it something that needs to be handled privately and secretly. This is amplified in societies where women have little autonomy and agency in regards to policy, or their own financials and decision-making within the household. The issues surrounding menstruation are broad and multi-dimensional, ranging from policy to market to financial to WASH (water, sanitation, and hygiene) to health, to education.

Menstrual products are often unaffordable for menstruators, and often difficult to find in remote and rural areas, even if they are affordable. The quality is often very poor, and they may have been sitting on the shelf so long that individual packets are filled with dust, especially in rural areas or in stores located on dirt roads, reducing their absorbency and rendering their ability to stay in place non-existent.

Traditional methods of menstrual management are typically fabric-based – e.g. rags, cloths. But when, for any number of reasons, (for example lack of soap or water for washing, unable to dry during rainy season, or inability to afford new cloth), those are not available, women and girls turn to other options such as toilet paper, gauze, newspaper, types of mattress stuffing (which may be inserted into the vagina), dry leaves or grass, or even cow dung. These methods are unhygienic and unhealthy, and incredibly uncomfortable. They do not stay in place well and can restrict menstruators' movements, comfort and confidence, and activities. They itch, chafe, or even bruise², but there is no causal evidence demonstrating this link.

Mounting evidence shows that poor MHM (menstrual health management) is associated with increased risk of RTIs, UTIs, and STIS^{3,4,5,6,7,8,9}, but there remains a critical lack of research showing causal pathways between poor MHM and these diagnoses. RTIs not only disproportionately affect women^{8,10} but are often asymptomatic, suggesting their prevalence in LMICs is much higher than reported¹¹. Untreated RTIs and STIs increase the risk of negative health outcomes such as PID, chronic pelvic pain, adverse pregnancy and foetal outcomes, infertility, cervical cancer, ectopic pregnancy, and other gynaecological issues making it a significant public health and policy issue^{4,8,10}.

Most WASH facilities are not designed with a menstruating person in mind, making them inappropriate for approximately half the population. Stalls are often too small for much movement with no shelves or hooks to aid in changing the menstrual product, or too dirty for comfort. There may be no roofs, locks, or even doors, compromising a women's privacy, safety, and dignity. If there are roofs and doors, it may be too dark to see. Toilet paper is typically unavailable, and if there is water, it is often too far away for women to feel comfortable if they need to wash their clothing or body.

Additionally, access to clean water and soap in order to wash reusable material at home is vital to increased comfort during menstruation, as well as avoiding health issues. Without good access to appropriate WASH at home, school, work, and the community, women's ability to safely and hygienically manage their periods is seriously compromised, as they cannot change their products, nor properly wash, dry, and store them.

Women and girls lack basic knowledge such as anatomy, menstruation, and SRH (sexual reproductive health)^{12,13,14}. Additionally, they ascribe to many myths that dictate how they experience and manage menstruation, that have potentially serious consequences. Because the flow of information and wisdom is primarily amongst females, these myths and practices continue to be passed along to subsequent generations, often when girls reach menarche or before marriage.

As the importance of addressing menstruation is recognised, stakeholders globally are beginning to design and implement interventions aimed at improving MHM through various approaches. In 2017 the Kenyan government passed legislation providing schoolgirls with free disposable pads in an effort to tackle deliberate absenteeism. Many organisations have begun including some form of programming, especially in school settings. In humanitarian settings, dignity kits now include either disposable or reusable menstrual products. NGOs, individuals, and other stakeholders often distribute menstrual products, generally disposable ones, in an effort to tackle deliberate absenteeism amongst schoolgirls with the larger goal of keeping girls in school and reducing gender inequalities. Without a rigorous evidence

base and evaluation, however, efficacy, efficiency, and potential iatrogenic effects cannot properly be determined¹⁵.

With the rise in programming dedicated to or including MHM, is the need for rigorous M&E (monitoring and evaluation) in order to ascertain what, if any, impact various interventions are having, how well they are working, what components are effective and which need to be modified, and how interventions are impacting the lives of beneficiaries is even more vital. M&E for MHM-based interventions is severely lacking as scarce resources are used for programming. This impacts not only effectiveness of interventions, but weakens grant applications as no programmatic or impact data is available. This results in multitudes of exploratory and small-scale grants, as well as a very disparate sector that often reinvents the wheel or operates individually as opposed to in collaboration.

To date, there are no standardised indicators in the MHM world. Deliberate school absenteeism, wherein girls stay home from school specifically because of issues they face managing their periods, has often been cited, but little rigorous data exists to verify this claim, nor to substantiate it. Although there were some areas overlooked, such as a ceiling effect and poor cup uptake, a randomised-controlled trial in Nepal showed no improvement in absenteeism amongst secondary schoolgirls who were given a menstrual product¹⁶. Research and programmatic experience have shown that absenteeism oversimplifies the situation, and is a poor measurement of both lack of MHM and programme success; Femme has found that school participation, which also includes attendance, is a much better indicator that more accurately captures the situation. Girls may well be in school, but they may not be concentrating, they may not be listening or raising their hands or answering questions, engaging in classroom discussions, and they may leave campus when they need to change their menstrual product and facilities are not appropriate. Additionally, the overwhelming reason girls miss school and women miss work is not lack of a product, but pain.

This report is for M&E conducted in Tanzania in 2016 and 2017. It includes five secondary schools, and three community groups that were evaluated using our newly-developed framework and tools.

4. TWAVEZA PROGRAM OVERVIEW

The Twaweza Program combines education, conversation, and distribution to reduce menstrual stigma and empower girls to stay healthy and in school, thereby improving their quality of life. Providing reusable menstrual products has been shown to improve girls' ability to concentrate and participate in school as well as reducing the risk of RTIs^{17,18,19}.

Trained facilitators teach a comprehensive curriculum that covers reproductive anatomy, puberty or menopause, menstruation, MHM, health, consent and body respect, and, when appropriate, sexual education. Extended question periods are built into each time topic, which allows participants to get additional information, as well as Femme staff to indirectly address topics that are not deemed appropriate in a given setting. For example, in Tanzania, sex-ed is not allowed in schools, as abstinence only is the government position. Femme cannot address the topic in the school setting, yet it is unavoidable when talking about menstruation and MHM.

The information is designed to be contextually appropriate, and addresses commonly-held myths and misconceptions that negatively impact menstruators' quality of life.

The interactive workshops are delivered over a four-day period for one to two hours each day. On the fourth day, participants receive a Femme Kit, which is designed to contain everything required to safely manage their periods. This includes soap, a towel, a bowl, and a reusable menstrual product. Participants are given the choice of which is best for them: a menstrual cup (Ruby Cup), or reusable pads (AFRIpads).

After six weeks, facilitators return for a check-in, the purpose of which is two-fold. Firstly, it is an opportunity to reinforce key concepts, as letting go of long-held beliefs is difficult. Secondly, it serves as continued support for MC users, and increases uptake through encouragement and identifying successful peer users who can act as leaders to support the group.

Figure 1 below lays out the program cycle, and illustrates how the M&E system is built into program operations to constantly feed back, inform, and improve what Femme does.

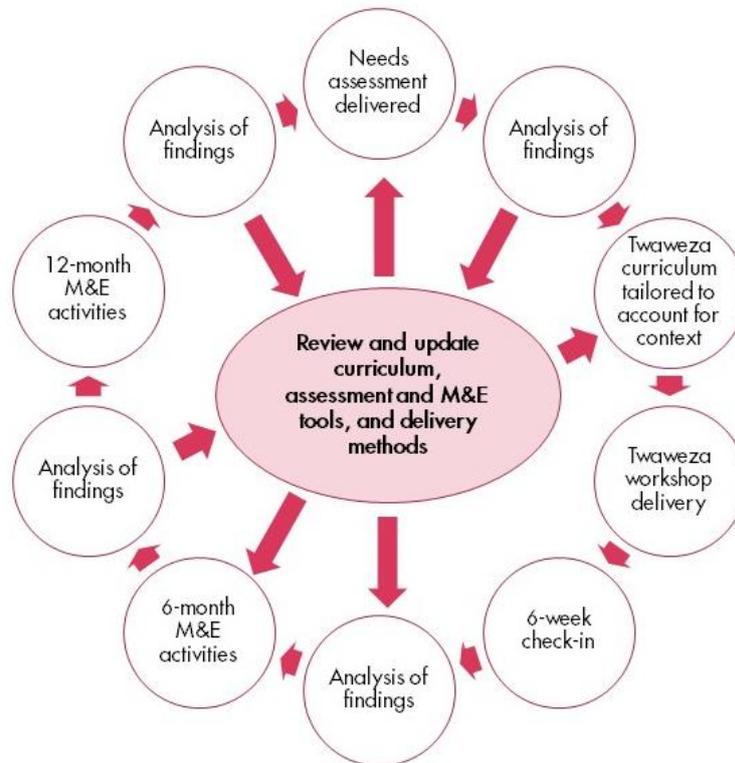


Figure 1: Twaweza Program activity cycle and M&E feedback loop

5. M&E FRAMEWORK

Femme's M&E is unique in that it is fully integrated into everyday programming, as evidenced in Figure 1 above.

5.1 THEORY OF CHANGE

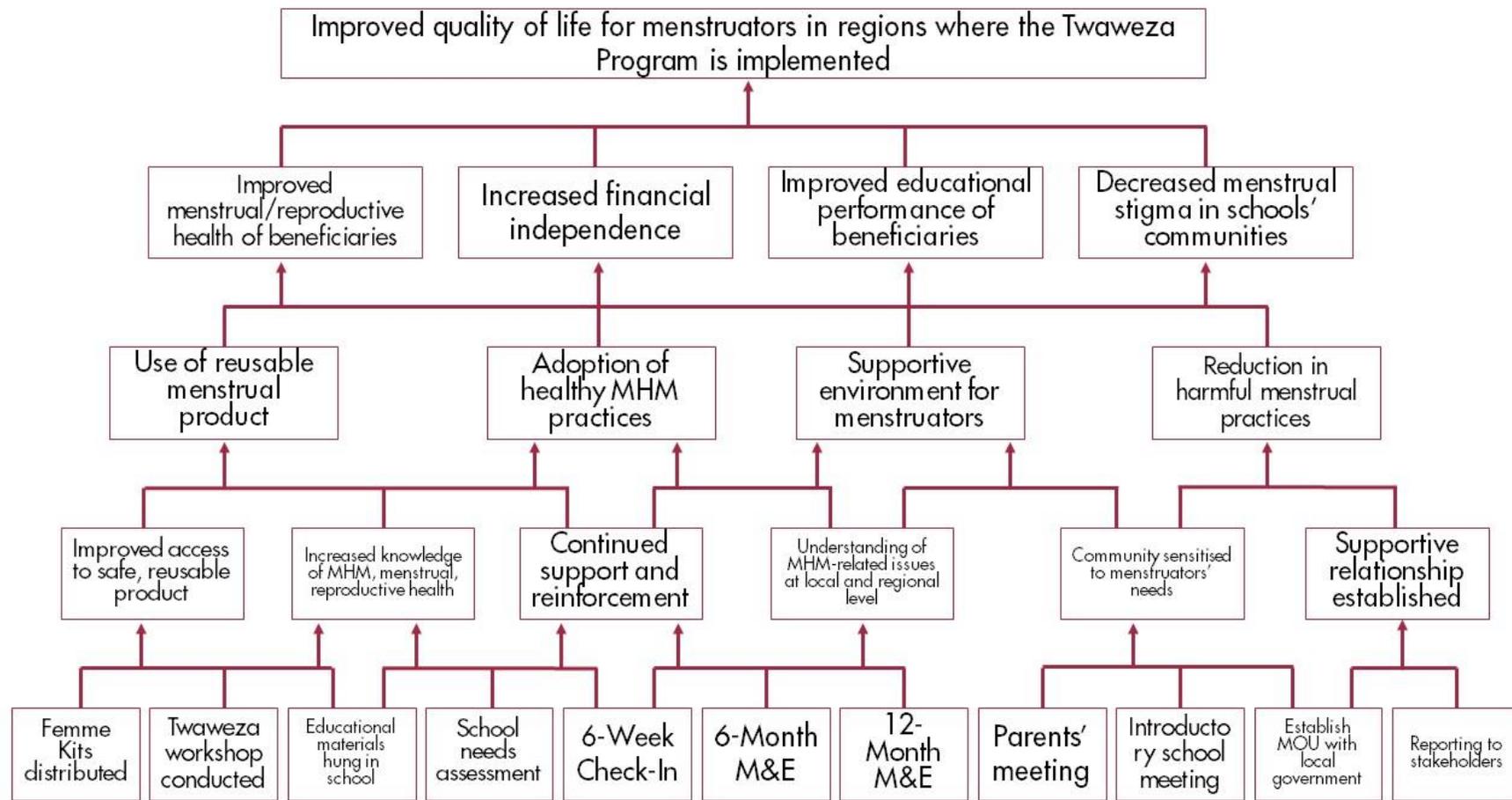
Femme Theory of Change posits that comprehensive menstrual and reproductive health education, along with distribution of a reusable menstrual product will improve the quality of life of beneficiaries by enabling them to participate more fully in school, social, and work activities, improve their menstrual/reproductive health, financial independence, and agency, ultimately resulting in an increased quality of life.

5.2 ASSUMPTIONS

1. Providing comprehensive reproductive/menstrual health education, along with distribution of a reusable menstrual, and continued support, will result in adoption of healthier and safer MHM practices
2. Schoolgirls will use the menstrual product they chose
3. There will be more consistent and coherent participation in school and other social situations by menstruators
4. Schools will become more tolerant and supportive of their menstruating students

5.3 LOGIC MODEL

The ultimate outcome of the Twaweza Program is increased quality of life for participants, through improved menstrual and reproductive health, improved educational outcomes and performance, and decreased menstrual stigma



Fi

Figure 2: Twaweza Program Logic Model

Improved menstrual/reproductive health means girls are suffering fewer adverse effects of poor MHM practices and recurrent health issues, which will primarily be measured by the indicator AHIs (see Table 1, section 5). Although no causal studies have been conducted, there is mounting evidence that demonstrates a link between poor MHM and increased risk or odds of RTIs, UTIs, and even STIs^{3,4,5,6,8,9,11}. Undiagnosed or improperly treated RTIs and STIs in women result in issues with fertility, dangerous pregnancies and increased child or maternal mortality, and chronic pelvic pain.

With less stigma around menstruation in the community, menstruators have more freedom to participate in everyday activities, are less restricted, and engage in healthier MHM practices. Myths and misconceptions often prevent menstruators from cooking, farming, gardening, or working in food-related areas. They prevent menstruators from hanging their menstrual product in the sun to dry, and from storing it safely, both of which decrease AHIs. They prevent women from partaking in income-generating activities, which affects their financial independence and agency. And they teach menstruators that their body is dirty, shameful, and contaminated, which has significant, unresearched long-term effects on their self-confidence, self-image, and self-worth.

When girls are better able to attend school, stay in school all day, concentrate and participate in class, and have higher confidence and less shame, they are more likely to remain in school, and perform better on national exams. This means they are more likely to enrol in post-secondary education, which increases their income and financial independence. Further education dramatically improves a woman's agency and choice throughout her life, as they have better health, use family planning and practice safe sex, have fewer children who are healthier and have higher education. Prioritising girls' education over subsequent generations will significantly decrease gender inequalities in schooling and job/hiring sectors, which will in turn further promote environments that are conducive to girls' education. Women with higher levels of education contribute significantly to their community's development and their country's GDP²⁰.

6. TOOLS & INDICATORS

As no standardised tools or indicators exist in the MHM sector, Femme has developed its own M&E and research materials, drawing from current research, and in conjunction with other experts, stakeholders, and implementing organisations.

Brainstorm sessions with the Femme team revealed important questions to ask, and further sessions modified existing questions to fit the context and translation capabilities.

Questions were drawn from a variety of sources. Das *et al.*, (2015) was used as a framework, and provided WASH questions. Experts in the field provided a symptom checklist used in a long-term research-based intervention in Kisumu, Kenya. Additional symptoms for the checklist were sourced from several other MHM studies, as well as Femme's experience and focus group discussions (FGDs) in order to include all menstrual-related symptoms people experience.

Two regional organisations, Kupanda Project and Resonate Project, shared their M&E and allowed Femme to use tested and validated questions on individual agency/empowerment.

Previous evaluation questions from Femme were rephrased to be more neutral, or modified to fit a Likert scale, allowing quantitative analysis.

Sociodemographic questions were drawn from the Tanzania PPI (Progress of Poverty Index).

A working collaboration with Ruby Cup, Womena, and Cup Effect has identified important indicators and is working on standardising how to evaluate them.

Femme's indicators can be seen in Table 1 below. Unless otherwise stated, all indicators are collected at Needs Assessment and M&E timepoints.

Indicator	Definition	Outcome that Measures
MC/AFRipad usage	Use the given menstrual product, frequency of use, comfort level, barriers to use, advantages and disadvantages Only collected after workshops conducted	<ul style="list-style-type: none"> • Use of Femme Kits
Change in knowledge	Knowledge questions on virginity/hymen, symptoms of UTIs, anatomy, menstruation, and MHM	<ul style="list-style-type: none"> • Improved menstrual/reproductive health • Increased knowledge of MHM, menstrual, reproductive health
School participation	School attendance, staying all day, listening and concentrating in class, where they are positioned in class, are they participating in class, why are they missing out	<ul style="list-style-type: none"> • Decreased menstrual stigma • Improved educational performance • Supportive school environment
Community/social participation	Partaking in community and school activities, level of comfort being in the community during menstruation, reasons for lack of participation and comfort	<ul style="list-style-type: none"> • Decreased menstrual stigma • Quality of life
MHM practices	How beneficiaries wash, dry, store, or dispose of their chosen menstrual product	<ul style="list-style-type: none"> • Improved menstrual/reproductive health • Decreased menstrual stigma
Academic success	School enrolment and dropout rates, Form 2 and 4 graduation rates and grades, grades, self-report attendance, concentration, and performance	<ul style="list-style-type: none"> • Improved educational performance
Agency/empowerment	Self-report of change in confidence, comfort level addressing menstruation as an issue, feelings of self-worth (related to decrease in menstrual stigma in the school/community)	<ul style="list-style-type: none"> • Increased quality of life
AHIs	Adverse health instances. Any occurrence, within the last six months, of any of the following symptoms directly related to menstruation. This checklist includes symptoms of UTIs, RTIs, and STIs <ul style="list-style-type: none"> • Vulval itching, pain, sores or broils • Rash/redness on the vulva • Burning whilst urinating • Abnormal vaginal discharge (colour, texture, amount) • Spotting • Bad smell from the vagina/vulva • Other 	<ul style="list-style-type: none"> • Improved menstrual/reproductive health

Table 1: List of Twaweza Program indicators and the outcomes they measure

Because the tools were being developed during the process, some of the questions were only asked to one group of participants. Other questions went through several iterations before the final form. This limited the ability to make direct comparisons between certain groups, and made a large-scale, multivariate analysis impossible due to too either missing data or lack of comparability between question iterations.

7. DATA COLLECTION

In secondary schools, approximately 50% of beneficiaries were selected by either teachers or the school head to participate and fill out questionnaires.

Because most schools lack a central gathering location, students were gathered in classrooms and quantitative surveys were distributed. In most schools, teachers or school heads selected students to participate, potentially resulting in a selection bias, and raising issues of consent.

To offset this, students were allowed to leave at any point. They were reassured that they were allowed to leave any question blank, or even the entire questionnaire blank if they did not want classmates to see they were participating, with no penalty. They were asked to respect each other's privacy, given the personal nature of many of the questions. Teachers and school staff were not present nor in the vicinity during data collection. There were some instances where, during data entry, it was clear that a group of students had all given the same answer; this was more common at Needs Assessment than M&E timepoints, likely because of the relationship and rapport built between Facilitators and students. This also decreased as facilitators gained experience with data collection, and the questionnaire was refined.

Femme has also created a guideline to data collection in such low-resource settings, with a section devoted to ethics that goes into more detail as to how these issues can be addressed, avoided, or mitigated.

In addition to the strategies mentioned above, Femme is exploring several options, such as data collection via tablets, and multiple versions of the paper questionnaire.

Response rate was surprisingly high, especially given the sensitive nature of numerous questions; there was an over 80% response rate for AHIs, which demonstrates the ability of our facilitators to establish rapport and create a safe, supportive atmosphere even at first interaction. This contributes greatly to the validity of the tool, and increases confidence in the results obtained.

For community groups, the head of the community was contacted to invite all participants to return for the Six-Month evaluation.

The space available for beneficiaries to fill out questionnaires or participate in FGDs varied greatly by group, school, and location. Femme staff collecting data were trained to provide as safe and private a space possible whatever the location. This includes measures such as ensuring FGDs cannot be overheard (by boys/men), no people (males) are loitering outside the room where beneficiaries are filling out questionnaires, and maximising privacy as much as possible.

8. SCHOOLS: SIX-MONTH M&E

Six-Month M&E was conducted at five government secondary schools in Moshi Rural district, six months after the Twaweza workshops.

- Ghona Secondary School
- Iwa Secondary School
- Kisarika Secondary School
- Mbokomu Secondary School
- Muungano Secondary School

School	Number of Beneficiaries	Number of M&E Participants	Number of AFRIpads Distributed	Number of Ruby Cups Distributed
Ghona Secondary School	175	38	102	73
Iwa Secondary School	72	43	107	78
Kisarika Secondary School	155	44	45	110
Mbokomu Secondary School	201	58	76	134
Muongano Secondary School	428	50	165	249

Table 2: Schools and participant information for Twaweza workshops

8.1 SOCIODEMOGRAPHIC

The age ranged from 12-19 years old (mean=15.92, SD=1.20), primarily Forms 2 through 4. 42.6% of girls were Chagga, the main tribe in the Kilimanjaro region; other tribes included Haya, Kikuyu, Pare, and Pogoro. Questions from the Tanzania PPI were added later, and not enough data exists for schoolgirls to include it here. More information and descriptive statistics can be seen in Table 3 below.

	Number	Minimum	Maximum	Mean	Standard Deviation
Age	233	12	19	15.92	1.196
Age of Menarche*	487	10	17	14.11	.968
Number of People Living in House*	485	1	20	4.32	1.887
Packets per Period*	430	1	4	2.21	.904
Cost per Period (TSH)*	420	200	30,000	2,776.90	2,470.391
	Number	Percentage		Median	
Form	195	-		3	
1	1	0.5		-	
2	78	40.0		-	
3	22	11.3		-	
4	94	48.2		-	
Tribe					
Chagga	83	42.6		-	
Haya	1	0.5		-	
Kikuyu	1	0.5		-	
Pare	1	0.5		-	
Pogoro	1	0.5		-	
Missing	108	55.4		-	

Table 3: Sociodemographic information and descriptive statistics for M&E participants.

*Variables marked with an asterisk were collected at Needs Assessment, and not again at M&E, leaving space and time for other indicators such as usage.

8.2 USAGE

AFRIpad usage was typically very high, at 95.7%, because they are non-invasive, and very familiar to girls, similar to the disposable pads typically favoured. Very few issues with their usage has been reported, although several have mentioned itching. That is likely more related to MHM practices of washing, drying, and storing, than the product themselves, but will be further investigated. Access to water, soap, and ability to dry in sunlight have been the greatest barriers to effective use.

MC (menstrual cup) usage was lower, but continued to grow past the six-month mark, when this M&E was conducted. 65.0% of those who received a MC reported using it regularly or semi-regularly. It should be noted that the Six-Week Check-In, primarily an opportunity for further support to encourage menstrual cup uptake and usage, was not conducted at these five schools, but has since been redeveloped and instituted.

Another point of note is the size of MCs: in Fall 2016, Ruby Cup revealed a small-size MC. Femme requested a shipment to trail in Tanzania, at Ghona Secondary School. Although only slightly smaller

in diameter, they can appear less intimidating, especially to adolescents or girls who haven't yet had penetrative vaginal sex. We found that adolescents in Tanzania preferred the small size, and Ghona Secondary School's MC uptake was much higher than other schools, at 76.47%. As a result, Femme will be distributing small-sized MCs in secondary schools in Tanzania.

The main reason students gave for not using the MC was fear (45.6%), suggesting the curriculum needs to better tackle the common myths and misconceptions surrounding MC use, as well as emphasising anatomy and physiology (of the vagina). This will be further explored in FGDs. The Six-Week Check-In also helps address fear, through Q&A, repetition of key information, and ongoing support.

Other reasons were pain upon insertion (33.3%), and inability to get it in (29.4%). It is common for most people to experience some pain or discomfort during the first few attempts at insertion; research and experience have shown this generally disappears as they become more comfortable both with their bodies, and with using MCs. In a culture that prizes female virginity, the notion of vaginal insertion is an additional issue, which is addressed through emphasis on the vagina and hymen, and in-depth discussion of the definition of virginity as a social construct. The abovementioned issues are further mitigated through the Six-Week Check-In, and fostering a supportive school environment (for example, teacher training and sensitisation, educational posters, etc).

Overall, 63.7% of girls were using either AFRIpads or Ruby Cups distributed by Femme at the six-month mark. The proportion of beneficiaries not using a distributed product were mainly girls who chose cups but were not (regularly) using them.

AFRIpads were more regularly used by more girls than disposable pads (the most common menstrual product reported in Needs Assessments), which is an encouraging finding. Unexpectedly, use of cloth/fabric decreased drastically, from 32.3% to 8.5%. This suggests that AFRIpads and to a lesser extent, Ruby Cups, are replacing less hygienic menstrual products, and that curriculum teachings on safe and healthy MHM practices are producing behavioural change. The graph below (Figure 3) shows a comparison the percentage of girls using each type of menstrual product at Needs Assessment and post-Twaweza Program.

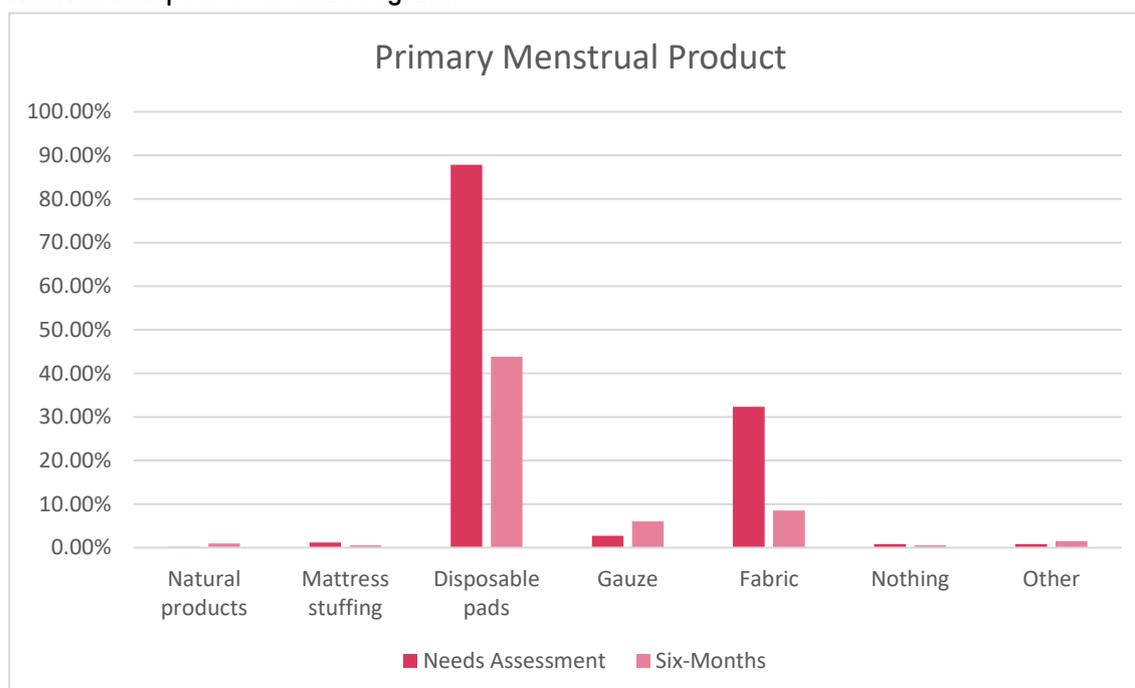
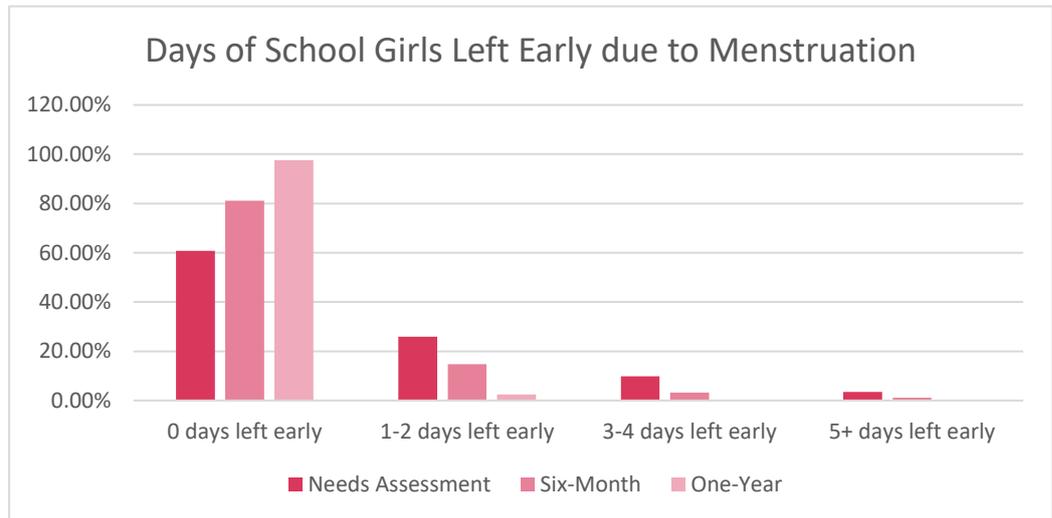


Figure 3: Comparison of schoolgirls' primary menstrual product at baseline and at six-month M&E timepoints

8.3 INDICATORS

At the six-month mark, 85.0% of students reported missing 0 days of school due to menstruation, which is a 25% increase in attendance from baseline. The percentage of girls who missed days of school because of menstruation decreased across the board. Similar results were observed with leaving school early (Table 4 below), where 81.1% of schoolgirls reported not leaving school early because of their periods. The main reason given for missing was pain (21.1%), a cross-cutting issue that needs to be addressed at a global level.

Figure 4:
Change in the number of days girls reported leaving school early due to menstruation



As with days missed or left early, the reasons girls gave for missing or leaving early also decreased on all counts. There was an 18% decrease in girls missing school due to pain, 6.1% in missing school due to fear of leaking, and 2.9% in missing school because of menstrual shame.

71.8% of beneficiaries reported comfortably sitting at their desks during menstruation, as opposed to being uncomfortable, distracted, standing at the back, or being absent. The majority of girls were not comfortable being called on by their teacher or raising their hands when they knew the answer. However, there is no significant change from Needs Assessments, and conversations during data collection suggested this is a broader cultural issue related to gender expectations and classroom environment. In running the program at schools, especially once boys are included, an environment that is friendlier and more conducive and supportive of girls' learning and comfort will be fostered, and lead to increased participation in this regard from girls.

65.4% of girls attributed a self-reported increased in school performance to the Twaweza Program, showing a positive correlation with both attendance and increased concentration. Further verification will be obtained from enrolment, graduation rates, and national exam performance pre- and post-intervention.

71.8% of girls reported sometimes or always being able to take part in all activities during their periods; only 1.9% reported always missing out, a decrease of 12.5% from before the Twaweza Program. Figure 5 below shows the most common reasons girls were missing out on activities. As with missing/leaving school, the primary reason was pain. The graph shows that the percentage of girls who 'don't miss' any aspects of their lives during menstruation increased significantly from prior to the intervention.

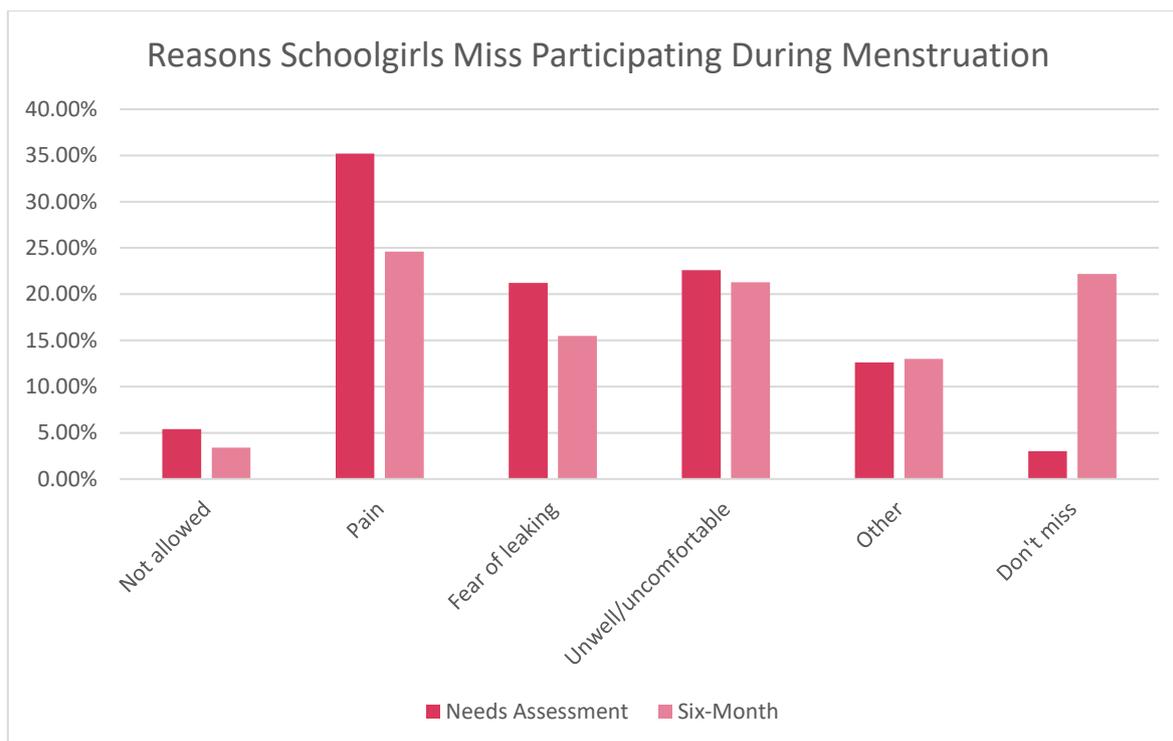


Figure 5: Change in schoolgirls' reasons for missing out on activities during menstruation

78.7% of girls self-reported 0-1 AHIs, an increase of 17.1% as compared to before Femme conducted the Twaweza program (Table 3). Additionally, beneficiaries were 1.5 times less likely to report 2+ AHIs, a statistically significant outcome.

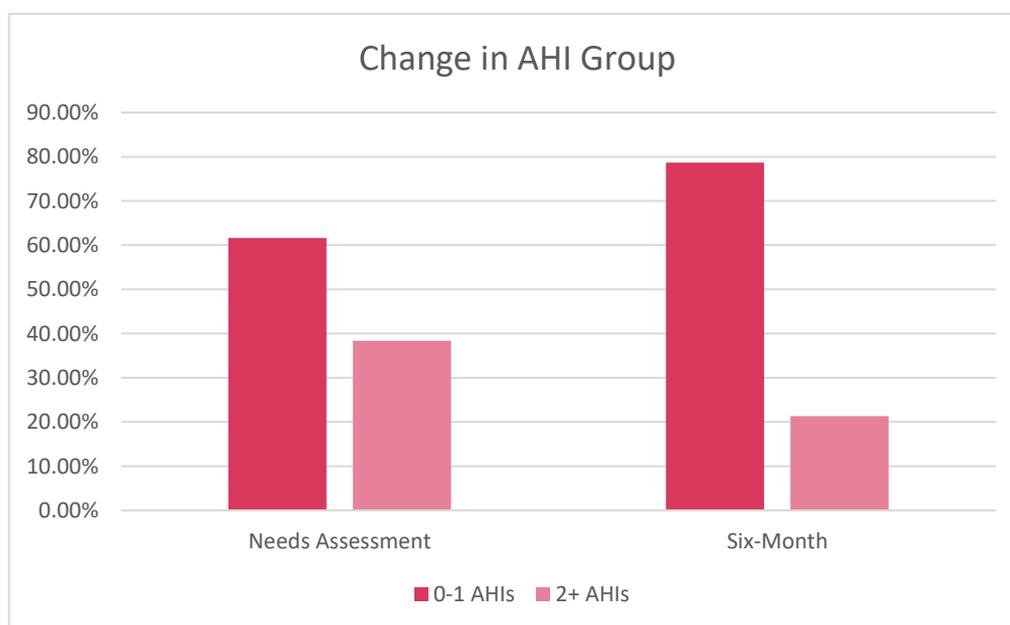


Figure 6: Change in percentage of girls who reported 0-1 or 2+ AHIs at Needs Assessment versus Six-Month M&E

84.0% of girls reported being somewhat or much more confident as a result of the program, whilst 89.1% reported feeling somewhat less or much less shame, also as a result of the program.

9. SCHOOLS: 1 YEAR M&E

One-Year M&E was undertaken with 44 students at Ghona Secondary School, in October 2017. Form 4 students from 2016 had either graduated or dropped out, and were not included in the M&E.

9.1 SOCIODEMOGRAPHIC

Participants ranged from 16-18 years old, in Forms 3 and 4. The majority (52.3%) were from the Pare tribe, whilst 29.5% were Chagga; six other Tanzanian tribes were represented.

Number of people living in the students' homes ranged from 2 to 9 people (median = 6). The number of rooms in their house ranged from 2 to 6 (median = 4, mean = 3).

9.2 USAGE

13 girls who chose AFRIpads and 31 who chose Ruby Cups participated in the M&E. At one year, 92.3% were using their AFRIpads regularly. Two beneficiaries reported having trouble attaching the pads, which could be due to lack of good underwear or not having any underwear at all; two others reported itching/chafing. This is a common issue seen with poor quality menstrual products, wearing absorbents too long, and poor MHM practices (not washing, drying, or storing properly). Issues with both reusable pad and MC use needs to be further explored in FGDs.

78.6% of participants were using their Ruby Cups regularly. The most common barriers to use at one year were similar to those at six weeks and six months – pain upon insertion (18.2%), fear (18.2%), and one beneficiary who reported not being allowed to use it. Further FGDs are required to explore girls who report not being allowed to use a distributed product and tap into cultural beliefs.

Disposable pads remained the most popular choice of menstrual product, however, as at the Six-Month M&E mark, use of fabric-based absorbents decreased drastically to 5.6% (two girls), again suggesting that girls were internalising the material to produce behavioural change.

9.3 INDICATORS

When it came to deliberate absenteeism, results at one year continued to show improvement. Beneficiaries reported missing 0-2 days per period (mean = 0.61, SD = 0.666 days), with 90.2% missing 0 days. Figure 7 below shows the change in deliberate absenteeism from baseline to one year post-intervention. Statistics on leaving early were similar, with 97.6% reporting they did not leave school early due to menstruation.

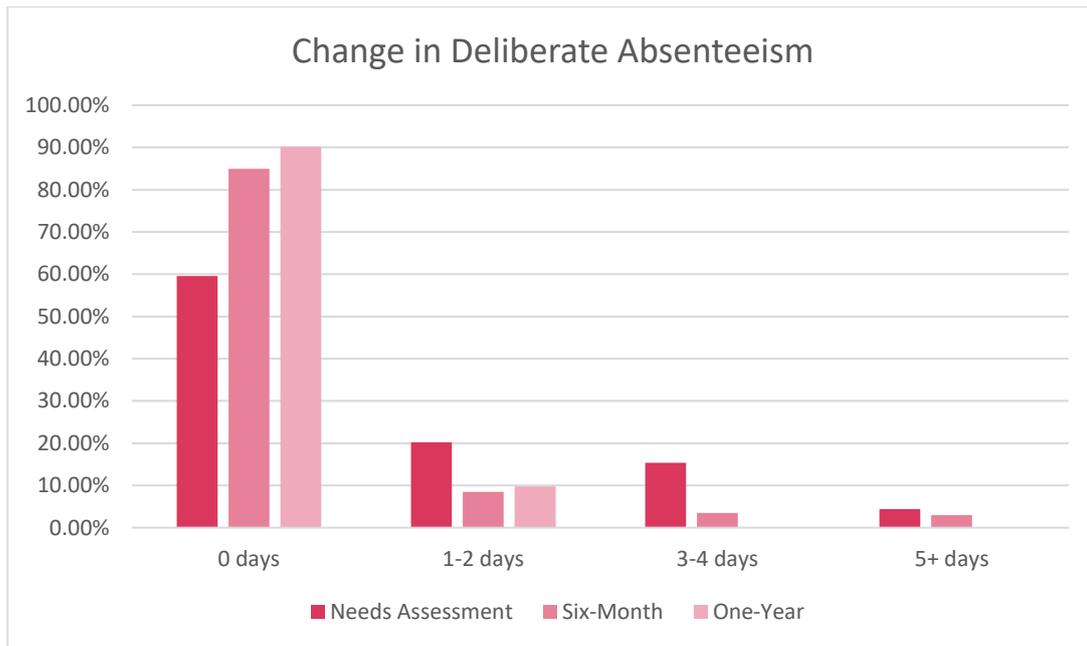


Figure 7: Change in days of school missed due to menstruation at Needs Assessment, Six-Month M&E, and One-Year M&E

Pain remained the primary reason girls miss (13.2%) or leave early (7.9%). A few participants also reported feeling unwell/uncomfortable, and fear of leaking. Only 2.6% reported shame as being the reason for missing or leaving early.

When it comes to other indicators of participation, 90.2% of girls reported sometimes or always raising their hands in class during their periods. 83.3% of girls sat comfortably at their desks during menstruation, whilst 9.5% were at their desks, but not comfortable or able to concentrate well. 2.6% reported staying at home, which is consistent with other indicators of deliberate absenteeism.

When called on by the teacher during their periods, about one third of girls felt bad or scared. The other two thirds experienced positive emotions, which they attributed to using the products distributed, or understanding that menstruation was normal and not something to be ashamed of. Further exploration of how their behaviour differs depending on their menstrual status will strengthen this indicator.

84.1% of girls reported always or almost always being able to participate in normal activities during menstruation, with only 8.4% reporting always missing out.

As with school, the primary reason given for missing activities was pain (31.7%), followed by feeling unwell or uncomfortable (14.6%). Only one girl reported not being allowed to partake in certain activities due to cultural myths or traditions, which is encouraging. This is another area that requires further exploration through focus groups.

At one year, health improvements appeared to remain steady from the six-month mark. Beneficiaries did not report more than four symptoms, and 51.3% reported zero AHIs. The percentage self-reporting 0-1 AHIs and 2+ AHIs at baseline, Six-Month, and One-Year timepoints can be seen in Figure 8 below, which demonstrates that health gains are sustained over time.

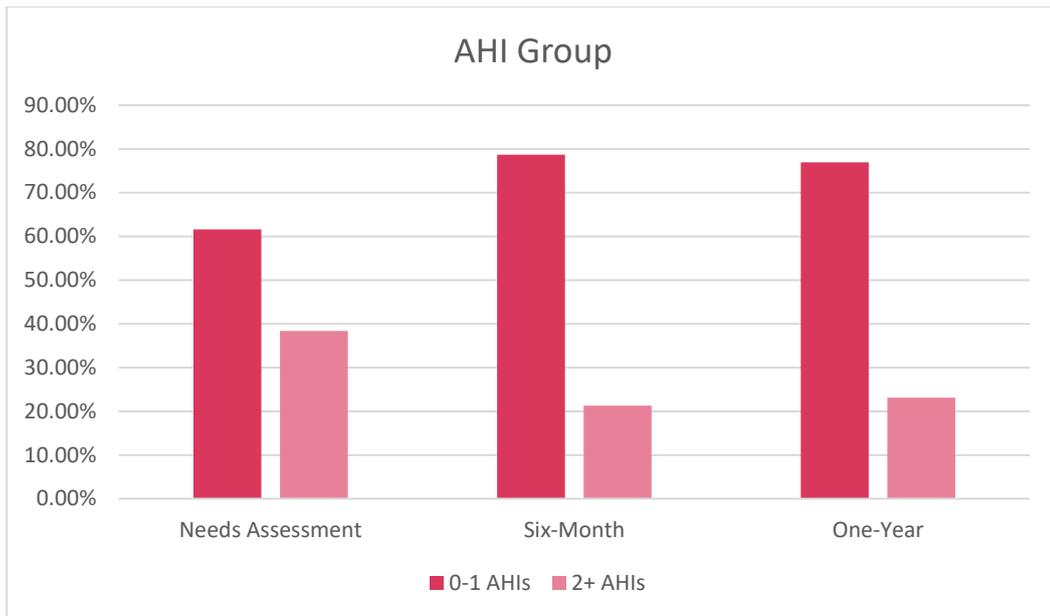


Figure 8: Change in percentage of beneficiaries who reported 0-1 AHIs versus 2+ AHIs at baseline, Six-Month, and One-Year data collection timepoints

Overall, beneficiaries were reporting fewer symptoms, and more beneficiaries were reporting no symptoms.

Because menstruation is such a taboo topic, willingness to recognise menstruation as an issue, and then speak about it, can be taken as a measure of increased confidence and decreased menstrual stigma.

There was little change in girls' willingness to speak about menstruation to a female family member; however, willingness to speak to a male family member, female outside the family, and male outside the family all increased, as can be seen in Table 4 below.

	Percentage at Needs Assessment	Percentage at 1-Year M&E
Female family member	80.70%	84.20%
Male family member	6.80%	0.00%
Female community member	74.80%	90.90%
Male community member	4.60%	50.00%

Table 4: Percentage of beneficiaries who are willing to speak to someone about menstruation

Additionally, 75% of respondents said they would speak up about menstruation as an issue within their family, and 70% said they would do so at school. Taken together, these results suggest that adolescent girls are feeling more empowered, and menstruation has been, to some extent, normalised for them.

At one year, 100% of girls reported feeling somewhat or much more confident during their periods, and 97.7% felt somewhat or much less menstrual shame, due to Femme's program. These results showed a continued increase from the Six-Month mark, suggesting that longer-term change in attitudes and stigma continue to develop and manifest themselves on a broader level.

10. AFRICA SCHOOL ASSISTANCE PROJECT: KUPANDA PROJECT FOR GIRLS

Africa School Assistance Project (ASAP) partners with local government (public) schools in Tanzania to develop schools and support girls' education. Their Kupanda project works to increase girls' graduation rates from secondary schools, allowing them to find gainful employment or continue their education.

Femme conducted the Twaweza Program in 2016 at Idetemya Secondary School, in the Mwanza region. 96 students and four teachers participated and received Ruby Cups; students were evenly split between Forms 1 and 2.

10.1 SOCIODEMOGRAPHICS

40 girls at Idetemya Secondary School took part in the M&E, from Forms 2-4 (median = Form 3). Their age range was 14-20 years old, with a mean = 16.63 (SD = 1.234).

The majority of girls were from the Msukuma triba (72.5%), with others from Mjita, Mkerewe, Mnyamwezi, and Mnyiramba.

10.2 USAGE

Only menstrual cups were distributed to girls who were part of the Kupanda Project in 2016. Results showed an uptake of 43.6%, with a median of 5 periods to get used to using menstrual cups. The primary reason given for not using the cups was difficulty inserting (33.3%) and pain (23.1%). Other reasons were fear; one girl reported not being allowed, whilst five reported dropping or losing their menstrual cup.

Disposable pads remained the most common menstrual product with 46.2% of girls using them, whilst use of cloth/rags decreased dramatically to 0%; only three students reported using mattress stuffing or nothing. Again, this demonstrates that, whether or not beneficiaries were using the products Femme distributes, education on safe product choice and use was effective.

10.3 INDICATORS

93.8% of girls reported missing 0 days of school due to menstruation, with only 3.1% missing five or more days. Table 4 below shows the main reasons girls miss school, or leave school early due to menstruation.

Reason Given	Miss School	Leave School Early
Trouble using menstrual product	7.5%	10.0%
Pain	12.5%	12.5%
Fear of Leaking	5.0%	7.5%
Feel unwell/uncomfortable	10.0%	5.0%
Feel ashamed/embarrassed	5.0%	10.0%

Table 5: Reasons for missing school or leaving school early due to menstruation

45.9% of girls said they sometimes or always raise their hand in class when they knew the answer, and 48.4% reported sitting comfortably at their desks, during menstruation. Only 3.2% reported standing at the back of the classroom, a position usually taken when a girl is worried about her menstrual product staying in place, leaking, or smelling. 44.8% of girls attributed a self-reported an increase in academic performance to Femme's intervention.

75.7% of girls were sometimes or always able to partake in all activities during their periods. The types of activities girls most commonly refrained from were sports, housework (which is often also quite physical), and socialising, as can be seen in Figure 9 below. Again, most activities that were missed out on were more physical in nature. Similarly to school, the main reasons given for missing out were pain (48.6%), fear of leaking (31.4%), and feeling uncomfortable or unwell (28.6%). Only two respondents reported not being allowed to take part in certain activities.

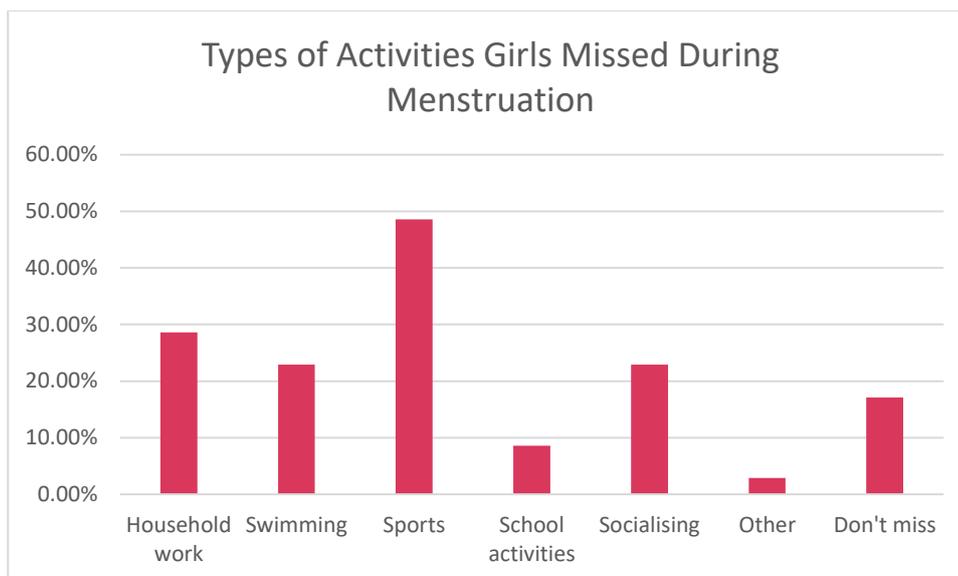


Figure 9: Activities that schoolgirls reported missing at One-Year M&E

The number of AHIs reported ranges from 1 to 7, with a mean of 2.1 which is a rather higher number than expected at M&E. Such numbers are typically seen at baseline, not post-intervention. 43.4% of girls report 0-1 AHIs in the last six months post-training. The most common AHI remains itching/chafing (25.4%).

88.6% reported being somewhat or much more confident during menstruation, due to Femme’s intervention, with 100% reporting somewhat less or much less menstrual-related shame.

11. COMMUNITY GROUPS

11.1 TULEENI ORPHANS HOME

Tuleeni Orphans Home is an orphanage in Moshi. In 2016, 100 women participated in the Twaweza Program; 40 women chose AFRIpads, and 60 chose Ruby Cups. Approximately one year post-workshop, the organisation invited participants to gather for M&E, which was conducted with 11 women. It is unclear why so few participants returned for the follow-up. Moving (for work) is common, and travel to a centre can be expensive and therefore not a priority. Loss-to-follow-up is often more pronounced in lower-resource setting, as well as more resource-intensive to combat. Regardless of the reasons, results may well be biased, as those who return are likely different from those who did not, whether through product uptake and usage, sociodemographics, etc.

11.1.1 SOCIODEMOGRAPHICS

Participants’ age ranged from 17 to 45 years (mean=31.73, SD=9.001), with 70% being married. 10 women had children, the number ranging from 1-7. 72.7% of women did not attend school beyond the primary level.

11.1.2 USAGE

Four participants had been given AFRIpads, and seven Ruby Cups. All those who received AFRIpads were using them.

Nearly 30% were using MCs (two participants). All women not using them reported the reason as pain upon insertion. Pain is a less common reason amongst women who are sexually active or have given birth, making this an uncommon finding that warrants further exploration. However, the very small sample size is likely skewing the results.

Altogether, 54.5% of women were using a reusable menstrual product distributed by Femme. Other menstrual products reported were disposable pads and cloth/rags. No women reported using less hygienic menstrual products such as natural products or mattress stuffing. Six-Week Check-In was not done with this group, which can be seen with the above results and would be helpful if done in the future.

11.1.3 INDICATORS

90.1% of participants reported missing zero days of work due to menstruation, post intervention. 72.7% did not leave work early, also due to menstruation. For those who did miss or leave work early due to menstruation, the reason given was menstrual pain, a common, cross-cutting theme. Our ability to address menstrual pain, as previously noted, is limited to painkillers, heat, mild exercise/stretching, and certain dietary options. More discussion and recommendations can be found in the conclusion.

72.7% of women reported always or almost always being able to take part in their normal activities during menstruation, although two women reported having to continue despite debilitating pain. The types of activities most women reported missing out on were listed as 'other', and participants did not specify what this might be; Further FGDs are required to explore this. Given common cultural beliefs, it may be that women are not partaking in sexual activity during menstruation, although it is also believed that women cannot get pregnant during menstruation.

Itching was the most common symptom reported, with 50% of women (four respondents) who reported two or more AHIs in the last six months, which is higher than what adults typically show. This could be a reflection of the lack of Six-Week Check-In, low product usage, or other currently unknown factor. The extremely small sample size also renders these results less reliable and generalisable.

Only one participant reported being willing to speak to her daughter (or having spoken) about menstruation; interestingly, two women said they would/did speak to their sons about menstruation, suggesting the program is effective at decreasing the taboo of menstruation and normalising it.

Just under half of women were willing to speak up about menstruation as an issue at home, and over half were willing to do so in their community, again suggesting the efficacy of the program at decreasing the stigma and shame that contribute to the menstrual taboo.

All but one participant reported feeling somewhat more or much more confident during menstruation, due to Femme's intervention. Additionally, all women attributed feeling somewhat less or much less shame about menstruation to Femme's program. This suggests that whether or not participants use the products distributed, Femme is effective at tackling menstrual taboos, stigma and shame, and enabling menstruators to feel more confident in their bodies, especially during their periods.

11.3 GIVE A HEART TO AFRICA

Give a Heart to Africa is an NGO in Moshi, Tanzania that empowers women by offering free education and skills training, thus enabling them to better support themselves and/or their families. In June 2017, Femme conducted the Twaweza Program with 49 women, and distributed 49 Femme Kits containing Ruby Cups.

11.3.1 SOCIODEMOGRAPHICS

31 women participated in the Six-Month M&E, ranging in age from 21 to 54 years old (mean = 34.62, SD = 10.54). 40.0% of women completed Standard 7 (the equivalent to finishing elementary school), 6.6% did not complete secondary school, and four completed college. At Needs Assessment, 41.0% reported having jobs, ranging from tailoring, various small, family businesses, to childcare, or nutritional assistant.

13 of the participants (46.4%) were married, another 13 not married, and two were widowed. The number of children ranged from 0-5 (mean = 1.75, SD = 1.65), with seven women reporting not having any children of their own. Participants reported household sizes ranging from 1-8 (mean = 4.20, SD = 1.91), with varying compositions.

The majority of women lived in a more urban setting, as over 90% had neither cattle nor other livestock. Most houses were made of bricks or cement, with roofs of tin, the typical construction for peri-urban and urban houses.

11.3.2 USAGE

All women participating received Ruby Cups. At six months, 88.46% (23 women) reported using their Ruby Cup regularly or semi-regularly; three women were not using, and two had gone through menopause and had no further need.

The reasons given for not using the cups were pain upon insertion (one participant) and difficulty inserting (two participants). One woman indicated that although she had experienced difficulty using the cup, she was still trying.

11.3.3 INDICATORS

The average cost of disposable pads per period was 4154.77 TSH (1.85USD), which had been unaffordable for 71.4% of participants at some point. At the six-month timepoint, participants were spending an average of 1,333.33 TSH (0.59USD) per period, a significant decrease that would result in them being less financially dependent on a partner, or being able to choose how to spend/save more of their own income. Women reported a mean of 2.54 menstruators per household, but only 1.94 (SD = 2.605) using disposable products. Figure 10 (below) shows the change in use of menstrual product from before to six-months post-intervention.

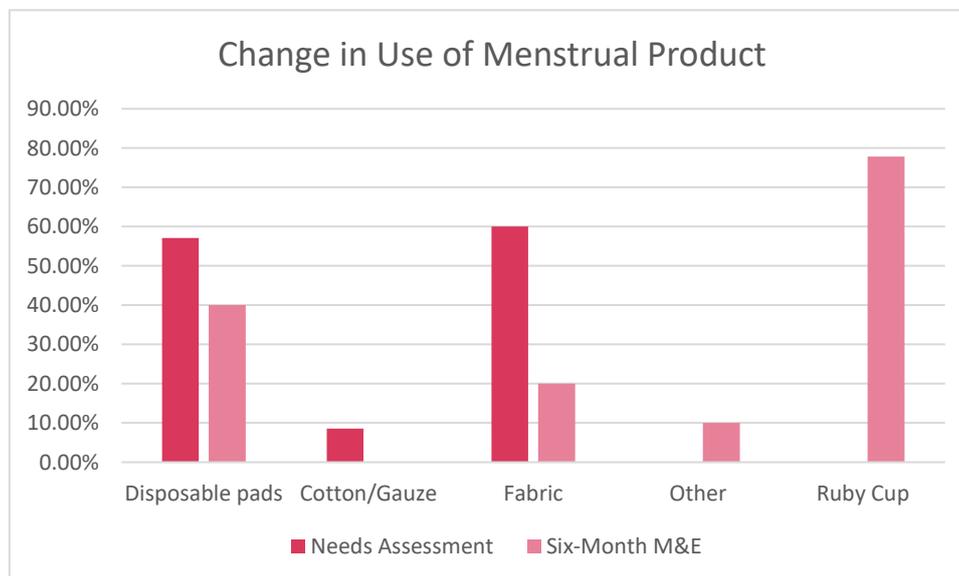


Figure 10: Change in participants' use of menstrual product from Needs Assessment to Six-Month M&E

At six months, women reported a sharp decrease in amount of work they missed due to menstruation, whether not attending or needing to leave early. Women were much less likely to miss or leave paid work due to pain, fear of leaking, or shame, and none reported missing/leaving early due to lack of a menstrual product. Figure 11 shows the everyday activities participants reported missing. As with adolescent girls, adult women were more likely to report being unable to partake in more physical activities such as farming, sports, or more vigorous housework.

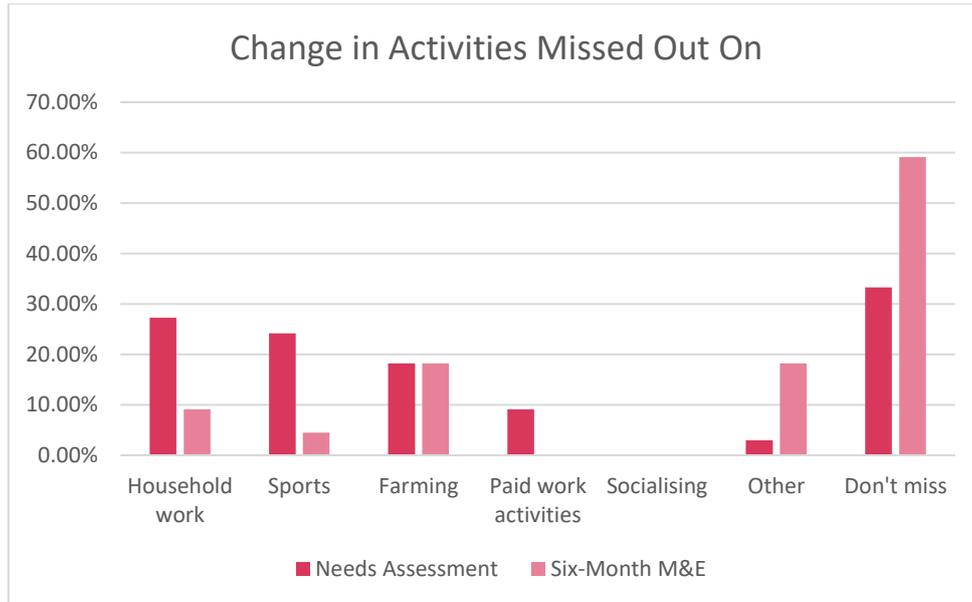


Figure 11: Change in activities participants missed out on during menstruation

At Needs Assessments, only 6.3% of participants reported not experiencing any AHIs in the previous six months; six months post-intervention, over 50% of women reported no symptoms, a significant improvement that also improves their quality of life. Figure 12 (below) shows the decrease in the number of symptoms women reported. Itching/chafing was the most commonly-reported symptom both before and after; abnormal discharge, vulval pain, and burning whilst urinating were also commonly reported.

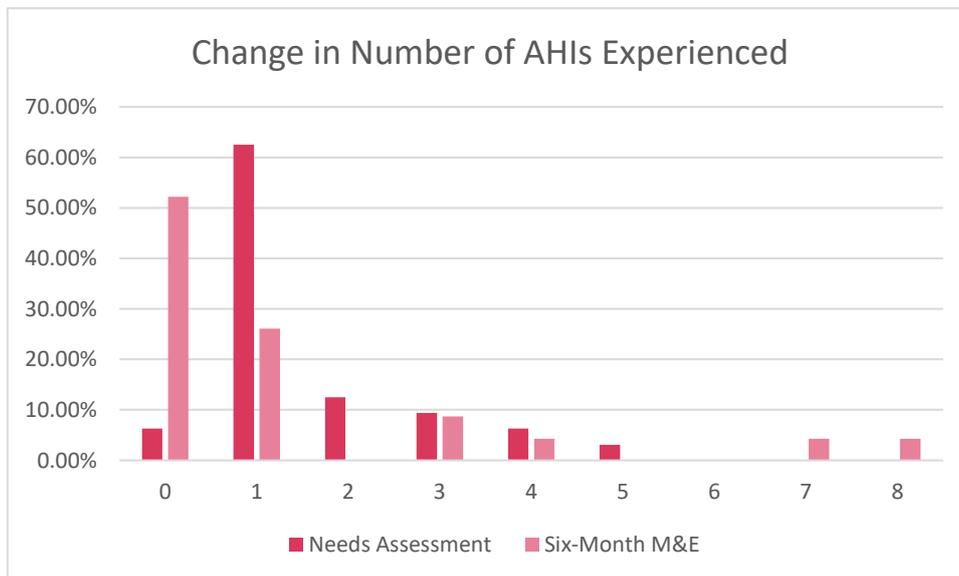


Figure 12: Change in number of AHIs reported by women

The number of women reporting each symptom increased from Needs Assessment to M&E, which is interesting when considering there was an overall decrease in number of AHIs reported. There could be several reasons for this increase, such as increased awareness of symptoms, or established rapport making participants more comfortable reporting more sensitive information. At Twelve-Month M&E, FGDs will be conducted to further explore this result and determine if the issue is programmatic or contextual.

The Twaweza Program is effective at tackling taboos and shame in both adolescents and adults. Figure 13 shows the increase in participants' willingness to talk about menstruation with males and females,

at home and within the community. Particularly striking is the increase in percentage who would be willing to broach the subject with men.

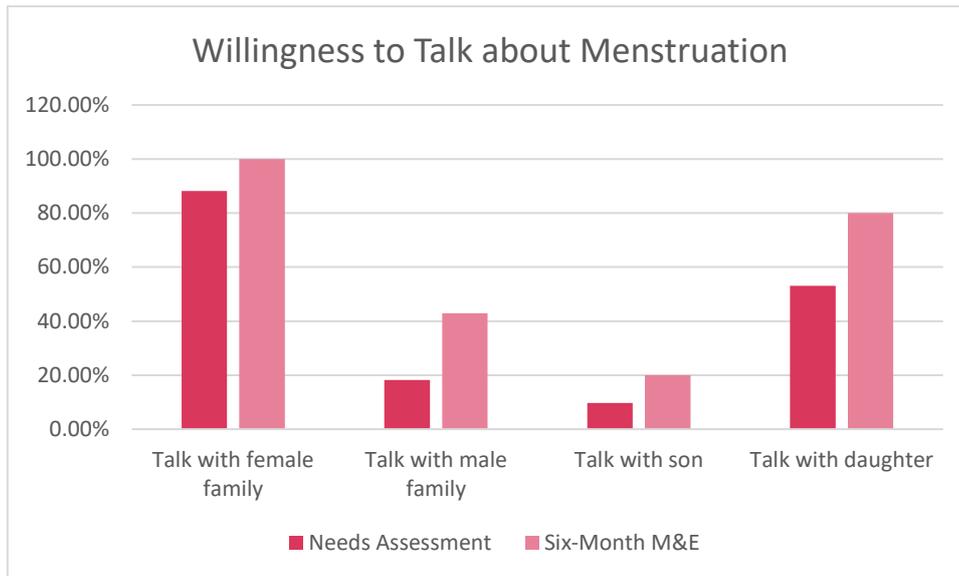


Figure 13: Change in the willingness of participants to speak about menstruation to others

100% of participants reported being willing to talk about menstruation as an issue, both at home and within their communities. Additionally, all women reported somewhat less or much less shame during menstruation, and nearly 90% reported somewhat or much more confidence during their periods. Several participants added that they had never felt shame or decreased confidence during menstruation, thus reporting no change.

Especially encouraging was the increase in women who will/have talked to their children, sons and daughters, about menstruation, as this will continue to impact long-term on the next generation.

12. CONCLUSION

Taken together, these results demonstrate that Femme is effectively improving women’s quality of life by tackling numerous aspects affected by menstruation. Participants show an increased ability to participate in their lives at school, work and in their community, which is culturally important and contributes to mental health. Fewer AHIs shows increased menstrual and reproductive health, meaning menstruators are more comfortable during menstruation, students are better able to concentrate in school, and there is decreased risk of long-term reproductive health issues. Decreased menstrual shame along with increased confidence, and decreased menstrual stigma, as evidenced by willingness to broach the topic with boys, and in the community, means menstruators are less ostracised and excluded, and less likely to have body image issues that spike every month when they menstruate. The school or community is also more likely to be a positive environment, and men/boys are less likely to tease and shame menstruators, and more likely to be supportive and able to help them if needed. These results are valid for both adolescents and adults, in rural and urban areas.

Results also show that, despite being more resource-intensive, menstrual cups are a feasible component of a product-based intervention in Tanzania. Education is required to overcome social, religious, and cultural taboos, myths, and fears, but menstruators who are using MCs are very positive about its impact on their quality of life during menstruation. They require less soap, water, and are more private than external absorbents, making them ideal in especially low-resource settings.

In instituting the Six-Week Check-In, Femme expects to see increased usage of MCs by tackling issues of fear, pain upon insertion, virginity and the hymen, and providing more support through an in-depth Q&A session, and identifying successful student users who can act as leaders and encourage their peers.

Lack of access to water is an important issue, especially with the use of reusable pads. WASH in schools remains a barrier, and despite national standards, secondary school facilities are poor. A concerted government effort is needed for improvement of school facilities to meet increased student enrolment, as well as the menstrual needs of girls and female teachers. Partnerships with WASH organisations, and MHM-inclusive WASH programming can help to fill this gap.

Menstrual pain is consistently the main reason given for missing out on school, work, or social/community activities and events, and the persistence of menstrual pain has resulted in Femme updating its curriculum to include some pain management techniques in the workshops. Although results show this is effective to some extent, health care professionals need to be more educated on menstrual pain and evidence-based management options, which need to be made available in Tanzania. This is a large-scale structural change that begins with increased research onto causes and treatment, improved health education for professionals, and better patient communication.

Continued research and increased funding is required to further develop standardised indicators, and verify self-report measures to ensure confidence in what we are being told, and that we are measuring not only what we want to be, but the right measures. A tool that collects comparable information across different settings and programs is being developed for East Africa, with the hopes that this will be expanded. A large dataset would show a baseline of current conditions and issues, and allow broad comparability and evaluation of interventions, as well as meta-analyses to determine overall impact and relative efficacy. Shared tools will also increase collaboration and cooperation within and across the sector, and maximise resources and funding opportunities.

Quality baseline and M&E data are vital to lobbying funders, creating policy change, and not just recognising, but fully including and implementing MHM-friendly programming and activism at the global level. Scaleable, reproducible interventions like our Twaweza Program, with demonstrated feasibility, efficacy, and impact, are key to the growing MHM and gender equality movements.

In spite of the limitations, Femme has shown that its Twaweza Program can be readily adapted to different populations and contexts, and is a low-resource intervention that can bring about long-term, sustainable change that ultimately empowers women.

13. REFERENCES

- ¹ Crofts, T. and Fisher, J. (2012) 'Menstrual Hygiene in Ugandan Schools: An Investigation of Low-Cost Sanitary Pads', *Journal of Water, Sanitation, and Hygiene for Development*, 2(1), pp. 50-58. doi: 10.2166/washdev.2012.067.
- ² Mason, L., Nyothach, E., Alexander, K., Odhiambo, F.O., Eleveld, A., Vulule, J., Rheingans, R., Laserson, K.F., Mohammed, A. and Phillips-Howard, P. (2013) "We Keep It Secret So No One Should Know" A Qualitative Study to Explore Young Schoolgirls Attitudes and Experiences with Menstruation in Rural Western Kenya', *PLoS ONE*, 8(11), pp. e79132. doi: 10.1371/journal.pone.0079132.
- ³ Younis, N., Khattab, H., Zurayk, H., El-Mouelhy, M., Amin, M.F. and Farag, A.M. (1993) 'A Community Study of Gynecological and Related Morbidities in Rural Egypt', *Studies in family planning*, 24(3), pp. 175-186. doi: 10.2307/2939232.
- ⁴ Xia, D., Liao, S., He, Q., Choi, K. and Mandel, J.S. (2004) 'Self-Reported Symptoms of Reproductive Tract Infections Among Rural Women in Hainan, China: Prevalence Rates and Risk Factors:', *Sexually transmitted diseases*, 31(11), pp. 643-649. doi: 10.1097/01.olq.0000143111.33741.40.
- ⁵ Bahram, A., Hamid, B. and Zohre, T. (2009) 'Prevalence of Bacterial Vaginosis and Impact of Genital Hygiene Practices in Non-Pregnant Women in Zanjan, Iran', *Oman Medical Journal*, 24(24), pp. 288-293. doi: //dx.doi.org.liverpool.idm.oclc.org/10.5001/omj.2009.58.
- ⁶ Allah, E.S.A. and Elsabagh, E.E.M. (2011) 'Impact of Health Education Intervention on Knowledge and Practice About Menstruation Among Female Secondary School Students in Zagazig City', *Journal of American Science*, 7(9), pp. 737-747.
- ⁷ Singh, S., Kandpal, S.D. and Roy, D. (2011) 'Menstrual Hygiene Practices and RTI Among Ever-Married Women in Rural Slum', *Indian Journal of Community Health*, 22(2,1), pp. 41-43.
- ⁸ Balamurugan, S.S. and Bendigeri, N.D. (2012) 'Community-Based Study of Reproductive Tract Infections Among Women of the Reproductive Age Group in the Urban Health Training Centre Area in Hubli, Karnakata', *Indian Journal of Community Medicine*, 37(1), pp. 34-38. doi: 10.4103/0970-0218.94020.
- ⁹ Das, P., Baker, K.K., Dutta, A., Swain, T., Sahoo, S., Das, B.S., Panda, B., Nayak, A., Bara, M., Bilung, B., Mishra, P.R., Panigrahi, P., Cairncross, S. and Torondel, B. (2015) 'Menstrual Hygiene Practices, WASH Access and the Risk of Urogenital Infection in Women from Odisha, India', *PLOS ONE*, 10(6), pp. e0130777. doi: 10.1371/journal.pone.0130777.
- ¹⁰ Kerubo, E., Laserson, K.F., Otecko, N., Odhiambo, C., Mason, L., Nyothach, E., Oruko, K.O., Bauman, A., Vulule, J., Zeh, C. and Phillips-Howard, P. (2016) 'Prevalence of Reproductive Tract Infections and the Predictive Value of Girls' Symptom-Based Reporting: Findings from a Cross-Sectional Survey in Rural Western Kenya', *Sexually transmitted infections*, 92(4), pp. 251-256. doi: 10.1136/sextrans-2015-052371.
- ¹¹ Juyal, R., Kandpal, S.D. and Semwal, J. (2014) 'Menstrual Hygiene and Reproductive Morbidity in Adolescent Girls in Dehradun, India', *Bangladesh Journal of Medical Science*, 13(2), pp. 170-174. doi: 10.3329/bjms.v13i2.14257.
- ¹² SNV (2014) *Girls in Control: Baseline Survey Report on Menstrual Hygiene Management*. Available at: http://www.snv.org/public/cms/sites/default/files/explore/download/girls_in_control_baseline_report_-_tanzania.pdf

-
- ¹³ Kimwaga, R., Mayo, A.W. and Guya, E. (2014) 'Menstrual Hygiene Management in Secondary schools in Tanzania', *International Journal of Science and Technology*, 3(1), pp. 27-40.
- ¹⁴ Sommer, M. (2011) 'An Early Window of Opportunity for Promoting Girls Health: Policy Implications of the Girls Puberty Book Project in Tanzania', *Global Journal of Health Education and Promotion*, 14(1).
- ¹⁵ Hennegan, J.M. (2017) 'Menstrual Hygiene Management and Human Rights: the Case for an Evidence-Based Intervention', *Women's Reproductive Health*, 4(3), pp. 212-231.
- ¹⁶ Oster, E. and Thornton, R. (2011) 'Menstruation, Sanitary Products, and School Attendance: Evidence from a Randomized Evaluation', *American Economic Journal: Applied Economics*, 3(1), pp. 91-100. doi: 10.1257/app.3.1.91.
- ¹⁷ Sommer, M. (2010) 'Where the Education System and Women's Bodies Collide: The Social and Health Impact of Girls' Experiences of Menstruation and Schooling in Tanzania', *Journal of adolescence*, 33(4), pp. 529. doi: 10.1016/j.adolescence.2009.03.008.
- ¹⁸ Crichton, J., Okal, J., Kabiru, C.W. and Zulu, E.M. (2013) 'Emotional and psychosocial aspects of menstrual poverty in resource-poor settings: a qualitative study of the experiences of adolescent girls in an informal settlement in Nairobi', *Health care for women international*, 34(10), pp. 891-916. doi: 10.1080/07399332.2012.740112.
- ¹⁹ Phillips-Howard, P., Nyothach, E., ter Kuile, F.O., Omoto, J., Wang, D., Zeh, C., Onyango, C., Mason, L., Alexander, K.T., Odhiambo, F.O. and others (2016) 'Menstrual cups and sanitary pads to reduce school attrition, and sexually transmitted and reproductive tract infections: a cluster randomised controlled feasibility study in rural western Kenya', *BMJ open*, 6(11), pp. e013229.
- ²⁰ Chaaban, J. and Cunningham, W. (2011) *Measuring the economic gain of investing in girls: The girl effect dividend*. The World Bank. Available at: http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&res_dat=xri:policyfile&rft_dat=xri:policyfile:article:00139580.