An Exploratory Study of Menstruation Management in Timor-Leste

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besik
BEE, SANEAMENTU NO IJENE IHA KOMUNIDADE

Australian AID

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ACRONYMS

BESIK	East Timor Rural Water Supply and Sanitation Program (BESIK – Be'e, Saneamentu no Ijiene iha Komunidade)
CTVL	Red Cross of Timor-Leste (Cruz Vermelha de Timor-Leste)
DFAT	Australian Government Department of Trade of Foreign Affairs and Trade
CAPS	Community Action Planning Process
CLTS	Community Led Total Sanitation
MoPTC	Ministries of Public Works, Transport and Communications
MoH	Ministry of Health
NGOs	Nongovernmental Organizations
MHM	Menstrual Hygiene Management
PAKSI	Community Action Plan for Sanitation and Hygiene
WASH	Water, Sanitation, and Hygiene

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ACKNOWLEDGEMENTS

This Exploratory Study on Menstruation Management in Timor-Leste was commissioned by the BESIK (Be'e, Saneamentu, no Ijiene iha Komunidade) programme to gain insights to the factors that affect menstrual management amongst rural women in Timor-Leste. The insights gained from this research will be used to influence the design of sanitation programs by raising the issue of choice in toilet designs, including superstructure, and targeting activities for women and older girls, inform concrete recommendations for integrating MHM within household sanitation programs and schools, and add to the existing global literature on product accessibility and barriers to MHM.

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EXECUTIVE SUMMARY

BACKGROUND

Globally, menstrual hygiene is slowly gaining traction as a critical water, sanitation, and hygiene (WASH) issue. Despite growing awareness for this topic over the past few years, menstrual hygiene management (MHM), until very recently, had remained almost entirely unaddressed in WASH programs.

Within Timor-Leste, the increased importance of MHM is reflected in the National Sanitation Policy and in the current PAKSI (Community Led Total Sanitation (CLTS) Resource Guide. However, very little is known about menstruation hygiene in Timor-Leste. In light of this, the BESIK program conducted an exploratory study to better understand what are the current menstrual hygiene practices, attitudes and beliefs among rural Timorese women and how do these factors influences the uptake and usage of sanitation and hygiene products in Timor-Leste.

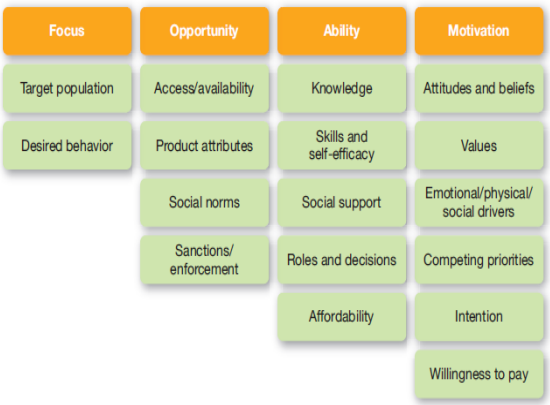
STUDY DESIGN

A. Analytical framework:

The SaniFOAM[14] behavior change framework guided the design of the research questions for this study. The framework has four headings, explained below:

- **Focus** refers to the need to identify the desired behaviour and the target populations where this target behaviour is to be promoted.

Figure 1: SaniFOAM Framework



The other three columns–Opportunity, Ability, and Motivation—each represent a category of behavioural determinants (factors that can help or hinder an individual in adopting a behaviour).

- **Opportunity** is a category of four factors that can affect an individual's *chance* to perform the target behaviour, including structural and institutional factors such as access to products and services, social norms, and fines or sanctions.
- **Ability** is a category of five factors related to an individual's skills and capacity to perform the target behaviour including their knowledge and skills.
- **Motivation** is a category of six factors that affect an individual's desire to perform the target behaviour including his/her beliefs and values and social, physical, or emotional drivers.

[14] Devine, Jacqueline. *Introducing SaniFOAM: A Framework to Analyze Sanitation Behaviors to Design Effective Sanitation Programs*, Water and Sanitation Program, World Bank 2009.

B. Research questions

The study sought to understand the following:

1. What are the current practices of rural Timorese women around menstrual management?
2. How does having access to a toilet affect women's management of their menses, if at all?
3. How are women supported by members of their family during menstruation, and what type of support do they receive?
4. How are household roles and decisions about sanitation determined, and how do women's menses factor into household decision making around sanitation and hygiene options?
5. What are the individual and community attitudes and beliefs related to menstruation and how, if at all, do they affect menstruating women and their management of their menses?

METHODOLOGY

This was a qualitative study involving pair or group interviews with women, men and kiosk owners. Data was collected from September through October 2013 in Maubara and Liquica Vila subdistricts within Liquica district and in Cailaco and Maliana subdistricts within Bobonaro district. These areas were chosen in part because they have existing WASH interventions in order for the team to understand the impact of toilet ownership on MHM practices. In total, thirty-one interviews were conducted with 62 household members. Of these, 45 were women and 17 were men. Of the 45 women interviewed, 36 were between the ages of 15-50 and nine were menopausal. Four individual interviews were conducted with kiosk owners in Bobonaro, for a total of 66 participants.

FINDINGS

The findings are presented categorically following the SaniFOAM behaviour change framework, starting with Opportunity determinants, followed by the Ability determinants, and concluding with the Motivation determinants.

Opportunity Determinants

A. Affordability, availability, and product attributes/preferences

Women in this study were able to access and regularly use either homemade or store-bought pads, or both. No one cited using tampons or menstrual cups. Product cost and availability did not appear to be major barriers for most women although some women reported kiosks being sold out of disposable pads or that the price was increased significantly by the kiosk owner, if there was a scarcity of disposable pads in the kiosks.

STORE-BOUGHT PADS: The majority used either store-bought pads or homemade pads, or a combination of both. The most common type of store-bought pad cited was the Softex brand. A pack of eight pads costs, on average, between 0.50 USD to 0.75 USD. While the majority of women reported being able to afford the disposable pads, some felt the cost to be "a bit expensive." As such, some use disposable pads only for going out, opting for homemade pads when at home.

HOMEMADE PADS: Another type of pad commonly used is *henna,* a homemade product made by folding or sewing together several layers of old sarong cloth to serve as a pad. Older women are more likely to use *henna* exclusively and younger women are more likely to use store-bought pads exclusively.

To be reused, *henna* must be washed, which may pose a challenge for those households facing water shortages. Washing *henna* also increases a woman's workload during her menses.

B. Access to toilets and their impact on MHM:

Of the total of 45 women interviewed, 32 households (16 in Liquica and 16 in Bobonaro), or 70%, had toilets. Of the 16 households that owned toilets in Bobonaro, 13 owned pour flush with cement bowls. Twelve toilets had walls constructed of cement and 4 were made of local materials. Roughly 85%, currently use their toilets for defecation, urination, and MHM. The remaining five women owned toilets but did not use them due to insufficient water. No one reported using a toilet for defecation and urination but not for MHM.

C. Changing, disposal, and washing and drying practices

Women were asked specifically about their changing, disposal, washing and drying practices in managing their menses.

CHANGING: Women reported changing pads between two to four times per day, irrespective of the product used. Locations for changing pads varied among the bedroom, bathroom, bush, or river. Key factors influencing women's choice of location were the need for **privacy and access to water.** If either was not available, then women were less inclined to use them.

DISPOSAL: Women interviewed cited a variety of disposal practices, the most unhygienic practice being the throwing of pads out into the open. Only four women reported throwing their pads into a rubbish bin and burning them.

WASHING, DRYING AND STORING *HENNA*: Most women washed their *henna* pads with other laundry items, but would afterwards dry them underneath other clothing—in the shade or in the toilet—to avoid the shame of having others see their stained pads.

ABILITY DETERMINANTS

A. Social Support

Women mentioned physical symptoms such as sleepiness, fatigue, and achiness as the main symptoms during menstruation and some mentioned mood changes. During menstruation, women described the roles of various household members in providing the women with physical and informational support.

Husbands: Despite being a taboo topic to discuss in public, menstruation seems to be a topic open to discussion between husbands and wives in private. Almost every woman mentioned their husbands knowing about their menses each month. Men and women spoke of husbands carrying water, washing clothes, and helping out with chores—with some men even taking over the cooking.

Children and other female family members: Children were also frequently named as a source of physical support for their mothers during their periods. In addition, extended family members—sisters, sister-in-laws, and aunts—were named as providers of physical support, helping out with chores and manual tasks. Elder sisters were also identified as sources of information, particularly if the mother happened to be very old or had passed away.

Mothers: Mothers were the most frequently cited source of informational and emotional support for young girls. Mothers are likely the ones to explain menses to their daughters. Mothers tended also to be the ones who provide them with suggestions on how to deal with these ailments and who offer specific instructions on how to keep clean and provided them with pads. The majority of mothers, however, placed restrictions including prohibitions from cooking, farming, or being outside during their menses due to attitudes and belief about women's state of impurity, shame and fragility during menstruation.

B. Roles and decision making for toilets

Most men and women reported joint decision making for both daily expenses and higher- priced purchases. In some households, women reported making decisions on their own for daily expenses but, together, with their husbands, on larger-ticket items. Men, were more likely to report sole decision making power in purchasing high priced items such as a toilet.

MOTIVATION DETERMINANTS

Although not a key research question, households owning toilets were asked why they invested in a latrine. Both women and men cited a desire to stop defecating in the open as a key reason; knowledge of the health benefits of using toilets was also mentioned by some. A few women invested in a toilet to avoid the embarrassment of not having a toilet for house guests to use.

A. Beliefs and attitudes

The literature on MHM uncovered a wealth of insights about beliefs related to menstrual blood from around the world. Interviews with men and women in this study also yielded rich insights about the beliefs related to menstrual blood.

White blood: It is physiologically normal for women of reproductive age to experience discharge during specific times of their monthly cycle.[22] Participants in this study commonly referred to this monthly occurrence as "white blood" or "white blood discharge." Every woman interviewed expressed the need to ensure the downward travel and proper release of "white blood" from the body lest it travel up to the woman's head and cause her to go crazy.

Controlling blood flow: Once their menses begin, women want blood to be released steadily—neither too quickly, nor too slowly. To avoid the heavy disbursement of blood (too much heat) or 'congealing into a ball in the womb' and not disbursing (too much cold), women in this study practice a number of restrictions:

- Avoiding heavy work, such as carrying water or looking for firewood;
- Reducing exposure to extreme temperatures (e.g., avoiding the sun, avoiding contact with cold water, or abstaining from drinking ice water);
- Not drinking coffee and not eating chili or papaya leaves, as they are believed to be "hot" foods;

[22] http://dischargebeforeperiod.org/pre-period-symptoms

- Avoiding cold baths and abstaining from washing hair, so as to prevent the onset of headaches and dizziness (i.e. white blood travelling up to the head).

Menstruation is a disease or a spell: Despite having access to store-bought pads, many women reported being more likely to spend time at home during their menses.

Words such as "disease," "spell," and "sickness" were commonly used by the men when describing their wives' physical state during their menses. Men seemed also to hold strong beliefs about their wives being "contaminated" or "impure" while they are menstruating. Menstrual blood, described as "dirty," is believed to attract flies which spread disease.

As a result, women are often forbidden to cook or bake during their menses for fear they may contaminate the food. And because they may kill the plants, they are also frequently prohibited from tending to their gardens. Men also voiced beliefs about the need to exclude women from family and social activities such as greeting guests or attending community meetings while menstruating.

MHM and school attendance

Although MHM within schools was not included as a key research question, nonetheless, a few questions were presented to get a sense of whether or not attitudes and beliefs about menstruation would impact a girl's abilities to attend. Some mothers mentioned both physical symptoms and social stigma as deterrents to school attendance. However, others reported sending daughters to school with store-bought pads so they could change at school. It was not clear if girls were prevented by their families from going to school. Some reported not going to school during menses due to the fear of staining. What is evident from the interviews is the important role schools play in educating girls about the physiology of menstruation; further research is needed in this area to inform future interventions.

CONCLUSIONS AND RECOMMENDATIONS

Findings from this study provide a greater understanding of MHM in Timor-Leste, in particular, how behavioural determinants such as access, social support, attitudes, beliefs, and social norms related to menstruation influence MHM practices.

1. **CONCLUSION: ACCESS to toilets improves women's ability to manage their menses.**
   RECOMMENDATION: Generate greater demand for toilets, using improved MHM as a key entry point. The *additional* benefits of owning a toilet for MHM should be integrated into all sanitation marketing materials and promotion activities such as:
   - **Pit latrines** provide a convenient and hygienic way to change and dispose of pads as the pads can be dropped directly into the pit.
   - **Pour flush latrines** allow for cleaning, washing, and disposal all in one place with a small addition of a rubbish bin inside or next to the latrine.

   RECOMMENDATION: The benefits of a toilet should be framed not only in the context of improved MHM, but also in also in the context of making sanitation needs easier for pregnant women.

2. **CONCLUSION: ACCESS to and preference for disposable pads is on the rise**
   RECOMMENDATION: Provide information on the correct operation and maintenance of toilets and the safe disposal of pads including:

- **Latrine walls:** Women highly value privacy for MHM, thus, latrine walls made of traditional materials need to be constructed and regularly repaired to ensure privacy for menstruation management.
- **Pour flush latrines:** Communication on operation and maintenance can be effective and should be included in both marketing materials and training curriculum for latrine businesses. There is a real risk of blocking the latrine if correct information about disposal is not provided, and hence impeding sustainable use of the toilet.
- **Pit Latrines:** Can be promoted, not only for reasons of water shortage, but also for reasons of safer disposal of sanitary pads.

RECOMMENDATION: Provide information on the correct operation and maintenance of pit latrines. One man in the study reported using his pit latrine for rubbish disposal. This is a highly inadvisable practice and owners of pit latrines need to be informed of the negative health and environmental impact of using pit latrines for this purpose.

3. **CONCLUSION: SOCIAL SUPPORT is provided to women during their menses by family members.**
   RECOMMENDATION: Discuss benefits of owning a toilet in the context of menstruation management among couples. In the follow-up phase of PAKSI during which Community Natural Leaders conduct household visits, the benefits of latrines can be marketed to illustrate how they make menstruation easier for the wives by providing them with a clean, private place for changing, cleaning, and washing. In addition, having a toilet in the home also results in greater convenience for the husbands who no longer have to escort their wives to find a safe place to defecate or for MHM.

4. **CONCLUSION: ROLES AND DECISIONS for major household items are determined by men but women can influence the design.**
   RECOMMENDATION: Provide women with adequate information on latrine options related to menstruation management. Community Natural Leaders can emphasize toilet features beneficial to MHM, including availability of water, walls that provide sufficient privacy, and rubbish bins.

5. **CONCLUSION: School attendance may affects girls' attitudes about menstruation and MHM practices.**
   RECOMMENDATION: Because this study did not include MHM within schools, only a few questions were asked about the school attendance during menses. Schools play a critical role in educating girls about the physiology of menstruation. Further research is needed to develop interventions that aim to 1) increase knowledge among girls about the physiology of menses and 2) build mothers' skills to accurately and openly discuss MHM with their daughters, among others.

6. **CONCLUSION: BELIEFS AND ATTITUDES about menstruation are deeply ingrained and stem from a lack of knowledge about the biology of menses.**
   RECOMMENDATION: In light of the positive impact of schools in improving knowledge and attitudes around menstruation, sanitation programs could, as part of their promotion activities, organize "hygiene workshops" at middle schools to encourage mothers and daughters to come and learn about menstruation. These workshops can also aim at skill building for mothers to discuss MHM with their daughters in a healthy manner given the high influence mothers have regarding MHM.

7. **CONCLUSION: Further research on menstruation and MHM in Timor-Leste is needed.**
   RECOMMENDATION: Future studies could explore the following questions:

   - What do men and women currently know about pad disposal as stratified by households with pit latrines, pour flush latrines, and no latrines?

- What are the disposal habits for *henna* and store-bought pads among households with toilets as compared to those without toilets?
- How willing would people be (village chiefs or health workers, for example) to include the topic of MHM in public discussions about investing in latrines?
- What are the barriers to/enablers for girls attending school during their menses?

I. INTRODUCTION

Globally, menstrual hygiene is slowly gaining traction as a critical water, sanitation, and hygiene (WASH) issue. Despite growing awareness for this issue over the past few years, menstrual hygiene management (MHM), until very recently, had remained almost entirely unaddressed in WASH programs. This failure to act can be attributed largely to the taboos surrounding the topic and the reluctance of women and men to talk openly about the matter. Although a normal physiological process essential for reproduction and women's health, menstruation is still widely stigmatized as being "unclean" or "dirty," such that in many countries, women—especially those living in poor, rural areas—are often barred from participating in community and livelihood activities during their menses. Given that a woman will spend roughly 3,600 days (about 10 years[1]) of her life menstruating, these restrictions on activity can result in considerable loss of economic, social, and educational benefits for a woman and her family. Breaking the silence surrounding MHM and overcoming the reluctance within the WASH sector to address the issue is crucial for improving the conditions for women and girls in these communities.

The reluctance to candidly address an important, but closeted, topic is not without precedent within the sector. Like MHM, "open defecation," another "dirty" topic within the WASH sector (and society at large), had only, in the last ten years, become a socially acceptable subject to discuss openly. Despite defecation being a natural bodily process, this "dirty" topic had for many years remained unaddressed, eclipsed in favor of the "cleaner" topic of water supply. However, the rapid uptake of the CLTS[2] approach to end the practice of open defecation worldwide, combined with policy and advocacy efforts to improve the enabling environment for sanitation, helped alter the prevailing attitude within the sector. By bringing into the limelight the needs of billions living without toilets and the difficulty of motivating those households to invest their own resources into obtaining a toilet, ODF (open defecation free) advocates had begun the important process of garnering much needed attention and social acceptance for the issue. Now, as a result of these consciousness-raising efforts, an internet search for the terms "open defecation" or "open defecation free" will yield links to numerous articles detailing how governments—like those of India and Nepal—are committed to being ODF within the next five to ten years. Add to that, the notable increase in media coverage highlighting communities—spanning Asia to Africa—that have been declared ODF, and this widespread shift in attitude is clear.

While there are still numerous challenges to overcome, that a major shift in attitude towards the topic of menstrual hygiene is also now taking place—and that MHM as a WASH issue is at last gaining prominence—is evident in the official declaration of May 28, 2014 as the first Menstrual Hygiene Day.[3] Having a day dedicated to MHM is an important step towards increasing knowledge of the issue, gaining political momentum, and nearing a future when the "secret" topic within WASH can be discussed frankly and addressed adequately.

[1] http://menstrualhygieneday.org/
[2] http://www.communityledtotalsanitation.org/
[3] http://mensttual.hygieneday.org/

CHALLENGES TO MHM GLOBALLY

Because menstruation is a very personal topic, existing literature on MHM is thus far limited. In 2013, an analysis of peer-reviewed and published studies on MHM was conducted to examine the health and psycho-social outcomes of MHM methods used in low- and middle- income countries.[4] The analysis revealed that only a handful of qualifying studies examined MHM as the key issue; most articles include MHM as only one variable within the context of larger studies, such as those examining reproductive health or maternal health, for example. Apart from scholarly research, efforts are now being made at the programmatic level to add to the knowledge and guidance on how to approach MHM, including WaterAid's recent launching of a comprehensive guide on MHM, titled *Menstrual Hygiene Matters: A Resource for Menstrual Hygiene Management around the World*.[5] The guide highlights some of the barriers to proper MHM:

- **Lack of knowledge** of menarche and of menstruation management among adolescent girls;
- **Lack of knowledge and skills** among mothers and teachers to discuss menarche with daughters and students;
- **Access to affordable MHM products**, particularly for rural and poor women;
- **Roles and decisions** – Girls are not able to negotiate for money to buy menstrual products and women are not able to influence decisions on toilet purchases;
- **Shame and stigma** associated with showing physical signs (blood stains) of menses;
- **Lack of sanitation facilities** at school results in many girls staying at home;
- **Beliefs and attitudes** around women being "dirty" or "polluted" when they have their menses.[6]

Figure 2: Where women manage menses in India

66% open field or outside

16% dark room

11% bathing area

6% community toilet

1% cowshed

Such barriers often result in the exclusion of girls and women from their daily domestic activities and a withdrawal from family and community activities. *Menstrual Hygiene Matters* summarizes where women in India manage menstruation in the absence of a household toilet (**Figure 2**).[7]

Suggested within the guide is that some women and girls do not use the household toilet—even when they have a private household facility—because of concerns about not wanting to mark the toilets or because bloody, or soiled, pads may be visible to other users. In India, up to 20% of women who own toilets do not use them for menstruation management.[8] The type of toilet used may also contribute to this reluctance.

From the combined literature on MHM and school attendance worldwide—which is unfortunately limited—barriers to proper MHM practices and behavioral determinants (factors that can facilitate or hinder a behavior) surrounding MHM *in schools* have also been identified. According to the literature, poorly-functioning toilets

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[4] Sumpter, Colin, and Belen Torondel. "A Systematic Review of the Health and Social Effects of Menstrual Hygiene Management," PLos One (2013); 8(4): e62004, published online April 2013. 10.1371/journal.pone.0062004. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3637379/

[5] House, Sarah, Therese Mahon, and Sue Cavill, Menstrual Hygiene Matters: A Resource for Menstrual Hygiene Management around the World, (WaterAid, 2012).

[6] Guterman, M., P. Mehta, and M. Gibbs, "Menstruation Taboos among Major Religions," The Internet Journal of World Health and Societal Politics 5, no.2 (2007): http://ispub.com/IJWH/5/2/8213

[7] Sarah House, Therese Mahon, and Sue Cavill, Menstrual Hygiene Matters: A Resource for Menstrual Hygiene Management around the World, p. 29 (WaterAid, 2012).

[8] Ibid.

that lack water and the absence of soap for washing are two major impediments to proper MHM practices in schools. Another is that school toilet stalls are not typically sex-separated, and therefore offer insufficient privacy or shelter for changing. As a result of these barriers to proper MHM in schools, absenteeism among girls is high. A recent study of MHM in Uganda estimated that girls miss 24 days of school, or 11% of total school days, due to menstruation.[9] As underscored in one World Health Organization bulletin, these high rates of absenteeism often lead to undesirable consequences for these young girls:

> *The lack of school toilets with privacy and facilities for menstrual hygiene contribute to sporadic attendance and drop-out. If our girl child does not overcome these constraints, she will likely face early marriage and early child bearing.*[10]

Social factors such as shame and stigma and physical factors like pain or discomfort were also identified as reasons for girls missing school.

II. CONTEXT

BESIK PROGRAM

DFAT, through BESIK (Tetum acronym for Rural Water, Sanitation and Hygiene), is collaborating with its Timorese government counterparts in the Ministries of Public Works, Transport and Communications (MoPTC) and Health (MoH) to improve the health and quality of life of rural people through sustainable and equitable WASH interventions that are community led and managed. The BESIK program recognizes the importance of a whole-of-community approach, which encourages equal participation from women and men in WASH management.

Toward this end, two programs applying this whole-community approach are now being implemented in Timor-Leste: the CAP process— *Community Action Planning for water supply*—and the PAKSI process—*Community Action Planning for sanitation and hygiene.* In 2011-12, BESIK supported the MoH in a pilot of CLTS. In this original Bangladesh design, key drivers such as disgust, knowledge, shame, and social pressure were used to awaken communities to the need for improved sanitation. In the PAKSI design currently in place in Timor-Leste, pride, knowledge, and social pressure are being emphasized instead.

Also part of this whole-community approach—and integral to the program's success—is involving women in family and community health decisions. Women, in their primary roles as water collectors, managers and users—as well as caregivers—are ideally situated to make these types of decisions, but heavy domestic burdens and community power dynamics often diminish women's ability in this regard. Over the last four years, the BESIK program has aimed to strengthen women's engagement in this decision-making process. And because lack of access to adequate WASH facilities for women and girls can significantly affect their health and education opportunities, the BESIK program also aims to raise awareness about the different sanitation and hygiene needs of women and men and to address these needs at the policy and community levels through environmental health interventions.

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[9] The Netherlands Development Organization (SNV)/IRC International Water and Sanitation Center

[10] Clarissa Brocklehurst and Jamie Bertram, *Swimming Upstream: Why Sanitation, Hygiene, and Water are So Important to Mothers and Their Daughters* (World Health Organizational Bulletin, 2010).

POLICY

The increased importance of MHM in Timor-Leste is reflected in the National Sanitation Policy and in the current PAKSI Resource Guide. As mandated within these policy guidelines, sanitation services now must consider the different sanitation needs and hygiene roles of men *and* women; they must also offer options in sanitation facility design that consider issues of cost, privacy, and accessibility not only for men, but for women and children in the household as well. That women's and girls' privacy and safety are also being addressed is apparent in the proposed implementation of sex-separate institutional and public toilets that include receptacles for the safe disposal of sanitary napkins (National Basic Sanitation Policy Timor-Leste, 2012; p.10) MHM, however, has not yet been addressed through WASH at the implementation level. This reluctance is not surprising considering male domination of the sector and community attitudes, aforementioned, towards menstruation as largely a taboo issue.

Within the National Sanitation Policy, the goal of "sanitation for all" will be met by accomplishing the following:

1. *A wide range of hygienic toilet and sanitation facility designs shall be promoted to households in a manner that allows them to consider the relative costs, benefits, privacy and accessibility of the various alternatives by all men, women, and children in the household.*
2. *Sanitation services shall reach all community members, and recognize the different sanitation needs and hygiene roles of men and women, with a focus on high-risk groups such as pregnant women, carers of infants, children under five years of age, people with functional disabilities, and other disadvantaged families.*
3. *Institutional and public toilets and other sanitation facilities shall be sex-segregated and accessible to disabled people, with all women's or girls' toilets designed for menstrual hygiene, including the safe storage and disposal of sanitary napkins.*

MENSTRUATION MANAGEMENT IN TIMOR-LESTE

To date, two exploratory activities on MHM have been conducted, one through BESIK and the other by WaterAid. The BESIK-supported study, *Women's Menstrual Hygiene and Access to Sanitation in Rural Communities and Schools* (conducted in 2011), was small in scope and included a sampling of three Focus Group Discussions (FGDs) with women and three FGDs with school children in the Kovalima district. Below is a summary of common MHM practices identified through this study:

- *The majority of women use sanitary pads (Softex brand); others use cloth; some do not use anything.*
- *Some women wash themselves with soap; others believe it is wise to wash only with water when menstruating.*
- *Many women wash their soiled cloths with water only, while others use soap or Rinso (a laundry detergent). The cloths are afterwards hung out to dry underneath garments, hidden so others cannot see.*
- *Most women throw sanitary pads outside, around the house, when people are not looking; others throw the pads down the toilet; some bury them.*
- *Many women are forbidden to eat certain foods/drinks during menstruation (e.g.,corn, chili, cold water).*
- *Many women are prohibited to cook, make sweets, pick fruit, and grow vegetables or fruit during their menses because of community-held beliefs toward menstruation blood as being " hot" (and thus capable of negatively affecting the activities carried out by the menstruating women).*

- *Most menstruating women do not wash their hair.*[11]

The second study by WaterAid (an international NGO in Timor-Leste) was based on a MHM workshop conducted in one school from the Lebutatlelo subdistrict in which three teachers and female students in grades 4, 5, and 6 were interviewed. This study revealed that there seem to be many similarly-held beliefs about menstruation, one of the most salient being the harmful effect of "white blood" (or discharge) during menses[12] and the need to ensure its proper release from the body.

Access to MHM products makes MHM management easier for women in Timor-Leste. One organization, Belikria,[13] fills this need by making washable cloths for the Timorese market. Belikria produces attractive menstruation pads (among other products) in a variety of models and sizes that range, depending on the type, from 3 to 10 USD. Distribution of these products is mainly carried out through the development programs of NGOs such as CARE and the Red Cross.

NEED FOR FURTHER RESEARCH

Given the lack of information on MHM in Timor-Leste, the BESIK project conducted an exploratory study to better understand what are the current menstrual hygiene practices among rural Timorese women, whether and how community beliefs and attitudes towards menstruation affect menstruation practices, and, ultimately, how women's menstruation influences the uptake and usage of sanitation and hygiene products in Timor-Leste. The hope is that the insights gained from this research will be used to do the following:

- Influence the design of sanitation programs such as PAKSI, by raising the issue of choice in toilet designs, including superstructure, and targeting activities for women and older girls.
- In the longer term, inform the development of concrete recommendations for integrating MHM within household sanitation programs and schools and potentially improve toilet designs for public places.
- Although context specific to Timor-Leste, add nonetheless to the existing global literature on product accessibility and barriers to MHM in developing countries.

[11] BESIK PROJECT, "Women's Menstrual Hygiene and Access to Sanitation in Rural Communities and Schools," (PowerPoint presentation for WASH Forum, June 24, 2011).
[12] Workshop Report, WaterAid, Timor-Leste, 2012.
[13] http://www.belekria.blogspot.com/p/our-products.html

III. STUDY DESIGN

A. ANALYTICAL FRAMEWORK

Figure 3: SaniFOAM Framework

The SaniFOAM[14] behavior change framework guided

the design of the research questions for this study. Developed in 2009, this framework was specifically designed to examine sanitation behaviours and has been used in a variety of contexts for a range of WASH behaviours (e.g., latrine uptake, faecal sludge management). The framework has four headings, explained below:

- **Focus** refers to the need to identify the desired behaviour and the target populations where this target behaviour is to be promoted.

The other three columns–Opportunity, Ability, and Motivation—each represent a category of behavioural determinants (factors that can help or hinder an individual in adopting a behaviour).

- **Opportunity** is a category of four factors that can affect an individual's *chance* to perform the target behaviour, including structural and institutional factors such as access to products and services, social norms, and fines or sanctions.
- **Ability** is a category of five factors related to an individual's skills and capacity to perform the target behaviour including their knowledge and skills.
- **Motivation** is a category of six factors that affect an individual's desire to perform the target behaviour including his/her beliefs and values and social, physical, or emotional drivers.

To carry out a behaviour, an individual must have the *chance*, the *capability*, and the *desire* to do it. Definitions of each determinant within the framework can be found in Annex 1 or at http://www.wsp.org/sites/wsp.org/files/publications/GSP_sanifoam.pdf.

[14] Devine, Jacqueline. *Introducing SaniFOAM: A Framework to Analyze Sanitation Behaviors to Design Effective Sanitation Programs*, Water and Sanitation Program, World Bank 2009.

B. RESEARCH QUESTIONS:

Given the knowledge about constraints to proper menstruation management globally and the existing knowledge of MHM in Timor-Leste, a few key determinants were chosen for development into research questions, presented below.

Table 1: Determinants and corresponding research questions

Determinant & definition	Research questions
Access: Ease of obtaining or accessing products (pads, toilet, and water).	1. What are the current practices of rural Timorese women around menstrual management? (Are homemade products used? How do accessibility, availability, cost, and uptake of commercially available sanitary products influence MHM practices? And have these practices changed over time?) 2. How does having access to a toilet affect women's management of their menses, if at all?
Social support: Emotional, physical, and informational comfort given to an individual by carrying out a specific behavior. **Roles and Decisions:** Function of person(s) within the household/community who makes decisions or can influence behavior.	3. How are women supported by members of their family during menstruation, and what type of support do they receive? 4. How are household roles and decisions about sanitation determined, and how do women's menses factor into household decision making around sanitation and hygiene options?
Attitudes and beliefs: Opinions of a product or behavior which may or may not be true.	5. What are the individual and community attitudes and beliefs related to menstruation and how, if at all, do they affect menstruating women and their management of their menses?

IV. METHODOLOGY

Given the sensitivity of the topic and the limited information on MHM in Timor-Leste, data was gathered stepwise, to allow findings to unfold and to refine data-collection methods.

To better understand how MHM is discussed between rural men and women, two Focus Group Discussions (FGDs) were conducted with midwives who—due to their positions as health workers and as women who are *or were* menstruating—provided the initial insights as to how to approach researching MHM [i.e., with whom (men, women, village leaders) and how (group interviews, one-to-one interviews)].

Based on information from FGDs with midwives, tools were further fine-tuned for interviewing the men and women. Data was collected, using these improved tools, in two of the three pilot PAKSI districts: Liquica and Bobonaro. Additionally, informal discussions were held with kiosk owners to help them understand consumer demand for commercial sanitary pads and the importance of product availability.

A. DATA COLLECTION METHODS

Given the topic's intimate nature and to minimize embarrassment, the team decided that individual or pair interviews would be the best method for eliciting information from participants. In instances where more women showed up than requested, up to three women were included in one interview. Comparisons of the data between single interviews, versus group interviews, revealed almost identical findings.

B. SAMPLING

Data was collected from September through October 2013 in the Liquica and Bobonaro districts. These districts were chosen because they are part of the national PAKSI program. Subdistricts were selected based on whether or not they had an existing WASH program. In Liquica, the selected communities are currently being assisted by WaterAid; in Bobonaro, by CVTL (Red Cross).

In total, thirty-one interviews were conducted with 62 household members. Of these, 45 were women and 17 were men. Of the 45 women interviewed, 36 were between the ages of 15-50 and 9 were menopausal. Four individual interviews were conducted with kiosk owners in Bobonaro, for a total of 66 participants. The sampling frame, which also includes interviews with midwives, is summarized below:

Table 2: Methods and sampling per district		
Data-collection	**Sample size per district**	**Total for 2**

method					districts
	Midwives	**Women**	**Men**	**Kiosk owners**	
Focus Group discussions	2				**2 FGDs**
Pair or individual interviews		45	17	4	**66 participants**

Table 3: Sampling per subdistrict/succo					
District	**Sub districts**	**Succo**	**# of interviews with HH**	**Total number of interviews**	**Total # of participants**
Liquica	Maubara, Liquica Vila	Lautekas, Laklolema, Palistala, Moris Foun	15	15	31
Bobonaro	Cailaco, Maliana	Lesupuh, Biateho, Rokon, Genhua-an	16	20 (16 HH + 4 kiosk owners)	35
Total			**31**	**35**	**66**

C. TRAINING, DATA COLLECTION, AND ANALYSIS

Data was collected between September and October 2013 by a team composed of BESIK and WaterAid staff, aided by an international consultant. The international consultant led a two-day training on how to conduct qualitative interviews using the MHM collection tools as examples. To test the protocol, the team initiated the data-collection process in the Liquica district following the sampling framework above. Data collection for that first district took one-and-a-half days to complete, and was followed by a reflection meeting whereby the team discussed lessons learned and reviewed findings from the interviews. After data collection had been completed in Liquica, the team reconvened in Dili to map the results of the discussions for inclusion into a data analysis plan. This entire protocol was repeated for Bobonaro. All interviews and group discussions were recorded, transcribed, and then translated into English.

Following translation, the data analysis then proceeded with tabulations for toilet ownership, use of pads versus *henna*, locations for changing, disposal methods, etc. Interviews were then coded by themes based on factors affecting MHM: e.g., access to pads, access to toilets, social support of husband or mother (or other relatives/friends), attitudes and beliefs about menses, and physical and social restrictions during menses.

D. STUDY LIMITATIONS

Due to the novelty of this research topic in Timor-Leste, which necessitated developing and testing new tools, the team was faced with a few constraints which unavoidably affected the data collection. Detailed data on toilets types, for instance, was unfortunately only obtained for *Bobonaro,* done so only after a review of the data collected from Liquica. In Liquica, women were only asked if they owned toilets *in general*, but were not asked to provide details about the type. And because participants were asked to come to a central location, interviews did not take place in the home, thus, data on toilet type and ownership are limited to self-reporting and not confirmed by observations.

V. FINDINGS

The findings below are presented categorically following the SaniFOAM behaviour change framework, starting with Opportunity determinants (and their impact on changing, washing, and disposal practices), followed by the Ability determinants, and concluding with the Motivation determinants (and their impact on uptake of latrines, menstruation management, and women's participation and mobility during menses).

Note: The italics below are direct quotes excerpted from the interviews. Quotes from single-participant interviews are followed by parenthesis indicating the participant's gender, age, and location. Quotes from group interviews are preceded by an **F** (for female) or **M** (for male) and a number to indicate the participant's identity based on the order of his/her response within a group interview.

A. OPPORTUNITY DETERMINANTS AND MHM PRACTICES

1. *AFFORDABILITY, AVAILABILITY, AND PRODUCT ATTRIBUTES/PREFERENCES*

For women to adequately manage their menses, they need, ideally, to be able to access menstrual pads or other products that can contain blood. They also need some place private—with access to water for changing and cleaning—as well as somewhere to safely dispose of used products. Women also require a solid waste management system to safely dispose of rubbish collected from households. In some countries, women must manage without any of these conditions. Unfortunately, there is no current system in place in Timor-Leste for solid waste management: most households simply dig a pit and throw their rubbish in there; once filled, the pit is usually then burned.

According to the study, Timorese women were able to access and regularly use either homemade or store-bought pads, or both. No one cited using tampons or menstrual cups. Only a few menopausal women reported not using anything, having opted in the past for frequent changing of their sarongs or *Tais* (traditional skirts). As detailed below, while cost and availability did not appear to be major barriers for most women, a few did feel the cost of disposable pads to be a "bit expensive." Other women reported that kiosks were often sold out of their disposable pads, a claim consequently confirmed by the four kiosk owners, all of whom admitted that selling out was "common" for them.

STORE-BOUGHT PADS: The majority of women reported using either store-bought pads or homemade pads, or a combination of both. The most commonly type of store-bought pad cited was the Softex brand, with fewer women having cited the Laurier brand. A pack of eight pads costs, on average, between 0.50 USD to 0.75 USD. One woman reported buying 12 packs (96 pads total) for 8 USD, reducing her cost per pack to 0.67 USD. However, in remote communities, some women reported the cost to be as high as 1 USD for a pack of 8. Women

tend to buy 1 pack per month, a number verified by kiosk owners. Store-bought pads are preferred mainly to prevent staining and increase mobility during menses as they can be attached to underpants. Some women, who can afford to do so, use pads exclusively to avoid having to wash homemade pads.

> *I purchased in the market. Softex is good, because our blood cannot leak and stain the clothes. Normally I used Laurier and Softex. (Female, 19, Liquica)*

> *We use those products [disposable pads] so that if we sit down and do work, our children can't see it. If not some of our children are naughty and if they see the stained and say, "Mother what is this?" And if they talk to their friends, we are the ones that feel ashamed. That is why we used these products so [we] cannot be seen by other people. I just use one product, the store-bought ones because it is thick and we can use until the afternoon and then change because we feel that it's still dry. (Female, 33, Liquica)*

As mentioned, while the majority of women reported being able to afford the disposable pads, some felt the cost to be "a bit expensive." As such, some use disposable pads only for going out, opting for homemade pads when at home.

> *…about the price I feel is hard because when having menstruation I should ask my Mum to buy Softex. (Female, 22, Liquica)*

> *For me both pad and rag are good as they do not stain, but pad is too expensive, hence, I use only rag when I am at home. (Female, 45, Bobonaro)*

Despite their wide usage, store-bought pads were believed, due to their absorbent nature, to cause greater blood flow, or in the women's own words, "[to] suck our blood." This notion was especially prevalent among the older women.

> *…when I was still in school my friends said to me to use Softex but my teacher told me that Softex has lots of side effects to us, so better just use towel or rags and when finished using it wash and stored in safe place. (Female, 45, Bobonaro)*

> *Some say using Softex is bad because it draws out our blood, old people say this. (Female, 23, Liquica)*

HOMEMADE PADS: Another type of pad commonly used is *henna,* a homemade product made by folding or sewing together several layers of old sarong cloth to serve as a pad. As reported, older women were more likely to use *henna* exclusively and younger women were more likely to use store-bought pads exclusively. *Henna* is readily available at home, is considered more natural, and is not perceived to increase blood flow.

> *The towel we received from World Vision and Alola Foundation. Normally I use small towel and I didn't get sick. When we use we fold it in two ways measured them to fit the underpants and then used sewing thread and sewed it twice each side and ends. Then when you use it, you can move wherever. (Female, 45, Bobonaro)*

To be reused, *henna* must be washed, which may pose a challenge for those households facing water shortages. Washing *henna* also increases a woman's workload during her menses. Washing, which is done with cold water, is an activity many women try to avoid while mensing (see section on *Beliefs*). One woman opted to throw away her *henna* rather than wash it. Table 4 summarizes the perceived advantages and disadvantages of both store-bought and homemade products.

The [positive] factor is that towel [homemade pad] didn't suck our blood and Softex is easy to change if there is no water. (Female, 23, Liquica)

Table 4: Benefits of store-bought (disposable) vs. homemade pad (*henna*)		
	disposable pad	***henna***
Benefits (+)	+ Does not shift or move + Prevents staining + Allows for greater mobility + Does not require water for changing + Does not require washing	+ Is free + Is felt to be more natural and does not encourage greater blood flow + Can be reused
Disadvantages (-)	- Is not reusable and requires a place for disposal - Makes menses heavier: "sucks our blood" - Is not always available - Costs money	- Shifts as it cannot be clipped onto underpants - Has greater chance of staining - Is less absorbent and wet against the skin - Is rough , creates rash, and/or scratches on skin - Requires washing

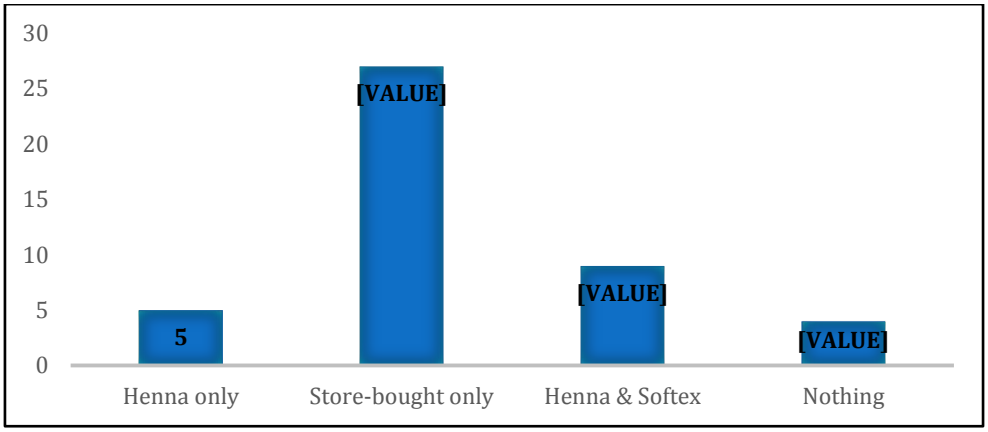
Menopausal women were asked to recall what they used when they were still experiencing their menses. Most reported using nothing and changing their clothes only as needed. One female in the study opted to use woven *Tais*, which is thicker and more absorbent, in lieu of the thinner cotton sarong.

In the past, I just used underpants, but changed all the time. I dried the underpants in the shade in the toilet. Presently they [her children] use Softex. The old women usually use towels and the young women use Softex. (Female, 47, Bobonaro)

When I got my menses I used nothing. I only put on the Tais, not using underpants or towel–only wrap around with Tais. When I am not on menses then I used sarong because in our times there was no Softex. There were only Tais and sarongs available. (Female, 64, Bobonaro)

Despite some women having expressed concern about using store-bought pads, tabulations show that the majority of women interviewed not only use store-bought products, but do so *exclusively*, while a significantly smaller number use a mix of store-bought *and* homemade products (**Figure 4**). It is important to note that while 1 USD may seem high in absolute terms to some, for most women and girls, the *perceived benefits* of being able to leave the home, attend school, and avoid stains for the entire duration of their menses (about three days) far outweigh the *actual cost* of disposable pads.

Figure 4: Product Preferences



2. *ACCESS TO TOILETS*

Toilet ownership: The findings show that the majority of households interviewed owned toilets (**Figure 4**) and that the women from those households were able to access to them for MHM. Of the total of 45 women interviewed, 32 households (16 in Liquica and 16 in Bobonaro), or 70%, had toilets. This access rate is significantly higher than the Timorese national average, which is roughly 28% for rural areas.[16] As explained in the sampling section, certain subdistricts within Liquica and Bobonaro were selected because of existing WASH interventions, a pre-condition ensuring there would be a sufficient number of households with toilets from which to determine how toilet ownership affects MHM: this selection criterion explains the relatively high access rate to toilets within these subdistricts.

Toilet sub and superstructures: Detailed data on toilet types was only obtained in Bobonaro after the data was already collected in Liquica and was limited to self-report. It was not possible to conduct observations of toilets because interviews occurred in a central location rather than the participants' homes. Of the 16 households that owned toilets in Bobonaro, 13 owned pour flush with cement bowls (**Figure 5**). Of the 16 toilets in Bobonaro, 12 toilets had walls constructed of cement and 4 were made of local materials including bebak (palm trunk), feather reed grass, palm leaves, and bamboo and coconut leaves (**Figure 6**).

Figure 6: Toilet Types

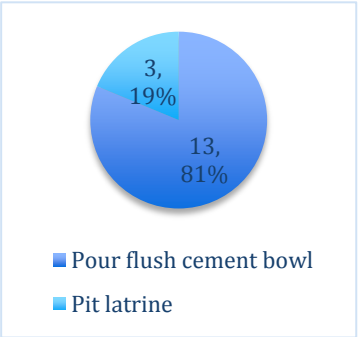
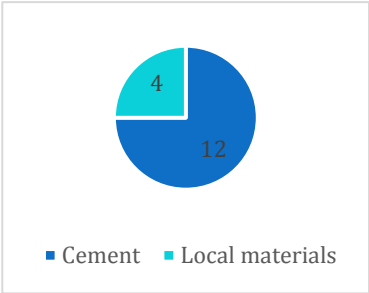


Figure 5: Superstructure



3. *TOILET USE AND IMPACT ON*

[16] http://www.unicef.org/infobycountry/ Timorlestestatistics.html

MHM

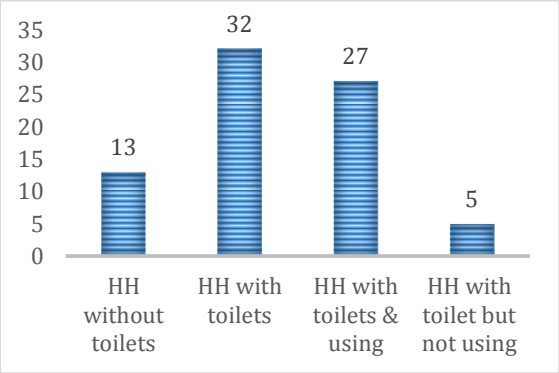
In **Figure 7**, of the 32 women with toilets, 27 women, or roughly 85%, currently use their toilets for defecation, urination, and MHM. The remaining five women owned toilets but did not use them due to insufficient water. No one reported using a toilet for defecation and urination but not for MHM. Thus, women with toilets in this study will use them for changing, washing, and pad disposal if those toilets are functioning. Despite having cement bowls, women in Timor-Leste are using their toilets for MHM, unlike women in other countries who, for fear of staining the cement, tend *not to use* their toilets for MHM. No one reported this to be an issue for this study.

Women reported that having toilets made bathing, defecating, and managing menses easier. When asked how having a toilet changed the way they manage their menses, women provided these responses:

Because there is a toilet and water is nearby, I feel happy because we use everything with water. In the past without a toilet it was difficult because it was only open defecation. (Female, 27, Liquica)

When we have the toilet, I feel good. If no toilet then I just changed in the river and I don't feel good because of the throwing rubbish everywhere. (Female, 25, Bobonaro)

Figure 7: Toilet ownership and use



F1: *It is very easy when we have a toilet as it is very fast to control it [menses]. However if there is no toilet then we need to change in the bedroom, but we do not feel comfortable as there is not water inside the bedroom.*

F2: *Same for me…before we used to take our bath at our kitchen. (Females, 29, 20, Bobonaro)*

4. CHANGING, DISPOSAL, WASHING AND DRYING PRACTICES

After describing what products they used, women were then asked about how they manage their menses to better understand the following: how they ensure privacy while changing pads; how they dispose of them; how they secure enough water for cleaning their products and bodies; and where they dry and store *henna*.

CHANGING: Women reported changing pads between two to four times per day, irrespective of the product used. Only a few claimed that they had to change more frequently when using *henna*.

F1: *I change three times a day.*

F2: *I change the pad twice a day and for rags I change it four times a day. (Females, 37, 45, Bobonaro)*

Locations for changing pads varied among the bedroom, bathroom, bush, or river. The key factors influencing women's choice of location were the need for **privacy and access to water.** If either water was unavailable (most likely for pour flush latrines) or the superstructure was inadequate (more likely for pit latrines), then women were less inclined to use them.

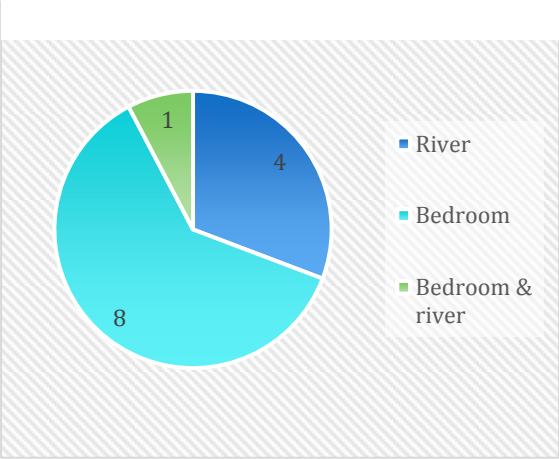
F1: *We have a toilet but it has only a wall with bamboo. I am worried if people can see and also smell [it]. [I] didn't use it for changing because there is no water… (Female, 41, Liquica)*

F2: *[We] already have the toilet but still we are not using it because no water so we still use the old one because in the new toilet, there is no water. (Female, 33, Liquica)*

Encouragingly, women who owned pit latrines with superstructures providing adequate privacy reported changing and disposing of their pads in the pit.

Figure 8 illustrates that women without toilets will most likely change in the bedroom, despite the absence of water, because this room affords privacy.

Figure 8: Where women without toilets change



I wash in the toilet because as a mother I should wash in a hidden place not visible to the children and also by other people. We need to save face. (Female, 45, Bobonaro)

DISPOSAL: Women interviewed cited a variety of disposal practices, the most unhygienic practice being the throwing of pads out into the open.

F1: *Many women simply throw them and the pads are sometimes taken or eaten by the dogs, I do not know where they change.*

F2: *They might change at their bathroom, we do not know and we will come to know when we see them throwing the pad as it is then taken and carried by the dogs. (Females, 37, 45, Bobonaro)*

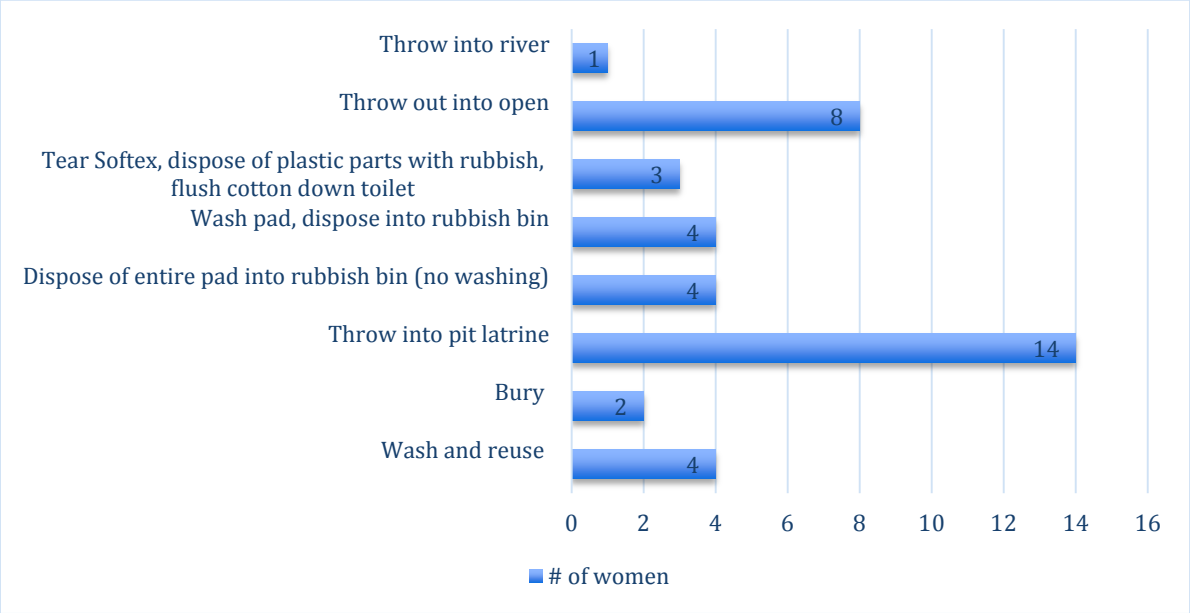
While the practice of throwing pads into the open was not uncommon, most women reported knowing it was unhygienic and feeling embarrassed at seeing or smelling soiled pads that had been tossed out into the open.

[I] Throw in the bushes, river [flush through river] because no water in the toilet. [I] do not feel good, we smell it [pad] and it stinks because [we] throw in the open area. (Female, 32, Liquica)

Sometimes people throw them in the open and when I see it I feel embarrassed because throwing it out in the open like that is not very good for health, and also it's shameful for women. (Female, 27, Liquica)

Figure 9 lists the locations where women reported disposing of their pads. Women who did not have toilets were more likely to throw their pads into the open, into rivers, or behind bushes.

Figure 9: Locations for disposing of pads/*henna*



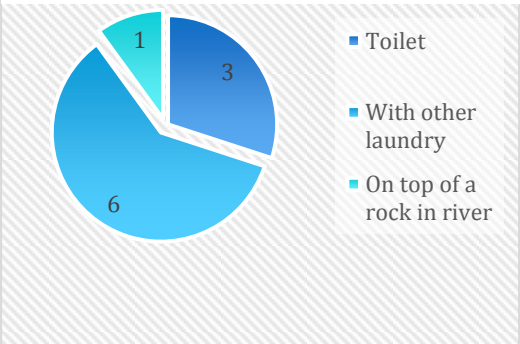
In the absence of a solid waste management system in rural areas, most households will dig a pit in the ground, throw rubbish in it—and when full—burn its contents. Only four women reported throwing their pads into a rubbish bin and burning them. One participant in Bobonaro reported owning a pour flush toilet but, having no available rubbish bin, threw her pads out into the open. This tendency to throw pads out into the open underscores the need to promote rubbish bins as part of the pour flush latrine design to enable proper disposal of pads.

> *I changed in the bathroom [bathroom with toilet]. I choose to change in the toilet because it is good and not visible to the children… In this community they [other women] change in the bathroom but when they are finished changing, they throw it [pads] everywhere and dogs can drag/pull it everywhere. (Female, 25, Bobonaro)*

WASHING, DRYING, AND STORING *HENNA*

Most women washed their *henna* pads with other laundry items, but would afterwards dry them underneath other clothing—in the shade or in the toilet—to avoid the shame of having others see their stained pads. One woman stored her *henna* separately from other household cloths to ensure that her children would not mistake them for washcloths.

Figure 10: Locations for drying *henna*



> *After washing [henna] [I] dried inside the house and hide underneath other clothes. If it's shameful if other people see it. I store in drawer and reuse it during the next month's menses. (Female, 5, Liquica)*

not, the

In the past, I just used underpants and changed all the time. I dried the underpants in the shade in the toilet. (Female, 47, Bobonaro)

Drying *henna* in the shade of the toilet or under other wet clothing does not always provide sufficient light to sanitize the fabric, which can increase women's risk for contracting yeast or urinary tract infections.

B. ABILITY DETERMINANTS

In addition to understanding MHM practices, it is also important to understand the context within which these practices occur, particularly whether or not women are supported during their menses. If supported, by whom is the support given and what is the type: is it physical, informational, or emotional? The interviews revealed that husbands, mothers, children, other female members—and, to a lesser extent, friends—often offer assistance to women during their menses. Furthermore, the study also sought to understand household decision making regarding toilets. Although this information had been covered in other studies, the findings here further validate other previous studies looking at demand for toilet. [17]

1. PHYSICAL SUPPORT

Women were asked to describe any changes experienced as a result of their menses. Physical symptoms such as sleepiness, fatigue, and achiness were mentioned by all the women; only a few mentioned changes in mood or "grumpiness." Timor-Leste has very high national rates of anemia among women of reproductive age. The Demographic and Health Survey conducted in 2009 estimated that 21% of women age 15-49 are anemic and 28% of pregnant women are anemic.[18] The loss of iron from menses may partially explain why almost all of the women reported feeling dizzy or faint. Men and women reported having to frequently administer warm water with sugar and ginger (a traditional remedy) to menstruating women, or—in more extreme cases—to take them to see a medical practitioner (traditional or western-trained) to help them cope with their menses.

As a warm-up exercise, women were asked to describe their daily routines from the time they get up to the time they go to sleep. The description below represents a typical day for women in these areas:

I wake up in the morning, put the fire on and boil water, sweep the floor, prepare breakfast for the children to go to school, feed pigs and chickens, prepare vegetables and cook lunch for the children for when they come home from school and for my husband when he comes from work to eat and wash their clothes. In the afternoon, [I] collect water, collect firewood, look for pigs' food. When I get back home, then cook dinner and serve the food on the table, tell the children to study and at 8 pm we have dinner. (Female, 32, Liquica)

When asked, "When you have your menses each month, would that change the activities you've just described, and how?"—many women replied that they would reduce the amount of "heavy work" (e.g., washing, cleaning, and carrying water). Others mentioned sleeping more or taking more frequent breaks. Encouragingly, a significant number of women reported having family members who provide them with support—with *physical* support being the most common type. Physical support was provided by husbands,

[17] INSIGHT Timor-Leste, Sanitation in Rural Timor-Leste-A Study of Supply and Demand, BESIK project, 2011.

[18] National Statistics Directorate (NSD) [Timor-Leste], Ministry of Finance [Timor-Leste], and ICF Macro, 2010. Timor—Leste] and ICF Macro, p. 171.

children, or other female family members. Informational and emotional support tended to be provided by mothers, and emotional support by husbands and friends.

HUSBANDS: Despite being a taboo topic to discuss in public, menstruation seems to be a topic open to discussion between husbands and wives in private. Almost every woman, except a few menopausal women, mentioned their husbands knowing about their menses each month. Men and women spoke of husbands carrying water, washing clothes, and helping out with chores—with some men even taking over the cooking. When asked, "In thinking about the present, whom do you normally speak to about your menses now?"—the women gave the following answers:

> *I told my husband and my younger sisters…I always told my husband every month…I told him because when the things come [menses], they make me have headache and lower abdomen pain so I should tell him….he advised that if I feel tired, then just sit down and have a rest. (Female, 32, Bobonaro)(4).*
>
> *...in my family, my husband is the one able to help me because we live alone. If we get this sickness [menses] he is the one who helps me with washing clothes because during this time we cannot contact with cold water and do lots of laundry. (Female, 33, Liquica)*
>
> ***F1:** When it comes at the first day, I told my husband.*
>
> ***F3:** During my period, I always told my husband.*
>
> ***F2:** When I have menstruation every month, I always told my husband. (Females, 34, 45, 29, Bobonaro)*
>
> ***M1:** We are husband and wife. My wife always informs me when her period starts. From what I heard, the period normally starts first with cramps in her back and belly.*
>
> ***M2:** She always complains about pain around her abdomen area. Sometimes her period is white. She has to go see a doctor otherwise, we shall find some traditional medication and ask her to rest well.*
>
> ***M3:** She normally feels soreness around her legs and arms when her period starts. I thought it was a sickness and would advise her to go to the doctor. (Males, 56, 42, 35, Bobonaro)*

CHILDREN: Children were also frequently named as a source of physical support for their mothers during their menses. Due to beliefs about women's physical fragility and the need to stay away from cold water (see section below on *Beliefs*), the likelihood of men or children helping out with fetching water or washing is certainly plausible.

> *I can have a shower first, then do the chores. If I got heavy bleeding, then my children help me do the work. If not, I do it by myself. (Female, 34, Bobonaro)*
>
> *My husband is the one helped [me]. If they [daughters/sons] are not at home then my husband did all the work because they were away. (Female, 46 Liquica)*
>
> ***M1:** This [menses] can affect the family activities. So we need to help each other because the mother is sick then the children will help.*

M2: *It [menses] does affect us. Our children we can ask them [to do the chores] and also [the father] could help because the mother [wife] is sick. (Males, 48, 58 Liquica)*

OTHER FEMALE FAMILY MEMBERS: When women were asked, "When you have your menses, are there people in your family that help you with your daily tasks?"—extended family members—sisters, sister-in-laws, and aunts—were named as providers of physical support, helping out with chores and manual tasks.

My younger sisters helps me with the tasks in the household. (Female, 32, Bobonaro)

F2: *Only my younger sister and older sisters do the cooking... then they also collect water and firewood.*

F3: *When I am sick [mensing] my young sister did all the cooking and my husband collected firewood and water. (Females, 57, 55, Liquica)*

F1*: My niece is the one helping wash clothes, cook and do other things. If I don't feel tired, I will be the one doing the work.*

F2: *My sister helps me. (Females, 28, 27, Liquica)*

2. INFORMATIONAL AND EMOTIONAL SUPPORT

MOTHERS: As in other countries, mothers in Timor-Leste play a particularly important role in helping their daughters learn about—and manage—menstruation. Mothers were the most frequently cited source of informational and emotional support for young girls. Mothers are likely the ones to explain menses to their daughters (e.g., that it would last about three to four days, that they could expect to feel aches and pains during that time). Mothers tended also to be the ones who provide their daughters with suggestions on how to deal with their ailments (e.g., drinking warm liquids with sugar, ginger, or other herbs) and who offer specific instructions on how to keep clean (e.g., wash body, but not hair). Mothers are also most often these girls' primary provider of pads.

Some mothers considered menses to be a natural part of growing up and as such, did not place any restrictions on their daughters. The majority of mothers, however, *did place* restrictions—often many. Many mothers (as indicated in the third interview below) prohibited their daughters from cooking, farming, or being outside during their menses, reasons for which will be discussed in a later section, *Beliefs and Attitudes*.

My mother is the one who informed me that when we are growing into a mature girl, then it [menses] will occur and we feel sick around our waist. Hence, it indicates that we are a woman and will get menstruation so do not get upset. It is a period, not a disease. (Females, 37, 45, Bobonaro)

F1: *I can do everything depending on my will during menstruation.*

F2: *I can also do the same [as F1].*

F3: *I can do everything except entering the gardens and paddy fields as it may give a negative impact to the existence/life of the vegetables and paddy growth. (Females, 29, 20, 25, Bobonaro)*

F1*: about this, when the first time [I] didn't know, I thought I was going to die. I asked my mother why all of my clothing was red. Then my mother told me "you are old enough and this is now your time." In the past there were no Softex, we just used two to three pairs of underwear. Just now we use Softex*

because people sell it. And my mother said that "don't have shower and wash your hair."

***F2**: For instance, [my mother] explained "don't go out, because when having menses, you should just stay inside the house." (Females 41, 24, 19, Liquica)*

SISTERS: Elder sisters were also identified as sources of information, particularly if the mother happened to be very old or had passed away. Like mothers, sisters are also responsible for embedding or reinforcing beliefs regarding physical restrictions and shame of menses.

***F1:** Before the first time I got my period, my mother was already very old so I only told my sister about it…*

***Facilitator:** How did she describe the menses – what words did she use?*

***F1:** My sister only explained to me that if we got the menstruation, it's a shameful thing so we should hide it. She advised, "Do not stay in the sun. When washing, do not use hot water." If not it will make us feel sick and white blood discharge goes up the head. "Do not wash hair, just cleanse the body." (Female, 47, Bobonaro)*

Older sisters, not mother, explained to me. "It comes for about 4 or 5 days, just like that for about four days it can't go on for a month, because like that it can make us sick." I heard it from my older sisters, not from friends. (Female, 27, Liquica)

FRIENDS: Women listed friends, after their mothers or sisters, as additional sources of information. Friends, however, were most frequently mentioned in the context of being helpful facilitators in potentially embarrassing social situations. If a woman is out in public and experiences staining, friends may inform the woman about her stains and provide bags for her soiled clothes; or, if a girl starts her menses while at school or at a public gathering, friends may act as messengers on her behalf, relaying to the teacher or community leader her necessity for leaving. And like mothers and sisters, friends also tend to reinforce beliefs about impurity and shame and the avoidance of stains.

If [they are] good friends, then they will tell each other slowly. If a friend has a bag, she will give the bag to hide the stains. (Female, 29, Bobonaro)

They [friends] helped me and explained to me that our menses come monthly (Female, 46, Liquica)

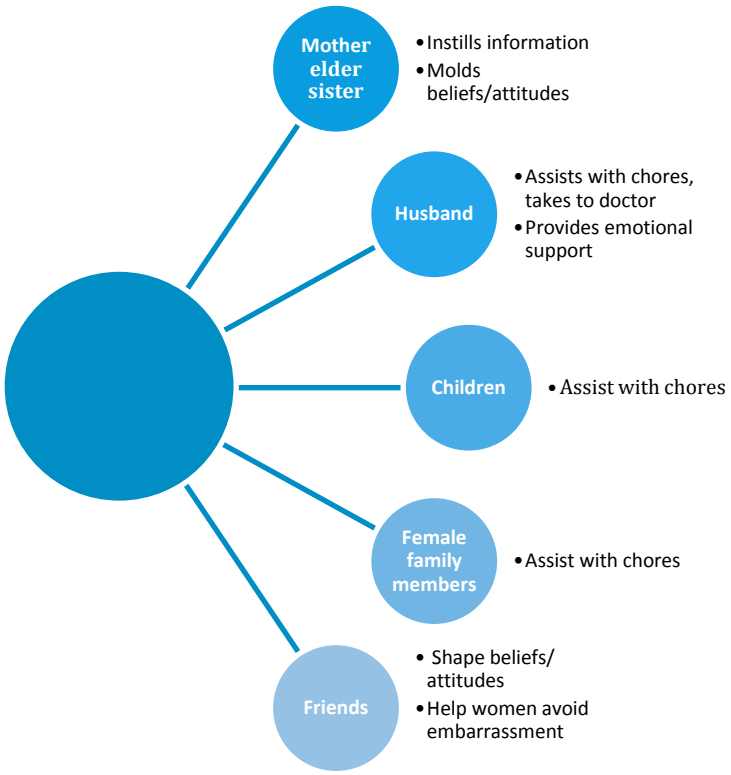
Friends showed me the way that "when we get our period, we should dress properly. If lots of male friends see, then it's shameful for us because this is a woman's secret." (Female, 28, Liquica)

FATHER: Most women reported being too "embarrassed" to speak with their fathers about their menses. Having described many of them as "strict," some women were simply too afraid to broach the subject with their fathers. In cases where fathers were mentioned, the type of support given by fathers to daughters concerning menstruation was in the form of practical advice on how to care for themselves. Such advice reveals that men share many of the same beliefs about menstruation as women, beliefs which may have been learned from their wives.

My father said that as a woman, we need to take care of ourselves as my father knows that my mother also needs to drink hot water mixed with sugar so that it would cleanse our stomach. (Female, 45, Bobonaro)

Figure 11 illustrates the various sources of support that are available to women during their menses.

Figure 11: Women's support network during menstruation



3. DECISION MAKING FOR TOILETS

Seventeen men, excluding the four male kiosk owners, were interviewed about their wives' menses and the decision-making process in their household for purchasing a toilet. When asked who makes the decisions regarding big-ticket purchases like a TV or mobile phone, some men reported husband and wife being jointly responsible for making these decisions.

> *We as the persons in charge in the family need to consult with our wives to arrange things which are lacking. (Male, 35, Bobonaro).*

Most men and women reported joint decision making for both daily expenses and higher- priced purchases. In some households, women reported making decisions on their own for daily expenses but, together, with their husbands, on larger-ticket items such as a toilet. Men, however, tended to report only sole decision making in such cases. These findings are consistent with findings from a previous study conducted in 2011 in which 53% of respondents named the adult male in the household as the one who normally makes the final decision in

such instances, with only 26% naming both the adult male and adult female in the household as jointly responsible for making these decisions.[19]

> ***M1****: The construction of toilet was decided by my wife and me.*
>
> ***M2:*** *I have a traditional latrine which its construction was decided by me…There was no other people involved in the construction of latrine. I made myself.*
>
> ***M3:*** *I decided on the construction of the toilet. I planned my latrine without involving other people. (Males, 26, 64, 80, Bobonaro)*
>
> *"My husband and I decided to participate in the program and through this program [CVTL], we built a toilet."(Female, 34, Bobonaro)*
>
> *In my family, only the head of the family makes the decision. I am more interested than her. My wife does the shopping. (Male, 26, Bobonaro)*

4. MOTIVATIONS FOR OWNING TOILETS

Although not a key research question, households owning toilets were asked why they invested in a latrine. Both women and men cited a desire to stop defecating in the open as a key reason; knowledge of the health benefits of using toilets was also mentioned by some participants as a reason for wanting a toilet.

> *Me and my husband decided it [to build a toilet]…because if there is no water in the toilet, we defecate randomly, then we never stop getting sick. We should throw the rubbish in one place in order to prevent us from getting sick and also to eliminate flies so they don't contaminate the foods. (Female, 60, Liquica)*
>
> *My husband and children decided [to build it]. The reason we build the toilet is because if we defecate in random places, chickens and pigs carry it inside the house and will contaminate the food and cause too many flies. (Female, 47, Bobonaro)*
>
> *We have a toilet since Indonesian times so a toilet is important for our lives. If no toilet and we defecate in random places, then we will get various disease through mosquitos and flies. (Male, 55, Liquica)*

In one group interview, women cited different reasons for wanting to own a toilet, including a desire to stop defecating in the open and to avoid the embarrassment of not having a toilet for house guests to use.

> ***F1:*** *The reason why we built the toilet is because we do not want to practice open defecation.*
>
> ***F2:*** *The reason is that when a friend visits my home and ask for the toilet if there is no toilet then I feel embarrassed therefore we decided to build the toilet.*
>
> ***F3:*** *As sometimes some people come and ask for the toilet, if there is no toilet then we feel embarrassed; therefore, we need to build the toilet. (Females, 29, 20, 25, Bobonaro)*

[19] INSIGHT Timor-Leste, *Sanitation in Rural Timor-Leste—A Study of Supply and Demand*, BESIK project, 2011, p.14

One man built a pit latrine so that he could put other trash in it.

> *We are the ones who would like to build a toilet because rubbish can be put together in one place. (Male, 55, Liquica)*

This practice, however, is inadvisable as the added trash not only fills up the pit latrine faster, but also increases the smell, thus attracting flies and other insects capable of spreading disease and bacteria.

C. MOTIVATION DETERMINANTS

The literature on MHM uncovered a wealth of insights about beliefs related to menstrual blood from around the world. While some cultures hold positive beliefs about the power of menstrual blood–as in the case of Aboriginal Australia **(Figure 12)**, the majority of cultures believe that menstrual blood is "dirty" and "polluted." These beliefs and attitudes carry shame and stigma for menstruating women, and in many instances, lead to the exclusion of women from family and community activities, including schooling. In Nepal, menstruating women are prevented from cooking the family meal and although it is illegal by law, some communities in Nepal still force women to spend their menses in unprotected huts away from their homes and families. In many Muslim countries, menstruating women are forbidden to enter a mosque.[20] Taboos regarding menstruation are not exclusive to Islam, however. An analysis of the major religions of the world reveals most religious doctrines, with the exception of Buddhism, include prescriptions for what women and men can and cannot not do while women are menstruating.[21]

Interviews with men and women in this study also yielded rich insights about the beliefs related to menstrual blood. As in other countries, similar ideas of purity, contamination, and shame associated with menstrual blood seem also to exist in Timor-Leste.

1. *WHITE BLOOD*

It is physiologically normal for women of reproductive age to experience discharge during specific times of their monthly cycle. White-coloured discharge is a sign that menstruation is about to occur, with the quantity and thickness increasing closer to the period date, even becoming a brownish colour when the period is imminent.[22]

Figure 12: Beliefs about menstruation from around the world

Tanzania: Some believe that if a menstrual cloth is seen by others, the owner of the cloth will be cursed.

Bangladesh: Women bury their cloths to prevent their malevolent use by evil spirits.

Sierra Leone: Soiled sanitary napkins can be used to make someone sterile.

Surinam: A woman can use her menstrual blood to impose her will on a man.

Aboriginal female healers: Menstrual blood possesses healing powers; wounds and bruises treated with cloths soaked in menstrual blood help wounds heal more quickly and prevent scarring.

[20] House, Sarah, Therese Mahon, and Sue Cavill, *Menstrual Hygiene Matters: A Resource for Menstrual Hygiene Management around the World*, p.2 (WaterAid, 2012).
[21] Sumpter, Colin and Belen Torondel. "A Systematic Review of the Health and Social Effects of Menstrual Hygiene Management," Plos One (2013); 8(4): e62004, published online April 2013, doi: 10.1371/journal.pone.0062004. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3637379/

Participants in this study commonly referred to this monthly occurrence as "white blood" or "white blood discharge." Women in this study and within the WaterAid consultation voiced concerns about the dangers of "white blood"—in particular, about the possibility of it travelling up the body and reaching the head, causing a woman to "go crazy." Every woman interviewed expressed the need to ensure the downward travel and proper release of "white blood" from the body. That this notion is so pervasive indicates there is a considerable gap in knowledge among Timorese women about the biological process of menstruation.

> *When it first happened to me, my mother said that I should not wash my hair and I should only use warm water for bathing. I was informed not to use a pillow below my head while sleeping, otherwise, I will suffer a kind of disease called white blood that flows to my head… (Female, 45, Bobonaro)*

> ***F3:*** *I didn't know and my mother explained to me, "When you have menses just sleep, don't play with cold water, and don't wash clothes. If not, [you] will get sick and white blood goes into the head and gives you a headache. (Females, 41, 24, Liquica)*

Men also mentioned "white blood." When women were asked, "What advice does he—your husband—give to you during your menses?" One woman answered that her husband advised against sexual intercourse during menses for fear of "white blood" travelling to the head.

> *During menstruation, do not have sexual activity or [I] am scared for us that you may get sick, may get vaginal discharge; white blood discharge goes up to the head so should have awareness to learn more. (Female, 29, Bobonaro)*

2. CONTROLLING BLOOD FLOW

Once their menses begin, women want blood to be released steadily—neither too quickly, nor too slowly. To avoid the heavy disbursement of blood (hot temperatures because the blood "melts) or its lack of disbursement (cold temperatures because the blood "congeals"), women in this study practice a number of restrictions **(Figure 12)**:

- Avoiding heavy work, such as carrying water or looking for firewood as heavy work could increase blood flow;
- Not drinking coffee and not eating chili or papaya leaves as they are believed to be "hot" foods and would increase blood flow;
- Reducing exposure to extreme temperatures (e.g., avoiding the sun, avoiding contact with cold water, or abstaining from drinking ice water);
- Avoiding cold baths and abstaining from washing hair, so as to prevent the onset of headaches and dizziness.

The above beliefs and the resulting restrictions are so pervasive that they have become socially normal behaviors. Social norms are rules or patterns that govern the way individuals and communities behave. Once an idea or behavior becomes a norm, individuals often feel pressure to comply with the norm, irrespective of how they feel about it on an individual level. For example, a mother may personally feel that placing restrictions on her daughter may not be necessary, however, since everyone in her community practices these restrictions, she may feel she needs to comply with what everyone else is doing and adhere to those restrictions.

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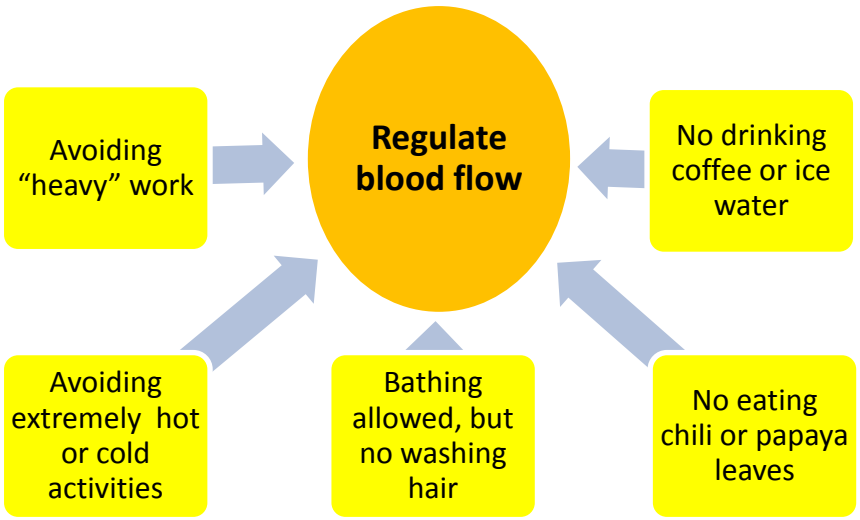
[22] http://dischargebeforeperiod.org/pre-period-symptoms

While the above beliefs were mentioned by the majority of participants, there was also the idea, to a much lesser extent, that if blood was released too slowly, it might clot within the body. Menstrual blood clots, or "ball[s] of blood," are believed by some to be symptomatic of blood not being released properly, which, when left in the body, could also result in illness.

> *Speaking about the ball of blood, it only happens to married women after giving birth and the blood does not come out properly, then we can call it the ball of blood. But if young women, there is no ball of blood but if menstruation blood does not wash out properly, then [we)]will feel clots of blood which make us sick all the time. (Female, 34, Bobonaro)*

This notion of the ball of blood however, was only occasionally referred to within the interviews and appears to be less common than many of the other notions as summarised in **Figure 13**.

Figure 132: Activities to control release of menses



3. MENSTRUATION IS A DISEASE OR A SPELL

Words such as "disease," "spell," and "sickness" were commonly used by the men when describing their wives' physical state during their menses. Men felt that while menstruating, their wives were physically weaker due to the women's bodies being under a spell, or "horok." Some women and men used the word "moras," or illness, to describe menstruation, a condition that could require medical treatment.

> *…for instance, when my wife has her period then we can't give her tasks like preparing food… washing dishes or pans for at least until 2 to 3 days. And [we] don't ask her to touch cold water or things that are cold and [we] don't ask her to go to places that are far away; [she] can't stay long near the fire (don't force [her)] because this is as a sickness. (Male, 32, Liquica)*

> *When they [wives] menstruate, they always told us so we could allow them to have a rest or sleep and do not contact with cold water. Also, [they] didn't prepare food. If they feel dizzy, then they might fall and so the children help her to do the work and we can look for the traditional medicine to cure. And if*

we cannot cure it then we bring her to the hospital for further treatment because white blood cells have gone up into the head and made her feel dizzy and faint. (Male, 58, Liquica)

M1: *…for instance, if a guest or relatives visit us, we don't force her to make coffee, or cook because [she] has menses.*

M2: *…if these [menses] happened to her, then we don't let her to cook and do other works because she has menses. We cannot ask [her] to wash clothes and collect water far away because she is sick and should not walk. (Males, 32, 48, Liquica)*

Interviews with men indicated a basic lack of understanding among some husbands concerning the physiological nature of menstruation. In one group interview, two men reported believing menses to be related to sexually transmitted diseases, with only one man making the correct distinction between "horok"—a spell—and menstruation, a normal monthly physiological process.

M1*: It is a spell and a bad sickness which infected men when we establish sexual relations with other women. Once we get home and do it with our wives, they will* get infected as well. If we are faithful to our wives, they would not get that sickness.

M3*: Horok is a sickness from a spell which your wife gets from you after you have sex with other women.*

M2: *Menstruation and bleeding (horok) are not the same. Horok is too dangerous but menstruation is something ordinary. Menstruation is only once a month lasting for two or three day but bleeding can cause death if not properly treated with modern or traditional medicines. (Male, 56, 42, 35, Bobonaro)*

4. "DIRTY BLOOD" AND RESULTING PHYSICAL, SOCIAL, AND ECONOMIC EXCLUSION

Men in this study seemed also to hold strong beliefs about their wives being "contaminated" or "impure" while they are menstruating. Menstrual blood, described as "dirty," is believed to attract flies which spread disease. Some men reported believing menstruation to be the body's way of cleansing itself of "dirty" blood.

The women know better but what I know is that menstruation is dirty blood. (Male, 26, Bobonaro)

M1: *Menstruation is just like a dirty blood…It is very painful for my wife when her menstruation starts.*

M2: *The reason my wife will not be asked not to cook once she is on period is because she is unclean. Our ancestors would say that dirtiness is derived from women. So, they shall not touch dishes and spoons instead only sitting and resting. Otherwise the flies will spread the diseases to the food we have. (Males, 42, 56, Bobonaro)*

Menstruation is for cleaning the blood. It [blood] impacts us as men because women are not supposed to cook because they are wearing pads, otherwise, the flies may sit on it and spread the disease. [During her menses], it is time for me to cook…I know what to do when my wife is having her period. I would stay away from her for a week. I only sleep with her after it's clean. (Male, 32, Bobonaro)

Despite having access to store-bought pads, many women reported being more likely to spend time at home during their menses because of physical fatigue or fear of staining in public and the resulting embarrassment and shame.

F1: *[I] don't like to go out or go to party, just [stay] at home and always do my daily activity; I don't go out because I'm worried about heavy menses.*

F2: *[I am the] same. Don't go out, don't go to the market because [I'm] afraid of more bleeding but I always do the daily activities. (Females, 32, 22, Liquica)*

… If I feel like this [heavy menses/more bleeding] then I don't go [attend other community activities], because [I'm] worried that if something happened [get stains] and other people seen it, I will feel scared and embarrassed. He [husband] knows [that I have menses] if I don't do the chores. (Female, 32, Liquica)

People say bad things and gossip about us saying the girls have menstruation and get stained. She is allowed [to participate in community activities] but she gets embarrassed because people gossip about her and she doesn't want to attend the activity. (Female, 22, Liquica)

Women are often forbidden to cook or bake during their menses for fear they may contaminate the food. And because they may kill the plants, they are also frequently prohibited from tending to their gardens, a restriction which unfortunately precludes them from engaging in income-generating activities like rice farming and vegetable gardening.

When menstruating, [women] are not allowed to enter the kitchen garden. For instance if we grow eggplant, beans, vegetables or pumpkins then all plants will die…when daughters have their menses, their mothers will look for vegetables in the kitchen garden instead of their daughters because we bought and used fertilizer to put on the plants and the fertilizer was expensive. (Female, 47, Bobonaro)

In the community, others believe that when you are menstruating, you should not bake cookies and cakes or they will go bad, should not cook rice or it will be uncooked or burnt, should not drink coffee without sugar because the blood will stink and become dark, should not drink medicine, cannot eat chilies, and should not pick vegetables or tomatoes or else they will die. (Female, 24, Liquica)

Men tended more so than women to voice strong beliefs about the need to exclude women from family and social activities during menstruation. In some families, women are prohibited from participating in community activities or greeting guests in their homes because of their perceived state of impurity. Men also expressed the need to "control" their wives during their menses, due to the possible altering of their wives' physical or mental state.

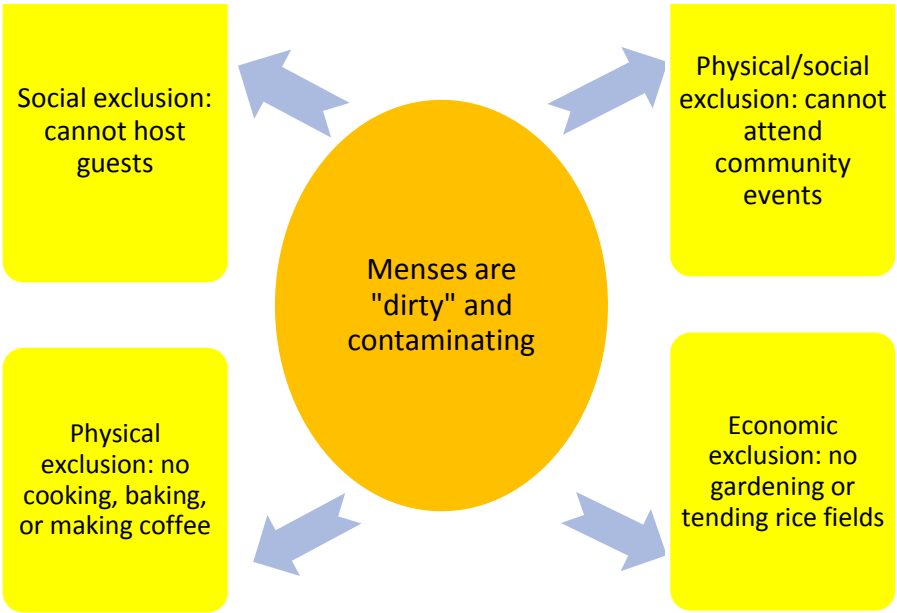
W3: *When I was on menses and wanted to participate in some programs, my husband wouldn't allow me to participate because there were lots of people.*

W2: *The same thing, my husband didn't allow me to participate in activities.*

W1: *In my experience, when visitors come, then my husband won't tell them that I am at home. He will say I wasn't home because he knows of my condition. (Females, 30, 32, 24, Bobonaro)*

Menstruation to my wife is just like an illness. When we have visitors I can just tell them that my wife is sick. She cannot attend the visitors because she is unclean. (Male, 35, Bobonaro)

Figure 14: Impact of "dirty" menses



MHM AND SCHOOL ATTENDANCE

Since this was the first in-depth study on MHM in Timor-Leste, the research team decided that MHM within schools warranted a separate study given that the context and sampling frame—i.e., interviewing students, teachers and principals about MHM in secondary schools—would be completely different than interviewing women about MHM in the home setting. Nonetheless, a few questions were presented to get a sense of whether or not attitudes and beliefs about menstruation would impact a girl's abilities to attend. When asked, "In thinking about school-aged girls in this community, how does having menses affect their ability to go to school, if at all?"—the responses varied from family to family. Some mothers mentioned both physical symptoms and social stigma as deterrents to school attendance.

> *If some feel a headache, they will stay home. (Female, 34, Bobonaro)*

> *They didn't want to go because of shame. They will feel worried about staining and worried if other friend's gossip about them. (Female, 25, Bobonaro)*

Mothers of other families, however, reported sending daughters to school with store-bought pads so they could change at school.

> ***F1:*** *I don't think it is a case because they still go to school and they are wearing pads.*

> ***F2:*** *Like my daughter, if she is menstruating she will always wear pads to school. She always brings extra pads in her bag. She changes them in the toilet and dumps them into the trash bin. (Females, 54, 60, Bobonaro)*

What is clear from the interviews, despite the mixed responses, is the important role schools play in educating girls about the physiology of menstruation and its part in the natural process of maturity. Younger women, having learned about the subject in the classroom, tended to view menses as "normal" and could discuss the matter openly with friends. Older women tended to be more tight-lipped on the subject, unable to speak to their mothers (or anyone) about their menses because they did not go to school and, as such, lacked a basic factual understanding of the matter.

> *On the community's point of view, this is shameful because it is a woman's secret. But if this [menses] happened in school, then I feel it is normal because the teachers always taught in the biology subject. This is normal and all the friends understand. (Female, 19, Liquica)*

> *She [mother] didn't explained to me because in the past we didn't go to school [mother and daughters] so I didn't asked my mother….I didn't know about my children'[s] menstruation and so I didn't tell them because I didn't go to school…I didn't tell anyone even my husband he doesn't know about it because menstruation is a dirty thing so I didn't tell anyone. (Female, 64, Bobonaro)*

It was not clear if girls were prevented by their families from going to school. Further research is needed and more interviews conducted with school-aged students are required to fully understand the constraints to school attendance as they relate to MHM.

D. MHM OVER TIME

The study's inclusion of menopausal women enriched the data by presenting the research team with an opportunity to understand MHM practices before the advent of household water supply and latrines in Timor-Leste. Comparisons of their testimonies with those of younger women reflect the changes in attitudes and practices related to MHM that have occurred over time.

As described in previous sections, all menopausal women reported washing their cloths and pads in the river, a common practice in their time. Nowadays, younger women report greater access to and usage of products and facilities (pads, toilets, water) for MHM. Less stigmatized than before, the topic of menstruation is now discussed at home among immediate family members (though still not in public). Older women cited not having gone to school as their primary reason for their inability to discuss menstruation with anyone, including their closest family members. All middle-aged and younger women reported being able to discuss menses with their husbands, resulting in greater support from husbands and children.

> *No, I just find out by myself [about menses], I didn't go to the nurses to tell me. I know because it was explained by my mother on how to change and I was told to wait for three days and then have a shower. If I washed my hair, the white blood cells and red blood cells will be mixed up and cause a headache. We just imitated what was done by our mother and our ancestors passed down to us. Before Portuguese time, the nurses didn't explain it to us, but recently during my children's time, they [children] followed what the nurses told them. In my time, there was no one to explain it to me except my mother and grandmothers. (Female, 60, Liquica)*

Despite the lessening stigma associated with menstruation, the long-held beliefs about shame, staining, and menstruation still exert influence in Timor-Leste and young women are still subjected, to a large extent, to physical and social exclusions during their menses.

Table 5: Menstruation management then and now			
	Women over 45	**Women 30-45**	**Women 30 & Younger**
Products used, cleaning, and disposal	Used Tai's, sarongs, underwear, or nothing.	Used *henna* or pads exclusively, or a mix of both.	Use either *henna* and pads, or pads exclusively; cost may or may not be barrier for purchasing disposable pads.
Social support from family	May have received information from mothers; did not receive information health staff or teachers if they did not attend school; did not discuss menses with their husbands.	Likely to have received information from mothers or sisters; will discuss menses with husbands; are offered physical support by families.	Likely to have learned about menses from mothers or older sisters before having menses themselves; likely to have received information about MHM from school; able to openly discuss menses with their husbands; children and extended family likely to help with chores; will have friends for support should they have staining or start menses at school.
Beliefs and practices	Will avoid "white blood" and other dangers during menses; will not wash hair, eat chilies or papaya leaves, or drink coffee; will avoid washing activities and contact with cold water; will not bake or tend to vegetables; will not receive guests or attend community events; likely to stay at home during menses.	Will avoid dangers of "white blood" travelling by not washing hair (though bathing the body is permitted); will avoid similar foods as women over 50; may or may not attend community events depending on the individual; likely to provide disposable pads for daughters to attend school during menses.	Will avoid dangers of "white blood" by adhering to the restrictions placed by their mothers –some may not have any restrictions, some may have quite a few.

VI. CONCLUSIONS AND RECOMMENDATIONS

The findings from this study provide a greater understanding of MHM in Timor-Leste, in particular, how behavioural determinants such as access, social support, attitudes, beliefs, and social norms related to menstruation influence MHM practices. The study's results identify possible entry points for generating greater demand for toilet adoption in Timor-Leste—one of the most prominent being the desire and need for improved MHM. The findings also point to a strong, underlying need to improve Timorese women's factual knowledge of menstruation—to not only promote healthier MHM practices, but to also dispel many of the misconceptions related to menstruation that adversely affect rural women and girls in Timor-Leste. The last section of this paper presents conclusions for each of these behavioural determinants and provides recommendations on the way forward.

1. **CONCLUSION: ACCESS to toilets, in most cases, improves women's ability to manage their menses**. The majority of women in this study who owned properly working toilets used them for all of their sanitation needs, including changing, washing, and disposal of their pads during menstruation. In Timor-Leste, beliefs about "dirty" blood and contamination did not appear to prohibit women from using their toilets as they do in other countries. Women who owned pour flush toilets reported also being more likely to dispose of their pads in a rubbish bin (instead of the less hygienic practice of disposing of them out in the open). However, not all toilet owners used them for MHM. In some instances, some women were still changing in their bedrooms and washing in the river because their toilet walls lacked sufficient privacy (in the case of pit latrines) or because water was unavailable (in the case of pour flush latrines).

   RECOMMENDATION: Generate a greater demand for toilets, using improved MHM as a key entry point. When women have toilets that provide sufficient privacy and access to water, they will use them for MHM. To take advantage of this general tendency, the *additional* benefits of owning a toilet for menstruation management should be highlighted and integrated into all sanitation marketing materials and promotion activities—in short, benefits should be leveraged to generate a greater demand for toilets. Advantages in toilet models include the following:

   - **Pit latrines** give women a convenient and hygienic way to change and dispose of pads as the pads can be dropped directly into the pit.
   - **Pour flush latrines** allow for cleaning, washing, and disposal all in one place with a small addition of a rubbish bin inside or next to the latrine.

   RECOMMENDATION: Promote the benefits of having a toilet for pregnant women. Studies confirm that having a toilet decreases the burden of menses on women. The benefits of having a toilet extend also to pregnant women, as their condition often requires their frequent access—and closer proximity—to toilets. Thus, the benefits of a toilet should be framed not only in the context of improved MHM, but also in also in the context of making sanitation needs easier for pregnant women. This topic can also be included in the discussion between Community Natural Leaders and households.

2. **CONCLUSION: ACCESS to and preference for disposable pads is on the rise among rural Timorese women.** Women in Bobonaro and Liquica indicated a strong preference for using store-bought pads over

henna, with the majority of them now exclusively using disposable pads. The advantages of store-bought pads include women's increased mobility and ability to travel outside the home—and girls' improved abilities to attend school—during their menses. The disadvantages, however, include disposable pads' tendency to clog pour flush toilets and their considerable contribution to non-organic waste. Another disadvantage of disposable pads is the common, unhygienic practice of throwing used pads out into the open, one that increases the risk of contamination from blood-borne diseases. Even in households where women dispose of their pads in a rubbish bin—in the absence of a solid waste management system—families will still simply resort to burning their trash. Although the exact environmental and health impact of burning the pads' plastic parts can only be determined by analysing the plastic's chemical composition, many countries nonetheless routinely discourage this practice because doing so is known to release harmful dioxins.

RECOMMENDATION: Provide information on the correct operation and maintenance of toilets and the safe disposal of pads. In addition to marketing the benefits of toilets, the research also indicated a need to provide practical information on how to operate and maintain latrines, particularly in regard to menstruation management—including how to prevent toilets from breaking down or getting clogged by disposable pads:

- **Latrine walls:** Given the taboos surrounding menstruation in Timor-Leste, women voiced privacy as the key factor in determining where to manage their menses. In households with toilets, women tended not to use them if their walls had too many holes and lacked sufficient privacy. Thus, latrine walls made of traditional materials need to be either repaired or reconstructed altogether to ensure privacy for menstruation management.
- **Pour flush latrines:** In households with NGO-supported latrines, several women mentioned being advised by the NGO staff to take precautions with disposable pads. Heeding this advice, some women pitched pads into rubbish bins while others flushed only the cotton—and not the plastic—down the toilet. That these precautionary measures were taken indicate that information on latrine maintenance with regard to pad disposal can be effective and should be included in both marketing materials and training curriculum for latrine producers/sellers of pour flush models to pass on to consumers.

RECOMMENDATION: Provide information on the correct operation and maintenance of pit latrines. One man in the study reported using his pit latrine for rubbish disposal: this is a highly inadvisable practice and owners of pit latrines need to be informed of the negative health and environmental impact of using pit latrines for this purpose. Doing so not only results in quickly accumulating trash (obviously), but also increased *latrine odor,* which in turn attracts many disease-carrying flies and pests. Furthermore, because added liquids materials may inhibit the decomposition of feces, increased *sludge toxicity*—another health and environmental hazard—also needs to be considered. Information provision to households regarding the correct use and maintenance of pit latrines can be undertaken by the Community Natural Leaders responsible for follow up initiatives in the PAKSI program, or as part of *suco saudavel* promotion campaigns for proper sanitation.

3. **CONCLUSION: Significant SOCIAL SUPPORT is provided to women during their menses by husbands and other family members.** Interviews reveal that husbands provide significant physical support to women during their menses by helping with the cooking, cleaning, and "heavy work," and by taking their wives to seek medical advice, if needed. Encouragingly, menstruation seems to be a topic most couples are comfortable discussing with one another in private, thus providing another entry point for the integration of MHM within sanitation programs.

RECOMMENDATION: Discuss the benefits of owning a toilet in the context of menstruation management among couples. The majority of men and women in this study believe that women need additional physical assistance during their menses. In the Follow-up phase of PAKSI during which Community Natural Leaders conduct household visits, the benefits of latrines can be marketed to illustrate how they make menstruation easier for the wives—for example, by providing them with a clean, private place for changing, and cleaning. In addition, If their wives have a safe and private place to go for MHM and defecation, then there is less risk of exposure to sexual abuse. This becomes an increased risk when women have to go outside into the woods to defecate or practise MHM. It is often reported that men feel they have to accompany their wives on such visits in the absence of a toilet, to ensure their safety. Therefore having a toilet would clearly be of benefit to men who carry out this ritual every day for their wives' safety.

4. **CONCLUSION: ROLES AND DECISIONS for major household items are still determined by men but women may be able to influence design of toilets.** As corroborated by other studies' findings on decision making for toilets, men appear to be the ones ultimately making the final decision on whether or not to build or buy a toilet in most households, although women may exert some degree of influence on the design options or the building of latrines. If women were better informed about the particular features that could improve MHM, they could leverage this information to potentially influence the design of their latrines.

   RECOMMENDATION: Provide women with adequate information on latrine options related to menstruation management. As part of the discussion with couples, Community Natural Leaders can emphasize toilet features beneficial to MHM, including availability of water, walls that provide sufficient privacy, and rubbish bins. In addition, households could also be advised on how to build a dry rack in the back of the latrine for drying *henna* so that it is properly dried and sterilized.

5. **CONCLUSION: School attendance affects girls' attitudes about menstruation and MHM practices.** Since MHM in schools was purposely not included as a research objective, only a few questions about the impact of MHM on school attendance were asked of women and girls. Responses to these questions were mixed. However, what is clear is that school attendance seems to foster more open attitudes and acceptance of MHM among younger girls.

   RECOMMENDATION: Schools play a critical role in educating girls about the physiology of menstruation and further research is needed to inform further interventions.

6. **CONCLUSION: BELIEFS AND ATTITUDES about menstruation are deeply ingrained and stem from a lack of knowledge about the biology of menses**. Although there appears to be a shift toward more positive attitudes about menstruation among younger women, the biology of menstruation is still shrouded in much misinformation. At best, some beliefs are neutral and pose little to no harm to women; at worst, can result in women's and girls' exclusion from economic and social activities. Some of these might also have health implications, as a result of altering hygiene practices. Some of these beliefs are outlined below:

   - Beliefs about **"white blood," "sickness,"** and the resulting fragile state of women during their menses do not appear to have detrimental consequences for women. On the contrary, often times these "sicknesses" provide them with reasons to ask for physical support from family members, support which may otherwise be unavailable at other times of the month.

- Attitudes and beliefs that women are **contaminated and "dirty"** are detrimental, however, and can lead to the exclusion of women from social activities such as greeting guests; income generation activities such as gardening or farming rice; and community activities such as decision making about public works that could greatly impact their daily lives. Examples of community activities include the CAP process (whereby everyone—women and men—are involved in planning for their water systems) and the PAKSI triggering activities for sanitation. In addition, the embarrassment of having *henna* seen by others may result in improper drying or cleaning of the cloths, which could increase the likelihood of urinary tract infections from poor hygiene.
- The need to avoid contact with cold water, a common restriction, could also discourage women from bathing for the duration of their periods if they are not allowed to heat up water, which poses health risks to menstruating women.

RECOMMENDATION: Provide accurate information about menstruation as a first step to dispelling beliefs and improving attitudes towards menstruation. Attitudes and beliefs are perhaps the most difficult determinants to change as they are long-held, having been passed down from generation to generation. Given that most sanitation programs would not have the resources to devote an entire program to addressing MHM, a more practical and immediate solution would be to provide women with adequate information about the biology of menstruation—specifically, the changes that occur within a woman's body throughout her monthly cycle. This would begin to help dispel many misconceptions, including the pervasive notion of "white blood" and its ability to travel to the head and cause dementia.

RECOMMENDATION: Equip mothers with skills and accurate knowledge to discuss menses with their daughters. The majority of women in this study did not have prior knowledge of menstruation before their menarche. Upon menarche, mothers are usually girls' first source of information. What the girls learn from their mothers is the foundation for what they will know and believe about menstruation throughout their lives; it is also what they will pass onto their sisters, friends, husbands, and daughters. Some women, especially the older ones, mentioned not being able to explain or discuss menstruation because they never went to school (and thus had no factual knowledge of the subject).

RECOMMENDATION: Use schools as an entry point to explain the biology of menstruation to girls and to introduce toilet design options to assist in MHM. In light of the positive impact of schools in improving knowledge and attitudes around menstruation, sanitation programs could, as part of their promotion activities, organize "hygiene workshops" at middle schools to encourage mothers and daughters to come and learn about menstruation. A variety of tools and materials already exist (see www.menstrupedia.com) and these could be modified and adapted to be context-specific to Timor-Leste. Questions and answers should integrate some of the more prevalent beliefs surrounding menstruation, such as the notion of "white blood" and perceptions of women being "dirty" and contaminated during their menses.

In addition, these workshops could be used as forum to discuss the benefits of toilet ownership in managing menses; program staff could provide detailed explanations of various toilet design options that would help women manage their menses. These proposed activities would help equip women with the necessary knowledge to influence the design and adoption of toilets in discussions with their husbands.

7. CONCLUSION: Further research on menstruation and MHM practices In Timor-Leste is needed.

This study serves as a starting point to understanding MHM in Timor-Leste and provides insights on how MHM can be approached by the Timorese government and the WASH sector.

RECOMMENDATION: Future studies can be both quantitative and qualitative and could explore the following questions:

- What do men and women currently know about pad disposal as stratified by households with pit latrines, pour flush latrines, and no latrines?
- What are the disposal habits for *henna* and store-bought pads among households with toilets as compared to those without toilets?
- How willing would people be (village chiefs or health workers, for example) to include the topic of MHM in public discussions about investing in latrines?
- What are the barriers to/enablers for girls attending school during their menses?
- Would there be a demand by young women for a recyclable sanitation product, i.e. one that is sturdier than homemade henna and stays in place?

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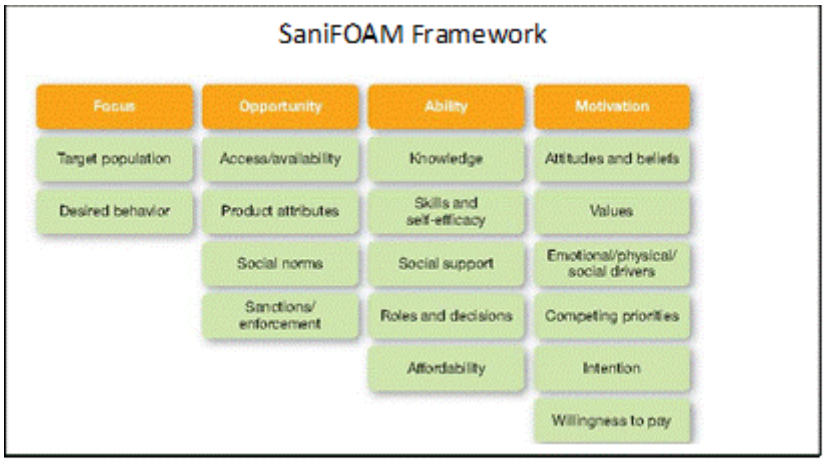
ANNEX I: SANIFOAM FRAMEWORK

The SaniFOAM behaviour change framework was developed to examine sanitation behaviours and has been used in different contexts and for various WASH behaviours (latrine uptake, faecal sludge management, etc.). The framework examines behavioural determinants, factors that can help or prevent someone from adopting a behaviour and is divided into four columns.



Focus refers to the need to identify the desired behaviour and the target populations where this target behaviour is to be promoted.

Opportunity is a category of four factors that can affect an individual's *chance* to perform the target behaviour including structural and institutional factors (e.g., social norms, fines or sanctions, and access to products and services. Under this column is a set of four determinants, defined below:

- *Access/availability:* ease of obtaining or accessing products (pads, latrines)
- *Product attributes:* aspects people like about a product – durability, smell
- *Social norms:* rules or patterns that govern the way individuals/ communities behave.
- *Sanctions/enforcements:* Punishments/rules that encourage or discourage people to engage in a behaviour.

Ability is a category of factors related to an individual's skills and capacity to perform the target behaviour. Under this column is a set of five determinants as defined below:

- *Knowledge:* facts accumulated through learning about objects, actions, and events that are true.
- *Skills/self-efficacy:* knowledge needed to adopt a behavior such as building a latrine (skills) and confidence in one's ability to carry out a behavior (self-efficacy).
- *Social Support:* Emotional, physical, and informational comfort given to an individual for carrying out the behavior.

- *Roles and Decisions*: Function of person(s) within the household/community who makes decisions or can influence behavior.
- *Affordability*: Actual or perceived ability to pay for a product/service or the opportunity cost of doing a behavior in terms of time and/or money.

Motivation is a category of factors that affect an individual's desire to perform the target behaviour including their beliefs and values and social, physical, or emotional drivers. Under this column is a set of six determinants, defined below:

- *Beliefs/attitudes:* Opinions of a product or behavior which may or may not be true.
- *Values:* Beliefs shared by group or community about what is good and desirable and what is not.
- *Emotional/physical/social drivers:* Feelings of pride, disgust, or shame from doing or not doing a behavior.
- *Intention:* What can be done to make the practice easier (reserving money each month to buy soap or save for a latrine, placing soap near water).
- *Willingness to pay:* How much households or individuals are interested in paying for a product or service, in cash or credit.
- *Competing priorities:* Competing demands for resources that will affect behavior including food, shelter, water, health fees school fees, weddings, cell phones, etc.