

The Last Taboo:

Research on menstrual hygiene management in the Pacific

Papua New Guinea

July 2017

Final Report

Susu Mamas PNG Inc.
Family and Youth Health Services
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Acronyms

ARB	Autonomous Region of Bougainville
DFAT	Department of Foreign Affairs and Trade
FGD	Focus group discussion
IDI	In-depth interview
INGO	International non-government organisation
KII	Key informant interview
MHM	Menstrual hygiene management
NCD	National Capital District
NGO	Non-government organisation
PNG	Papua New Guinea
UNICEF	United Nations Children’s Fund
WASH	Water, sanitation and hygiene

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Yasmin Mohamed (Burnet Institute) and **Lisa Natoli** (Burnet Institute), July 2017

Executive summary

Managing menstruation effectively and with dignity can be challenging for girls and women in low and middle-income countries. Currently there is limited research on menstrual hygiene management (MHM) in the Pacific region.

This report presents findings from research that was undertaken in Papua New Guinea (PNG) in March 2017. The study is part of a larger piece of work that includes Fiji and Solomon Islands, and is funded through the Australian Government, Department of Foreign Affairs and Trade (DFAT). The research focuses on menstruation and how it is managed by women and adolescent girls in PNG. The purpose of the study is to explore the challenges experienced by women and girls in managing their menstruation, and whether these challenges make it hard for them to equally participate in school and work and engage with their communities.

The study was conducted in two research sites: Port Moresby (urban setting) and the Autonomous Region of Bougainville (rural setting). The research methods were primarily qualitative, using focus group discussions (10), in-depth interviews (3) and key-informant interviews (13) as the main strategies for data collection. A structured observation of water, sanitation and hygiene (WASH) facilities was undertaken in a small number of schools and workplaces (4), and an analysis of the availability and cost of sanitary products was conducted in each research site. The modest sample size and other design limitations (refer to Section 4) mean that the study findings should not be generalized to the broader population. In particular, with over 800 languages and more than 1,000 distinct ethnic groups, the incredible diversity in PNG should be acknowledged when interpreting the findings from this study.

The study found that:

- Adolescent girls and women in PNG face a number of challenges that impact on their ability to manage menstruation effectively and with dignity; these challenges interact, and have the potential to negatively influence physical and emotional health, participation at school, work and in the community, and on the environment.
- Many adolescent girls lack comprehensive knowledge around menstruation and are unprepared for menarche. This often results in feelings of shame and embarrassment. Mothers, other female relatives, friends and female teachers are an important source of information and support, however many lack an accurate and thorough understanding of menstruation and MHM. Menstruation is taught in mixed girls and boys classes, limiting the depth of knowledge that can be provided and increasing girls' vulnerability to teasing. This approach can also limit girls' opportunities to ask questions about menstruation and hygiene due to shyness.
- Common beliefs and discriminatory attitudes around menstruation being "dirty" and "unhealthy" can make it difficult for women and girls to manage their menstruation and can negatively impact on their emotional well being. The high level of secrecy that surrounds menstruation can also be challenging, and is an additional barrier to effective MHM
- While there are a large number of commercial sanitary products available in PNG (less so in North Bougainville), products are unaffordable for many women and girls. As a result, some adolescent girls and women rely on homemade solutions (of variable efficacy) to manage their menstruation, often resulting in a fear of staining and leakage. Women and girls report preoccupation with this fear and distraction from school and work. Some young women report missing classes due to the unaffordability of commercial products, and others disengage from community life altogether while they are menstruating.

- Water, sanitation and hygiene facilities in schools and workplaces rarely meet the needs of menstruating women and girls. Challenges include a lack of water supply, non-functioning toilets, unclean and poorly maintained facilities, no disposal mechanisms for used MHM materials and a lack of private, secure places for washing and personal hygiene. Inadequate WASH facilities contribute to unhygienic menstrual management practices (such as improper disposal of used absorbent MHM materials), or the preference to return home to change used materials. Inadequate WASH facilities in schools and workplaces are likely to contribute to absenteeism among women and girls.

Recommendations¹

- 1. Strengthen whole of government leadership and policy commitment on supporting MHM within the National and Provincial Departments of Health and Education and the Department for Community Development and Religion (focal point for disability)**
 - 1.1. Ensure national and provincial health and education policies and action plans incorporate MHM and develop appropriate monitoring mechanisms to accurately track progress, in line with the aspirational gender equality objectives outlined in PNG Government documents.² (M)
 - 1.2. Educate those responsible for labour-related policy (such as Occupational Health and Safety Standards) about women-specific WASH needs and the translation of evidence into policy and practice. This is essential to facilitate the improvement of WASH facilities in workplaces and to reduce the gender gap in economic activity. (S)
 - 1.3. Increase cross-sectoral collaboration on MHM through stakeholder engagement, education and advocacy to take MHM beyond the WASH and education sectors. Economic empowerment, gender, disability and disaster risk reduction initiatives all need strengthening with regard to MHM. (M)
- 2. Improve access to high quality information about menstruation and MHM via National and Provincial Health and Education Departments, and NGOs working in the area of sexual and reproductive health and WASH.**
 - 2.1. Review and strengthen the menstruation components of the school curriculum (notably in the Personal Development subject) (M)
 - In particular:
 - Ensure MHM is taught to both boys and girls, but in sex-segregated classes led by teachers of the same sex as the students;
 - Start MHM education in primary school to ensure girls are informed prior to the onset of menarche;
 - Ensure the inclusion of comprehensive information around effective management of menstruation such as products available, appropriate disposal practices and personal hygiene, including handwashing with soap;
 - Promote respect for privacy and support for other students;

¹ These recommendations will be reviewed and prioritised and feasibility assessed by key stakeholders during a planned workshop in August 2017. They are currently categorised as being short (S) term, medium (M) term and long (L) term objectives.

² Including the PNG Government's Vision 2050, the PNG Development Strategic Plan 2010-2030, the National Health Plan 2011-2020 and the National Strategy to Prevent and Respond to Gender Based Violence 2016 - 2025.

- Ensure that boarding schools provide comprehensive education and support around MHM, potentially through integration into school induction programmes, specific education programmes and training of peer educators.
- 2.2. Develop training resources and provide ongoing training to teachers (both male and female) on menstruation and MHM. Teachers at boarding schools should be specifically trained to provide adequate support to female students around MHM. (M)
 - 2.3. Support community-wide health communication involving men, women, boys and girls to sensitively address the potentially harmful beliefs and social norms associated with menstruation. (S)

Consideration should be given to addressing:

 - Beliefs around menstrual blood being “dirty” or “unhealthy”;
 - Unwanted behavioural restrictions;
 - The impact of secrecy on women’s and girls’ ability to manage their menstruation effectively and with dignity;
 - Beliefs around washing, drying and disposal of sanitary pads.
 - The possible relationship between menstruation and Family and Sexual Violence
 - 2.4. Include mothers and other female relatives in education programs at schools to improve their understanding of menstruation and MHM. Programs for fathers should also be developed to engage men with this important topic; existing health and wellness programs or male advocacy programs that encourage healthy relationships might provide an entry point. (M)
 - 2.5. Develop a disability-inclusive and accessible comprehensive sexual and reproductive health curriculum that includes menstruation and MHM. This could be implemented across special schools and mainstreamed into all schools to ensure girls with disabilities receive quality information and education on menstruation and sexual and reproductive health and rights. (M)
 - 2.6. Train and support local health care workers to engage with young people and the community. Health workers have an important role to play in providing comprehensive and accurate information on mensuration, MHM and sexual and reproductive health. (M)

3. Improve availability, affordability, and access to quality commercial menstrual hygiene products and locally made alternatives

- 3.1. Improve affordability of quality products through public private sector partnerships to build demand and supply of commercial sanitary products. (M)
- 3.2. Facilitate knowledge sharing about existing approaches to making simple homemade pads, and whether these local solutions could be incorporated into business ideas. (S)
- 3.3. Pilot a local female-led livelihood project to scale up production, market-based demand and social marketing of reusable pad designs, for example Days for Girls kits. (M)
- 3.4. Expand emergency access to sanitary pads in schools, workplaces and public toilets by selling pads ‘at cost’ or including pad supply in operational and maintenance budgets and routine first aid resourcing. (M)
- 3.5. Conduct a supply chain analysis to identify pathways to increase availability of affordable and high quality sanitary pads in rural communities. (S)

4. Water, sanitation and hygiene facilities

- 4.1. Develop and implement national minimum standard guidelines for MHM-friendly WASH facilities in schools in line with the WHO and UNICEF emerging JMP service-level standards for school WASH facilities. Advocate for the inclusion of improved MHM is included as a specific objective in the next version of the PNG National WASH Policy (M)

- 4.2. Develop and implement Occupational Health and Safety standards for informal workplaces to ensure women-specific WASH needs are met, particularly safe disposal mechanisms of menstrual hygiene materials. (M)
- 4.3. Strengthen efforts to support availability of appropriate, well-maintained and clean latrines in schools and workplaces (formal and informal). (M)
This could include:
 - Prioritising budget allocation for paying water bills to prevent restricted access to running water;
 - Promoting the use of generators where inconsistent electricity supply is a problem;
 - Considering the use of acceptable and safe alternatives to flush toilets (such as pit latrines) in cases where access to water is an ongoing issue;
 - Ensuring a reliable supply of water, soap and anal-cleansing materials including funding for the operation and maintenance of the latrines;
 - Documenting clear designation of cleaning responsibilities with appropriate consequences for lack of compliance;
- 4.4. Implement small-scale pilot projects to test context-specific low-cost alternative and sustainable disposable systems requiring low maintenance in schools and workplaces. This could explore ways to reduce environmental impact of disposable pad use: for example new composting technologies and exploration of bio-degradable pads, eco-friendly incinerators (in settings where culturally appropriate) and chutes or sealed containers. (L)
- 4.5. Accessibility, safety and security audits to be conducted in consultation with national Disabled People’s Organisations to ensure toilets in workplaces and schools are accessible and appropriately designed for people with a range of different disabilities. In particular, women with disabilities should have a voice in this process. (M)

1. Background and introduction

Managing menstruation effectively and with dignity can be challenging for girls and women in low and middle-income countries. Currently there is limited research on menstrual hygiene management (MHM)³ in the Pacific region⁴. Studies conducted in countries in Africa and the Asia regions have detailed a range of challenges experienced by girls in relation to managing their menstruation. These include: lack of knowledge about menstruation and how to manage it; harmful socio-cultural beliefs and taboos about menstruation being unclean or dirty; inadequate water, sanitation and (private) hygiene (WASH) facilities at school; lack of available and affordable absorbent materials; and, challenges washing and drying materials if disposable products are unaffordable, and lack of safe, environmentally-friendly disposal mechanisms for disposable products.⁵ Anecdotal evidence from the Pacific suggests similar challenges, and that these may be a barrier to school participation and attendance, and to employment and income generation during menstruation.

This report presents findings from research undertaken in Papua New Guinea (PNG) in March 2017. The PNG study is part of a larger piece of work that includes Fiji and Solomon Islands, and is funded through the Australian Government, Department of Foreign Affairs and Trade (DFAT). The research focuses on menstruation, and how it is managed by women and adolescent girls in PNG. The purpose of the study is to explore the challenges experienced by women and girls in managing their menstruation, and whether these challenges make it hard for them to participate equally in school and work, and to engage with their communities.

The study took place in two provinces in PNG: the National Capital District (NCD) and the Autonomous Region of Bougainville (ARB). However, as PNG is one of the most culturally diverse countries in the world, this cultural and geographic diversity must be acknowledged when interpreting the findings, which are limited to two distinct study sites.

The research was undertaken by Burnet Institute Australia and WaterAID Australia in collaboration with local research partners Susu Mamas in Port Moresby and Plan International in Bougainville, and with support from the PNG National Department of Education.

2. Aims

The aims of the study were to:

- Understand how women and girls in PNG currently manage menstruation.
- Explore the barriers/challenges experienced by these women and girls in managing menstruation.

³ Definition of adequate Menstrual hygiene management: *Women and adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials. They understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear.* Joint Monitoring Program (2012): http://www.wssinfo.org/fileadmin/user_upload/resources/Hygiene-background-paper-19-Jun-2012.pdf.

⁴ Burnet Institute, International Women's Development Agency, WaterAid. 2016. Literature review, 'The Last Taboo' <http://www.pacificwomen.org/resources/the-last-taboo-research-on-managing-menstruation-in-the-pacific-lit-review/>

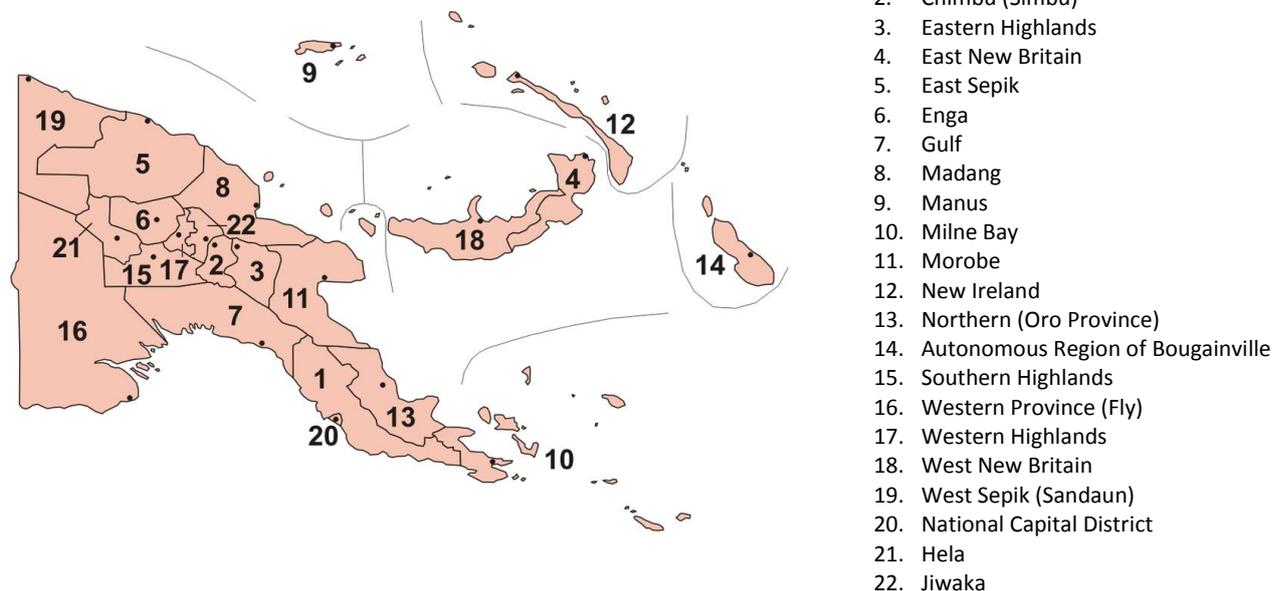
⁵ Sumpter C, Torondel B. A systematic review of the health and social effects of menstrual hygiene management. *PLoS One*. 2013;8(4):e62004.

- Determine the impact of menstrual management practices on women’s and girls’ participation in education and income generation.
- Identify opportunities to improve women’s and girls’ ability to manage their menstruation effectively and with dignity.

3. Context

Papua New Guinea is one of the most culturally diverse countries in the world. With a population of 7.6 million, PNG has over 800 languages and more than 1,000 distinct ethnic groups.⁶ Women and girls aged 15-54 years make up approximately 28 per cent of the population⁷ and an estimated 85 per cent of the population live in rural areas.⁸ Indicators of WASH access in the Pacific are among the lowest in the world, with only 40 per cent of the population having access to an improved water source and less than twenty percent having access to improved sanitation.⁹ PNG is comprised of four regions and 22 provinces, including the National Capital District and the ARB (Figure 1).

Figure 1: Map of Papua New Guinea



Port Moresby is the capital and largest city in PNG, with a population of approximately 400,000.⁷ The ARB has an estimated population of 300,000 and covers an area of more than 9,000 square kilometres.¹⁰ The research was conducted in two sites: Port Moresby in the National Capital District (urban setting) and North Bougainville in the ARB (rural setting).

Challenges for women in PNG include low levels of education, high levels of gender-based violence, and pervasive gender inequality.⁷ Adolescent fertility rates are high, with an estimated 13 per cent of girls aged 15-19 already being mothers.¹¹ PNG ranks in the bottom ten countries in the Gender

⁶ <http://www.worldbank.org/en/country/png>

⁷ <https://www.cia.gov/library/publications/the-world-factbook/geos/pp.html>

⁸ http://www.pg.undp.org/content/papua_new_guinea/en/home/countryinfo.html

⁹ <http://www.who.int/gho/countries/png.pdf?ua=1>

¹⁰ <http://www.abg.gov.pg/about/quick-facts>

¹¹ National Statistical Office (2006) Papua New Guinea Demographic and Health Survey

Inequality Index¹² and is one of only five countries that currently has no women in national parliament following the 2017 election¹³. Approximately two thirds of women in PNG have experienced gender-based violence, and in many cases health care and education are less accessible for women and girls⁸. A recent study in ARB found that 80 per cent of men had been physically or sexually violent towards a partner in their lifetime, 41 per cent had reported having committed non-partner rape and two thirds of men believed that a woman could not refuse to have sex with her husband.¹⁴ This same study also found that one in five women's first sexual experience was rape and one in three women who first had sex under the age of 16 had been forced or raped.¹⁴ Sexual violence has become such a common occurrence in parts of the country that fear of rape, including gang rape severely circumscribes the freedom of movement of women and girls. The high prevalence of violence has serious implications for public health and social policy, economic development and justice and law enforcement.

Limited research has been undertaken on MHM in PNG. A qualitative study conducted at a sexual health centre in Port Moresby highlighted traditional customs relating to menstruation including restrictions on cooking, sexual intercourse and proximity to men. Sanitary products were described as unaffordable and inaccessible, and internal products (such as tampons) were rarely used.¹⁵

A 2014 review of MHM in the East Asia Pacific region by UNICEF found that initial efforts to address MHM had been made and that there is increasing engagement from the government and other stakeholders.¹⁶ In particular, the 'Health Promoting Schools - Student Teacher Course Book' integrates MHM and provides participatory activities for use in schools.¹⁷ The Government of Papua New Guinea's National Quality School Standards Framework (2013-2020), mentions the need for MHM disposal mechanisms, however the Department of Education's 'Personal Development Teachers Guide' for upper primary school and lower secondary school includes very little on MHM.¹⁸ The PNG National Water, Sanitation and Hygiene (WaSH) Policy 2015-2030 contains one mention of the need for improved menstrual hygiene in the context of subsidies for sanitation.¹⁹ WASH facilities

¹² <http://hdr.undp.org/en/countries/profiles/PNG>

¹³ <http://www.ipu.org/wmn-e/classif.htm> (website yet to update PNG data following 2017 election)

¹⁴ UNDP, UNFPA, UN Women, UN Volunteers. (2013) The Family Health and Safety Survey, Bougainville PNG. <http://www.partners4prevention.org/sites/default/files/p4p-bougainville-report.pdf>

¹⁵ Valley et al. Intravaginal practices and microbicide acceptability in Papua New Guinea: implications for HIV prevention in a moderate-prevalence setting. BMC Research Notes. 2012, 5:613. doi: 10.1186/1756-0500-5-613

¹⁶ UNICEF (2016) Supporting the rights of women and girls through menstrual hygiene management in the East Asia and Pacific region. https://www.unicef.org/eapro/MHM_Realities_Progress_and_OpportunitiesSupporting_opti.pdf

¹⁷ Department of Education, Teacher Education Division, Government of Papua New Guinea, *Student Teacher Course Book, Health Promoting Schools Course*, Department of Education and Department of Health, Government of Papua New Guinea, 2009 (first edition), http://hivehealthclearinghouse.unesco.org/sites/default/files/resources/bie_health_promoting_schools_course_student_teacher_course_book.pdf

¹⁸ Papua New Guinea Department of Education. (2006) *Personal Development, Lower Secondary School Guide and Upper Primary School Guide*. Port Moresby: Government of Papua New Guinea.

¹⁹ Department of National Planning and Monitoring (2015). PNG National Water, Sanitation and Hygiene (WaSH) Policy 2015-2030

in schools are inadequate in much of PNG, and UNICEF and the National Department of Education are working together to address this.²⁰

4. Study design

Ethical considerations: This study was approved by the Research and Evaluation Steering Committee (PNG National Department of Education), the Medical Research Advisory Council (PNG National Department of Health), and the Alfred Hospital Human Research Ethics Committee (Melbourne, Australia).

Methods: The study was primarily qualitative, using focus group discussions (FGD), in-depth interviews (IDIs) and key-informant interviews (KIIs) as the main strategies for data collection. Structured observations of WASH facilities were undertaken in a small number of schools and workplaces, and an analysis of the availability and cost of sanitary products was conducted in each research site.

The content of FGD and interview question guides was informed by the Ecological Framework for MHM²¹ and a review of relevant literature. English question guides²² were translated into Tok Pisin (Papua New Guinean pidgin) and reviewed by a second person to confirm accuracy. FGDs included a number of participatory activities to stimulate discussion including: body mapping, community mapping, the Ten Seed Technique²³ and drawing of an 'ideal' latrine.²⁴ Activities such as these focus participants' attention on the task at hand (drawing for example) and provide some distraction from the sensitive topics of discussion. Fieldwork took place from 23-31 March 2017.

Study team: The study team comprised two international consultants (Burnet Institute) and a local team of four female and one male researcher in Port Moresby, and three female and four male researchers in North Bougainville. Two Research Officers from the National Department of Education also accompanied the research team in Port Moresby. Local study teams participated in training (approximately 3 days duration) which included: the background and purpose of the research; principles of qualitative data collection and analysis; roles of facilitator and note takers; use of participatory tools; discussion of culturally sensitive topics and how this impacts on data collection; ethical considerations- including problem based activities on topics including informed consent, confidentiality, and potential risks and harms and procedures for minimising and addressing these; review and revision of the question guides; data management; and planning for data collection and logistics.

In order to be sensitive and respectful of cultural norms, male members of the research team were limited to data collection with male study participants and similarly- female researchers were limited to data collection with female study participants.

²⁰ https://www.unicef.org/png/activities_24456.html

²¹ UNICEF/Emory University. WASH in schools empowers girl's education. Tools for assessing menstrual hygiene management in schools. New York: UNICEF and Centre for Global Safe Water, Emory University 2013.

²² Question guides available on request from authors.

²³ Jayakaran RI. The Ten Seed Technique. People's Republic of China. World Vision, 2002.

²⁴ Connolly & Sommer (2013) Cambodia girls recommendations for facilitating menstrual hygiene management in school. Journal of Water Sanitation and Hygiene for Development. Vol 3, No. 4, doi: 10.2166/washdev.2013.168

Table 1: Summary of data collection methods and participant groups

Methods	Site 1/urban # participants	Age/range (yrs)	Sex (f/m)	Site 2/rural # participants	Age/range (yrs)	Sex (f/m)	Total participants
FGD girls in school	10	13-16	f	11	15-26	f	21
FGD girls not in school	7	16-27	f	6	19-29	f	13
FGD women (formal ²⁵ workplace)	11	24-43	f	6	25-33	f	17
FGD women (informal ²⁶ employment)	10	22-40	f	13	19-60	f	23
FGD Men	12	25-70	m	9	30-60	m	21
IDI (vulnerable girls/women ²⁷)	2	30, ?	f	1	24	f	3
KII vendor	1	?	f	1	28	f	2
KII employer	1	?	f	1	41	f	2
KII teacher	2	26,32	f	2	32, 25	f	4
KII health worker	1	37	f	1	?	m	2
KII leader	1	52	f	2	?	m	3
Total participants	58			52			110
Observations of WASH facilities ²⁸	2			2			4
Documentation of availability and cost of sanitary products ²⁹	6			6			12

Sampling: Purposive sampling³⁰ via partner organisation networks was used in each study site to facilitate recruitment of pre-specified participant groups. All FGDs were sex-segregated with efforts made to ensure homogeneity of socio-economic status, community hierarchy and age. However, while local research teams were given written guidelines to support the community engagement and recruitment process, it was very difficult to control for the participants who turned up on a particular day.

In Port Moresby, a consecutive convenience sample³⁰ of shops judged as likely to sell sanitary products and located in key areas of the city was taken for the purpose of documenting availability

²⁵ defined as work places with fixed hours such as office environments, factories etc.

²⁶ defined as less structured work places where women have more control over their work hours (e.g. selling food in market places or undertaking household responsibilities and subsistence farming in communities)

²⁷ this group was defined as including girls/women living with a disability; identifying as lesbian, bi-sexual, transgender or intersex; socio-economically disadvantaged; young mothers and young married girls; women and girls in certain professions (e.g. sex work); and women and girls of certain ethnic background.

²⁸ These observations occurred alongside KIIs with teachers and employers

²⁹ These observations form part of the KII with vendors of sanitary products, but also occurred independent of this to allow review of a larger number of shops.

³⁰ Etikan I, Abubakar Musa S, Alkassim R. Comparison of Convenience Sampling and Purposive Sampling. American Journal of Theoretical and Applied Statistics. Vol. 5, No. 1, 2016, pp. 1-4. doi: 10.11648/j.ajtas.20160501.11

and cost of commercial sanitary products. It was not possible to survey a large number of shops due to the size of the city and organisational security constraints. Similarly, convenience sampling was used in the rural research site in North Bougainville (the northern district of ARB) where we surveyed the canteen in the school where the research was conducted, as well as five shops selling sanitary products in Buka, the capital of the ARB. Buka is located approximately 40 minutes by car and five minutes by boat from the rural research site. Where consent was given, WASH facilities were assessed in the sampled school and workplace in each site.

Data collection and analysis: FGDs and interviews were conducted and documented in Tok Pisin by members of the local research team. Discussions were digitally recorded with the permission of participants; parental/carer consent was also obtained for all adolescent girls attending school. Wherever possible, one member of the local research team was designated to translate discussions as they occurred for one of the international consultants; this enabled the consultants to follow the discussion, and determine interesting discussion points to probe or add to subsequent FGDs or interviews and also take notes in English. The team discussed the English and Tok Pisin notes at the end of each day, enabling a more nuanced/cultural interpretation of the data.

Preliminary data analysis took place during fieldwork. Using an inductive approach, a coding framework was developed and refined, and systematically applied to the data by the two international consultants. These codes were then organised according to overarching themes, which help provide a structure for communication of findings. Findings were validated by the local research team. Formal data analysis (applying the same coding framework developed during the field work) took place once the Tok Pisin voice recordings had been transcribed and translated into English, using QSR Nvivo (Version 11), a qualitative data management and analysis program (QRS International PTY Ltd, Melbourne, Australia). Quantitative data (assessments of WASH facilities and scoping of menstrual hygiene products) were summarised in a narrative format.

Limitations: Short data collection timeframes impacted on the number and breadth of consultations that could be performed. Qualitative data collection did not occur to the point of 'saturation' and a degree of sampling bias is associated with convenience sampling – especially when this is driven by local staff. However, studies such as this are an expensive undertaking and a pragmatic approach is always necessary to balance the need for strong research with financial realities.

While every effort was made to include participants from similar age groups in each FGD, this proved challenging and there was consequently a broad age range in the FGDs with men, women and adolescent girls (Table 1). This may have impacted on participants' desire to openly respond to questions, particularly for the younger girls. The facilitators were aware of these age gaps and made considerable efforts to make every participant feel at ease.

Cultural and individual differences both within communities and across geographic locations (urban versus rural) should be acknowledged, and findings should therefore be considered in context and not interpreted as being representative of the population as a whole. In particular, it is important to highlight the cultural diversity within PNG, and acknowledge that cultural norms and practices related to MHM are likely to vary considerably throughout the country. During data collection it became evident that the choice of Port Moresby as the urban study site allowed for inclusion of a variety of participants from across PNG, providing insight into the cultural diversity of MHM practices from different parts of the country.

5. Findings

This section describes the findings of the study in PNG. Key challenges and impacts related to MHM are summarised in yellow text boxes throughout the report.

Menstruation related knowledge, attitudes, beliefs and behavioural restrictions

i) Knowledge

In PNG, menarche is commonly understood as a normal process and one that signals the transition from girl to woman. It is also seen as a time when girls start to take on the roles and responsibilities of adulthood.

“I think once the women experience the first menstruation they expect her to be a women in the society to do household jobs and gardening” (FGD Women in formal employment; rural).

Some of the male participants also noted that menarche is a time when girls are able to take on the “duties of an adult”, including sexual intercourse and marriage.

“When I hear the word menstruation, I know that a girl or woman is bleeding and I know that she is now ready for marriage” (FGD Men; rural).

“She is grown up and she is able to have sex” (FGD Men; rural).

The level of knowledge around menstruation varied considerably within and across the groups sampled. Younger female participants in particular had some understanding of the biological processes associated with menstruation, compared with older women whose knowledge was primarily around management of menstruation rather than the specific physiological details.

“Menstruation occurs when the ovaries produces eggs and when the eggs don’t fertilise with the sperm, the eggs flow out as blood” (FGD Girls in school; rural).

However, not all adolescents had a detailed understanding of the physiology behind menstruation. For many participants, menstrual blood was primarily perceived as a waste product.

“When our mothers give birth to us, the waste remains in our bodies until the appropriate age when we menstruate, the waste blood comes out” (FGD Girls in school; rural).

Some of the male participants understood the biology of menstruation and even those with limited knowledge highlighted the importance of understanding menstruation in order to be supportive and empathetic toward their menstruating partners and daughters.

“It’s a must we understand the period cycle... we have to know what she’s going through to avoid some inconveniences [such as asking her to do work or laundry when she is feeling unwell]” (FGD Men; urban).

However, there was also a suggestion that men need to know whether their partner is menstruating in order to avoid ‘misunderstandings’ if women refuse sex. This is suggestive of more systemic gender inequalities- that women lack rights with regard to decision making and declining sex, but that allowances should be made if a woman refuses sex while menstruating.

“... [Y]oung people ... have some ... wild ideas... so when ... [a woman] is not ... responsive ... they might suspect ... she is seeing somebody else and these kind of thoughts... I think [a] man has to understand how a woman’s body is working so [if] she is not responsive, when she is sick, then there must be a respect. I think it is a very important point that men have to understand, otherwise... they might come with some wild ideas and start beating the woman...[C]ommunication with a husband and wife will sort of resolve this kind of misunderstanding” (FGD Men, urban).

Mothers and other female relatives such as older sisters, aunts and grandmothers are the most common source of information about menstruation, and it is considered inappropriate for fathers to provide this information to their daughters. However, female participants in urban and rural sites often stated that they were not taught about menstruation prior to experiencing their first period, and described feeling afraid, scared and embarrassed.

“Really I have no idea what menstruation was all about, because it was my first time, my mother came and saw it, and she told me you are ... like other women... .. it’s called period, monthly period” (IDI Woman with a disability; urban).

“She will be ashamed...sometimes she will be scared” (FGD Girls in school; urban).

Challenge: Many women and girls lack basic knowledge of menstruation.

Impact: Often girls do not know about menstruation when it happens for the first time, and report feeling scared, ashamed and embarrassed.

Female health workers and teachers are another source of knowledge for schoolgirls. A male health worker was attached to the rural (boarding) school, but students explained that most girls would be too “shy” to talk about menstruation with him.

Menstruation is included in the Personal Development subject at both of the urban and rural schools that were visited. However teachers acknowledged the limitations of this subject in terms of a lack of detail on managing menstruation and the challenges, such as teasing from boys, associated with mixed sex classes.

“[W]hen we go to personal development particularly on adolescence and puberty, since we have like boys ... and girls in one class, we don’t like explain ...everything in detail. But we only tell them the changes that happen upon boys and ...girls. And like when we like go to [menstruation] itself then we don’t want to explain it to girls because we have ... boys inside [the classroom]...[W]e don’t want the boys to tease the girls” (IDI Teacher; urban).

ii) Beliefs and attitudes

Participants in both rural and urban sites commonly described menstrual blood as being “dirty”, “unclean” and even harmful. The reasons behind these attitudes were simply explained as “cultural beliefs”, but both male and female participants also linked these beliefs to fears about the potential harm to men and boys associated with exposure to menstruating women or menstrual blood.

“They are dirty and you know they have a ... cultural belief. They think that you make the men ... and the male sibling in the house ... you know the food you touch makes them sick and they get older quicker and they don’t have the strength to work, you make them weak so ... they won’t be ... like physically active in doing men’s work ... that’s the belief” (IDI Health worker; urban).

“Our parents told us not to eat from the woman when they are having menstruation because they smell ...[she] must not prepare food etc.... because she is sick and her sick [menstruation] has started. Her body smells so she has to stay out. Man has to cook and prepare food for kids and after her period is over, she is free to touch or get food” (FGD Men; urban).

While traditional practices and beliefs were described as being less common in contemporary society, particularly in urban settings, some key informants suggested that menstruating women should have separate water sources from the rest of the community or should stay home from work altogether for the duration of their period.

Despite being considered a normal process, menstruation is often viewed with secrecy and a number of terms are used to describe it and disguise the word to outsiders. Some of these terms include: “sikmun” (menstruation in Tok Pisin – literally translated as moon sickness), “mun” (the moon), “tomato”, “kaikai buai” (chewing betelnut), and “having my flow”. Other more cryptic euphemisms were mentioned such as “all lain antap kam daun” (the ones at the top come down), “bearing a child with no head”, “clouds are trying to block the moon”, “sisters strike”, “Moses kam” (Moses comes), and “you’re wearing black today”. Words and phrases used to describe menstruation are not necessarily viewed as negative, but are often used in communication among female friends and relatives to avoid specific mention of the term menstruation.

Adolescent girls explained that they often feel shy discussing menstruation with their friends and are most likely to confide in their mother. It is generally considered acceptable for women to discuss menstruation with other women or for men to discuss it with their wives. However women in rural and urban sites described a preference for privacy and discretion (and hence the many euphemisms listed above) when talking about menstruation.

“Most excuses ladies keep is- I mean when they want to leave office- is they are sick. Like sometimes it’s much more private thing ... they don’t want to feel embarrassed. Or just plain they don’t want to tell their boss” (FDG Women in formal employment; rural).

Some participants acknowledged that menstruation is less “taboo” than in the past, and both men and women mentioned the importance of discussing it. However stigma is still attached to menstruation and many women and girls were wary about others knowing when they menstruating, either because of the “smell” or blood staining their clothing. Participants described feeling ashamed or embarrassed during menstruation, with some preferring to avoid work and disengage from routine community life.

“I don’t like ... sitting among people, even female too, I don’t like sitting with them, because they can really tell ... really smell ... and say sorts of things. So to avoid that from happening ... I don’t like sitting down and hanging out with them” (FDG Women in formal employment; rural).

“Its like, I will say, [being] scared of blood coming down. Sometimes ... they tell you to go and play and when you play, blood might flow down when you run ... You will stain your trousers” (FDG Girls out of school; urban).

All participant groups in the urban and rural study sites described instances of teasing and harassment of menstruating women and girls. This was recognized as a problem in schools (linked to absenteeism), workplaces and the community more broadly.

“I think in the office as well like trying to work with your male colleagues. Sometimes you will feel like they will say you stink. You would not want to go closer to them and talk to them. You want to be kept on your own” (FDG Women in formal employment; rural).

“Imagine, you’re a big girl so when the little children will see you, they will tease you so I don’t want to go and play but, like, let me stay myself first and you stay on you own” (FDG Girls out of school; urban).

“This is a challenge where girls are teased and made fun of at school and sometimes girls leave school because of the way she is being treated because of her menstruation” (FDG Women in informal employment; rural).

A lack of adequate knowledge regarding menstruation was highlighted as a contributing factor to boys teasing girls.

“Boys have never received such information. This thing we call menstruation is like a joke to the boys. They make fun of it” (IDI Health worker; rural).

Challenge: Girls and women are frequently teased or harassed when they are menstruating.

Impact: Many women and girls feel embarrassed and ashamed while menstruating and some adolescent girls miss school because of a fear of being teased.

Not all beliefs and attitudes towards menstruation are negative however. Some participants described positive emotions when experiencing their first period, mostly related to becoming a woman.

“She’s happy, she will be happy that she’s a young woman” (FGD Girls in school; urban).

In the urban site, a young woman from the Western Highlands mentioned the traditional practice of celebrating menarche³¹, the transition to womanhood and being ready for marriage. The idea of celebrating menarche was also mentioned in ARB.

“When the girls have their first menstruation ... the girl goes into a house and she’s a women now, she will go and court a man... [T]hey used to prepare a feast, the families come together and say she’s a women, put her out to the public and send her out” (FGD Girls out of school; urban).

While practices (such as celebrating menarche) may still occur in some parts of PNG, anecdotally we heard that the meaning behind the practice may differ from place to place. For example, in the context of traditionally patrilineal societies where women are viewed as ‘property’, the celebration may be associated with readiness for marriage and potential for bride price payment. Conversely, in more matrilineal societies, the menarche celebration may be more related to ‘coming of age’ and transition to womanhood.

iii) Behavioural restrictions

Participants in both rural and urban study sites cited a number of behavioural restrictions placed on menstruating women. Commonly described restrictions related to cooking, food preparation, housework and working in the garden. The main cultural beliefs underlying these restrictions relate to menstrual blood being “dirty” and menstruating women bringing bad luck and causing ill health to men and boys. These beliefs fuel the stigma, shame and embarrassment attached to menstruation.

³¹ In some parts of the Highlands of PNG, menarche is celebrated in a “women’s house” away from the community, with ceremonial foods presented at the end of her first period (Glass, Rosalind Dawn, 2011. "It's all about the blood": eating the head food: the cultural indebtedness of the North Fore. PhD thesis, James Cook University)

“When a woman has her menstruation period she is not allowed to cook or take part at all with the cooking because the fact is that the woman uses her own bear hands to clean herself and hold her blood so therefore she [is] not allowed to touch food. Because everyone in the family will eat from that food including men” (FGD Women in informal employment; urban).

“She is not allowed to go to the garden because when women who are menstruating go to the garden, pigs destroy the garden” (FGD Girls in school; rural).

“[L]ike when they [men] go for hunting, they will not kill anything, so they must keep away from the ladies” (FGD Women in formal employment; urban).

The food handling restriction was specifically mentioned in relation to “scraping the coconut”. Discussions with the local research team revealed that this practice also related to the belief that menstrual blood was unclean, and the position women sit in for this activity could result in menstrual blood contaminating the coconut.

Schoolgirls in the rural setting mentioned a restriction on eating fish and protein more generally when menstruating due to the belief that this would cause heavy bleeding. The health worker in the urban setting also suggested that in her community particular foods (such as those high in sugar) are believed to bring on menarche and should therefore be avoided by girls approaching menarche.

Men, women and adolescent girls also mentioned that menstruating women were traditionally not supposed to “sit close to men” or even “walk in front of men”. One participant in the rural site suggested that menstruating women should not even be allowed to work because of their unavoidable proximity to men.

“[W]e have a strong taboo here about menstruation where men are not allowed to stay close to women who are menstruating or even take food. When women are menstruating, the blood that comes out of their body gives out a really bad smell and especially women who are working amongst the men in the same office, it is not right due to the ... taboo towards menstruation. Therefore women who menstruate should be given time off so they can stay home and rest” (IDI Female employer; rural).

Indeed, in some parts of PNG, traditional practice required women and girls to stay in completely separate houses from men for the duration of their monthly period. This was mentioned by a young woman from the Highlands.

“[A]ccording to custom and ways of our ancestors ... you will stay in the house ... [when] you have menstruation. They will put you in the house, you will not hold food, you will not cook [or] come outside and see the sun, you will stay in the house. House only, unless the elderly and others came back again and they will say, now it’s time to put her out” (FGD Girls out of school; urban).

Similarly, a female participant from East Sepik Province commented on the practice of women not leaving their house during menstruation.

“[W]hen they see their period, they don’t come out of the house, they stay in there, they don’t cook, and they don’t clean” (FGD Women in formal employment; urban).

Challenge: Pervasive beliefs and attitudes that menstrual blood is “dirty” and “unhealthy” translate to social norms around menstruation that are secretive and sometimes harmful.

Impact: These attitudes and beliefs negatively impact on the emotional and psychosocial wellbeing of women and girls and may contribute to unwelcome behavioural restrictions.

Men (urban and rural) stated that women were not allowed to have sexual intercourse while menstruating, and this was also mentioned by a woman in the urban site (originating from Enga Province). The reasons for this varied, some men perceived sex with a menstruating woman as harmful, whereas others believed a woman was at higher risk of becoming pregnant while menstruating.

“It is important for men to know about menstruation because custom forbids men to have sex when women are menstruating If they do their [the men’s] physical appearance will show that they look unwell or sick. Their skin will look dusty therefore it is important for young men to know so that they don’t destroy their physical appearance” (FGD Men; rural).

“When she is menstruating, she also has the tendency to get pregnant therefore it is a taboo for men to sleep with women when they are having their periods” (FGD Men; rural).

Behaviour restrictions were viewed both positively and negatively by the study participants, and in many cases were seen simply as part of the traditional culture or customs. Some women chose to avoid specific activities when they were menstruating such as doing the laundry and cooking, viewing it as a break from housework. Others stated that being prevented from undertaking certain tasks was “waste of time” and could be incredibly “boring”.

While behavioural restrictions were prevalent in both study sites, participants agreed that generally these traditional practices (behavioural restrictions) are less rigidly observed or upheld than in the past.

“In the past it used to be a taboo for women who are having their periods to cook or do house work but now this has changed a lot and women nowadays do housework and cook food” (FGD Girls out of school; rural).

Menstrual hygiene management practices

i) Managing menstrual bleeding: materials, products and preferences

Availability and affordability of commercial products

Sanitary pads are the most common commercial product for MHM available in PNG. Supermarkets, mixed businesses and pharmacies in Port Moresby also sold a range of tampons however none were observed in the shops surveyed in ARB.

A substantial range of commercial sanitary pads were available in both study sites including cheaper and poor quality brands such as *Softex* and *Hers* as well as more reputable brands including *Stayfree*, *Kotex* and *Carefree*. It is interesting to note that a recent investigation by the Indonesian Consumers Foundation (YLKI) found that the majority of sanitary pads used in Indonesia (including *Hers* and *Softex* which are widely sold in PNG) contain chlorine and can cause skin irritation;³² irritation and rashes caused by sanitary pads was mentioned by several participants.

In Port Moresby there were more than 20 different brands of menstrual hygiene products. The majority of sanitary products were manufactured in Thailand, Indonesia and the Philippines;

³² <http://www.thejakartapost.com/news/2015/07/07/all-sanitary-pads-indonesia-contain-chlorine-yлки.html>

however stocked products came from 11 other countries including those as far afield as Germany, and Canada. Prices ranged significantly from PGK 2 for a pack of ten Hers pads in a small mixed business to PGK 22.95 for 20 Stayfree ultrathin super pads in a pharmacy. The most commonly stocked brands were *Kotex* (including *U-Kotex*), *Stayfree* and *Carefree*. The price of *Kotex* products ranged from PGK 3.60 for 16 liners to PGK 11.95 for 16 tampons. Pharmacies were noted to sell products at considerably higher prices than mixed businesses or supermarkets.

In addition, several women in Port Moresby mentioned using another brand of sanitary pad not available through retail outlets. This product, called 'Angel's Secret' is distributed through J.M. Ocean Avenue via a pyramid marketing scheme, and packs of 10 (daytime pads) were selling for PGK 20. While women reported the product to be very absorbent, the product is being marketed alongside misleading and deceptive claims, such as preventing and curing cervical cancer and other gynaecological problems.³³

Sanitary pads were not available in the school in Port Moresby, and teachers described sending girls home if they were unprepared for their period.

"[T]hose girls if they have their ... period during the day, in the school exactly when they are in the class, then we don't keep them back in the class, we just send them to go home, because there's no pad..." (KII Teachers; urban).

In contrast, the school canteen in the rural study site in North Bougainville sold two types of menstrual hygiene products, *Angel lady* and *Protex*, both at a cost of PGK 4.00 for 10 pads, a higher price than comparable products in Buka. The shopkeeper at the school mentioned that *Angel* pads were consistently more popular with the local customers and that although *Protex* pads still sold out quickly, they were not well liked by consumers. Shops in Buka stocked 13 different brands of sanitary products with the Indonesian brand *Protex* being the most common. The majority of products available were manufactured in Thailand or Indonesia. Prices range from PGK 2.30 for 10 *Hers Protex* pads in a supermarket to PGK 27.75 for 20 *Stayfree* pads in a pharmacy.

Participants in both study sites held mixed views on the affordability of sanitary products. Some women and girls stated that the cost was not prohibitive, however others described menstrual products as "expensive" and more affordable for "working women" (women in paid employment).

"Most Papua New Guinea women cannot afford pads" (FGD Women in informal work; urban).

"I recommend the expensive [better quality pads] to the customers...and if they come and compare the prices ... the ladies, especially mothers ... they go for the cheap ones" (KII vendor; urban).



An example of the range of commercial menstrual hygiene products available in a supermarket in Port Moresby

Purchase of sanitary products appeared to be more difficult for adolescent girls and young women who were reliant on their parents, or those with limited income.

³³<http://jmoceanavenue.e-monsite.com/pages/jm-ocean-avenue-products-english/angels-secret.html#PPyUe4hbWvXbURxQ.99>

“[Most girls] they can’t afford it” (FGD Girls out of school; urban).

“Most of the times I don’t have a lot of money so the little money I have I buy pads to prepare for my periods each month. I get money from my aunt and mom and sometimes from my friends” (IDI Woman with a disability; rural).

The prohibitive cost of sanitary pads has specific implications for girls at the boarding school in the rural site, who have less easy access to parental financial resources. Participants from this school described using reusable materials when they were unable to afford commercial products.

“If she has money she will buy it [sanitary pads] from the store and if she does not have any money she will use laplaps [local cloth used primarily as clothing for women] or napkins” (FGD Girls in school; rural)

In each of the stores surveyed in Port Moresby menstrual hygiene products were located on shelves rather than behind the counter, meaning that customers could avoid any embarrassment associated with asking directly for a product. The stores in Buka had sanitary products stored on the shelf as well, however in the school canteen menstrual products were located behind the counter. According to the shopkeeper, schoolgirls were sometimes embarrassed or shy to purchase products from the canteen for this reason, and the shopkeeper would often wrap the pads in newspaper to maintain privacy.

Although all shops surveyed had both male and female staff, some participants in both urban and rural sites described feeling shy and embarrassed when purchasing sanitary products from male shopkeepers.

“Sometimes where there is only one shop keeper and there is the male. You will always feel embarrassed. I mean all the males might be in shop all males and you are trying to buy that and then like whispering to one another. You will feel embarrassed” (FGD Women in formal employment; rural).

The reliability of product supply was raised as a challenge in the urban site but was not identified in the school canteen in North Bougainville.

“[W]e do face shortages from time to time with the shipping and then sitting at the wharf and ...IRC [Internal Revenue Commission] having its own customs clearance and yeah we do have ... short, nil stock, then after we get clearance and what from there, then we get the stock in. Yeah so it’s a bit of an issue with the IRC that clearance and all that, from time to time” (KII Vendor; urban).

Use of non-commercial materials for menstrual hygiene management

Women and girls in both study sites report using a variety of other absorbent materials to manage their menstruation. These include: pieces of laplap, toilet paper, cloth nappies, rags, gauze, towels and newspaper. If these materials were not available, some participants described wearing black clothes or extra layers of clothes to hide any stains.

One woman from the rural site also mentioned that members of her community had used “leaves of mustard” in the past. One woman in Port Moresby and one in North Bougainville stated that they would stay near the river or the sea and wash frequently to manage their bleeding instead of using any absorbent materials.

“When I have my periods I wash frequently. I don’t use nappies. If I have no money to buy pads I don’t bother. I stay naked with just a laplap around my body and I wash frequently” (FGD Women in informal employment; rural).

Price was cited as a major reason for use of non-commercial materials. Adolescent girls, women in the villages and women who were not working were specifically highlighted as facing significant barriers related to affordability.

“Some use towel, laplaps and pieces of rags. If some cannot afford pads then they use rags or nappies. Some especially the younger women use newspaper and dispose it afterwards” (FGD Women in informal employment; rural).

For some young girls, not being able to afford sanitary pads was seen as a barrier to education. This was a particular challenge in the rural school, where all students were boarders and many would only return home to their villages during the school holidays, and may not have access to parental (financial) resources. The school canteen sold sanitary pads, however girls could not always afford to buy them.

“There are some with the attitude of just ... sleeping in the dormitories not attending classes. Maybe because they can’t afford to buy the pads in the canteen. So they just stay in the dormitories” (KII Teachers; rural).

The healthcare worker working at the school in North Bougainville stated that he provided students who could not afford commercial sanitary pads with a sterile dressing product called *Combine*.

Women and girls at both sites reported feeling anxious, ashamed and embarrassed if unable to manage their menstrual flow effectively. Many described feeling scared to be around other people, to sit down and even to walk around for fear of leakage. Some participants also described wearing black clothes to prevent stains being visible. This fear of leakage was perceived as a barrier to attending school.

“If, it’s like, your flow comes very heavy, it comes very heavy, it’s like, you will not want to go to school ... You will be scared that, it will stain your clothes, so you will stay home (FGD Girls out of school; urban).

Challenge: Many women and girls lack access to effective and affordable menstrual hygiene materials primarily due to cost. This is particularly true for young women and adolescent girls, vulnerable women with no income, and women and girls living in remote villages.

Impact: Lack of access to effective menstrual hygiene materials causes shame, anxiety and embarrassment among women and girls due to fear of leakage, impacting on school attendance and participation in education.

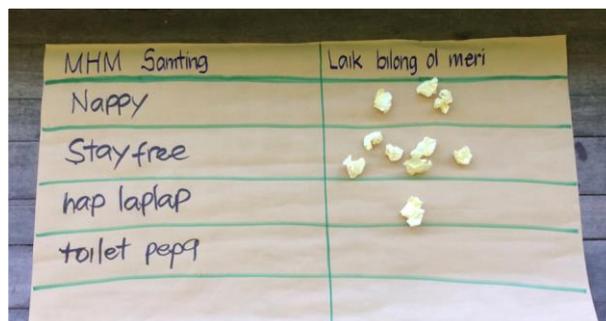
Teachers in North Bougainville also highlighted the impact that this anxiety and embarrassment had on the ability of students to concentrate in classes.

“You will see them that they will hesitate to stand and sometimes when they feel that their ... clothes is being stained. Like these thing will be disturbing them. So they won’t be concentrating” (KII Teacher; rural).

Product preference

Women and adolescent girls in both urban and rural sites tended to prefer commercial over re-usable materials (such as rags). The common reasons for this preference were that: pads are more absorbent, they were easier to dispose of, they do not need to be washed, they are more comfortable, they help manage the smell associated with menstrual blood, and are more “healthy” than using rags or lap laps.

To indicate preference (if money was not an issue), female FGD participants were instructed in use of the Ten Seed Technique.²³ They were given ten stones or seeds and asked to distribute these according to perceptions of preference for commonly used commercial and re-usable absorbent materials. Findings from the FGD with adolescent girls out of school in North Bougainville are provided as an example.



Preference for menstrual hygiene management materials as indicated by adolescent girls not in school in North Bougainville

In reality, some girls and women use reusable products such as laplaps, rags and cloth nappies/napkins. Reasons for this primarily related to the cost of commercial products although one woman mentioned her experience of irritation caused by pads and another described a fear of the negative health impacts of disposable pads.

“I came across some women who prefer using traditional materials because they think that using this pads might cause some health effects. So they still prefer napkins” (FGD Women in formal employment; rural).

ii) Changing, washing and disposal of MHM materials

Practices related to changing, washing and disposing of MHM materials varied between individual women and girls, however a number of key challenges were obvious across both study sites.

Women and adolescent girls in urban and rural sites described changing their menstrual hygiene materials approximately three or four times a day, most commonly in the toilet or shower room in their home, workplace or school. Young women in the rural site also mentioned changing their MHM materials outdoors in the bush or “among the flowers”.

Lack of an appropriate place to change absorbent materials was a significant challenge for many women and girls. Particularly in the rural site, many women reported not being able to change their menstrual hygiene materials at all in the workplace and would instead wait until they got home, often resulting in high levels of discomfort.

“I do a lot of field work so when we are out in the field, it’s really difficult. Sometimes I can stay the whole day with one pad until I go back home and I will change ... So women who are out in the field, like working in the rural community, collecting data or surveying in remote places. That’s difficult when you work with men as well” (FGD Women in formal employment; rural).

“Here in the market we sit from morning till the afternoon without changing. Some women go in and out to change more often- for us the village is just nearby and whenever we feel like changing, we go home and change and come back to the market. We wash

two to three times a day. For some you can clearly tell if they are sitting at the market the whole day because the smell starts to come out” (FGD Women in informal employment; rural).

The toilet facilities at the schools in Port Moresby and North Bougainville did not have adequate levels of privacy or cleanliness and were often non-functional (discussed in more detail in section iii). In particular, this was a significant problem for schoolgirls in the urban study site, where teachers indicated that inadequate toilet facilities and an ongoing lack of running water (and subsequent inability to change materials at school) result in girls missing school during menstruation.

[I]t affects the learning too ... we don't have the [working] toilet here for them ... to attend the lesson and then come out during recess or lunch- because we ladies we cannot use the same modes for a day... [A]t the same ... we are in Port Moresby, the place is very hot. We can pollute the whole class [referring to odour] so it's like they never come back... like when I send them today they will stay home until tomorrow and they will not come back to the lesson until when they are finish from their... period. Because ... the water is not running, they can't get themselves washed and change and then feel comfortable to ... continue with their lessons ... it's now about I think two years we are having problem with water” (KII Teachers; urban).

A lack of sex-segregated and private places to change absorbent materials was identified as a barrier to effective MHM. Adolescent girls in Port Moresby reported using changing facilities at night to avoid being seen by other people. Women in North Bougainville cited feeling uncomfortable at having to use the same facilities as men, with specific mention of male colleagues commenting on how often they used the toilets and women having to ensure that the toilets remained free of blood stains in case others saw and made negative comments.

While many women and girls highlighted the need for improved privacy for managing their menstruation, most suggested that safety was not a significant issue for them. One woman in Port Moresby did however highlight the challenges of safety specifically for adolescent girls leaving school due to menstruation.

“For student, if, if a girl is at [school name] secondary, she needs to come to the bus stop, it's a fair bit from the bus stop so safety is one... two it depends on her situation, or how she is flowing, if she saw heavy, how she is going to get home... It depends on their distance to school to home. In the village will be walking... she's... not safe” (FGD Women in formal employment; urban).

Unfortunately, neither the path to the school toilet block nor the height of the handwashing stations would have been accessible to students with a physical disability in either school. The challenge in accessing toilet facilities for those using a wheelchair was highlighted in one of the in-depth interviews. One woman described having to ask two male co-workers to lift her and her chair into the workplace bathroom if she needed to empty her catheter bag. She explained that during menstruation she would always wear two sanitary pads and not change while at work, as if she wanted to do this she would need assistance transferring on and off the toilet.

“The loo itself is not accessible so what I do is I usually double the pads and [when] I come here [workplace] I don't change, I just go back home [at end of the day] and I change.” (PNG: IDI, woman with disability, urban).

Non-commercial absorbent materials such as lappals and cloth nappies were often washed, hung out to dry and then reused. The sea was commonly cited as a place for washing reusable MHM materials in North Bougainville, and rivers were mentioned in Port Moresby. Most women and girls who use reusable products reported hanging them away from public washing lines and hiding them

under other items of clothing. Reusable materials were sometimes dried inside away from direct sunlight. A lack of an appropriate place to hang out reusable MHM materials was recognised as a problem in the rural school.

“It’s too public and also there should be a place where there’s direct sunlight and not accessible to anyone. Like it’s only for girls no one else. I think with hanging the used cloths it can start talking, other girls can tease. It’s a public clothes line so it’s better to have a secret area for those” (KII Teachers; rural).

Some adolescent girls who use laplaps or cloth nappies reported that they do not reuse them but prefer to throw them out after one use. This was frequently related to the perception that menstrual blood was dirty and unpleasant to handle.

Used menstrual hygiene products were frequently described as unhealthy and unclean, linked to the belief that they could “pollute” or “spoil” the community. Disposal of commercial menstrual hygiene materials was identified as a major challenge in both the rural and urban sites. Common mechanisms for disposal included throwing used materials in pit toilets, burying them in the ground, burning them and putting them in rubbish bins.

Burning or burying MHM materials is a common method of disposal, especially in rural villages. Interestingly, some women and girls in North Bougainville reported washing and drying commercial sanitary pads before disposing of them, believing that burning pads with menstrual blood on them could produce harmful fumes.

“In the village, the best way to dispose pads is to dig holes and bury them but for some of us we just shove it in the bushes which is not the proper place to dispose such rubbish. Some push it into tinned fish cans... I keep them [used pads] at home- Later I wrap them in papers and burn them. Some wash it first and then burn them later” (FGD Women in informal employment; rural).

Many women and girls in the rural site reported disposing of used MHM materials in the sea. Some participants perceived this as a problem for both the environment and the surrounding community.

“There is no proper place to dispose their menstrual waste therefore they just throw them anywhere. Some use the sea to throw away their pads but then the tide washes it to shore where men and children wash. This is against our customs and traditions. Some men wash without realising that the sea is polluted with menstrual waste” (FGD Men; rural).

Only the formal workplace in the urban setting had a professional waste collection service for menstrual hygiene waste. Women in the rural site specifically cited having to take their used pads home for disposal. Some women stated that they use flush toilets for disposal of pads, which occasionally results in blockages. Even where rubbish bins are provided, women generally wrap pads in newspaper before disposal.

Both the urban and the rural school had rubbish bins in some toilet cubicles. These were infrequently emptied and facilities would often need to be kept clean by female teachers.

“[T]here was a drum in our girls’ toilet, they usually dispose it but the problem is with our cleaner too she’s not paid her wages and then she’s complaining a lot and you know what ... after time goes by, it becomes stinky [and] ...so teachers in charge of the toilet went, they themselves burned them up, cleaned the toilet and then they locked the toilets” (IDI Teachers; urban).

Challenge: Access to safe, private and clean facilities for changing and disposing of used menstrual hygiene materials is a challenge for many women and girls, particularly in the workplace and at school. This challenge is exacerbated for women living with a disability and those in informal employment.

Impact: Girls and women report discomfort and embarrassment at not being able to effectively manage their menstruation. A lack of adequate facilities may contribute to school absenteeism and negatively impacts on girls' education. Current disposal practices may also impact negatively on the environment.

iii) Personal hygiene practices and WASH facilities

Many women and girls emphasised the importance of bathing frequently when they are menstruating. But, private facilities for washing/bathing are uncommon, and even women working in more formal workplaces rarely reported having access to shower facilities.

Some women in the urban setting described washing in rivers. It was mentioned that menstruating women usually wash separately from the rest of the community, either washing downstream from men or using separate water sources.

In North Bougainville, adolescent girls and women commonly wash in the sea. As well as being an important aspect of personal hygiene, washing in the sea was viewed by some women as a way of reducing their menstrual flow. This was also mentioned by women in Port Moresby (referring to village life).

“My menstruation dries up quickly when I was in the sea” (FGD Women in formal employment; rural).

“In my community ... when a women is menstruating ... the day that she has the heavy menstruation, she must go and wash in the sea. When they go and wash in the sea, it sort of removes off clots, like the next day it sort of a lighter clots” (FGD Women in informal employment; urban).

Particularly in the rural setting, privacy was identified as a major issue by a number of women.

“In the village, we hide among the flowers and wash. There is no private area to wash. There are no shower rooms too. We also wash in the sea. We hang our towels and go to wash and then come back to dry ourselves even though people are staring at us” (FGD Women in informal employment; rural).

Many study participants viewed personal hygiene as an integral part of menstrual hygiene management. Washing frequently was considered an important way of caring for the body as well as reducing the likelihood that others would be aware of those who are menstruating.

“Wash ...frequently and change your pad ... look after your body... when you go around in front of men, you wash, you change and think of how you will prevent your body [from smelling] so, they won't gossip about you” (FGD Girls out of school; urban).

The WASH facility observation tool was completed in one school and one workplace in each study site. Neither of the schools surveyed satisfied WHO and UNICEF emerging JMP service-level standards for school WASH facilities.³⁴

The workplace in Port Moresby had better functioning facilities, however the rural workplace did not meet the advanced service levels for schools (global WASH standards for workplaces do not yet exist).³⁵

Below is an analysis of observed WASH facilities against JMP advanced service level standards, the human rights to water and sanitation criteria (as applied by the JMP)³⁶ and the user perceptions of women and girls across the following workplace and school settings.

Table 2: JMP global service standards, human right to water and sanitation and user perception definitions

JMP Advanced service levels of sanitation	<p>Type of toilet: Improved (flush) / Single-sex / Usable: (defined as)</p> <p>Accessible: unlocked, open</p> <p>Functional: not broken, blocked, has water to flush</p> <p>Private: lockable from inside latrine</p>
Human rights to water and sanitation criteria	<p>Availability: a sufficient number of toilets must be available and open for use</p> <p>Quality: hygienically and technically safe for use. Also cleansing (water or paper) handwashing and lighting</p> <p>Acceptability: culturally acceptable, sex-segregated, privacy and dignity. It also includes cleanliness and menstrual hygiene disposal mechanisms.</p> <p>Accessibility: accessible to everyone and physical security not threatened</p> <p>Affordability: the price of sanitation services must be affordable for all without compromising the ability to pay for other essential necessities such as food, housing etc.</p>
User satisfaction	<p>Satisfaction is integral to an individual’s decision to use available sanitation facilities. Measuring satisfaction is limited because it is a complex concept that reflects personal and social-cultural expectations. Acceptability of sanitation facilities is about socio-cultural acceptance of the technology as well as practical acceptance, such as safety, privacy, harassment and perceived cleanliness.³⁷</p>

³⁴ WHO and Unicef emerging JMP service ladders for monitoring WASH in schools in SDG’s: https://www.wssinfo.org/fileadmin/user_upload/resources/Core_questions_and_indicators_for_monitoring_WinS.pdf

³⁵ Sommer et al. Managing Menstruation in the workplace: an overlooked issue in low and middle-income countries. International Journal for Equity in Health (2016) 15:86

³⁶ The Human rights to water and sanitation principles are: Availability, Quality, Acceptability (and safety), Accessibility and Affordability. See <http://www.righttowater.info/why-the-right-to-water-and-sanitation/the-right-to-water-a-legal-obligation/the-content-of-the-rights-explained/>

³⁷ Nelson KB, Karver J, Kullman C, Graham JP (2014) User Perceptions of Shared Sanitation among Rural Households in Indonesia and Bangladesh. PLoS ONE 9(8): e103886. doi:10.1371/journal.pone.0103886

In the urban school, four flush toilets were available in a sex-segregated toilet block. However, the school did not have adequate water supply for flushing latrines- an ongoing issue for two years- and therefore none of the four toilets were functioning. Two cubicles had locks inside of the door, however one lock was broken. Even if any of the four toilets had been functioning, there would have only been one toilet available per 140 female students. The WASH facilities at this school were unclean, had relatively poor lighting and did not have a consistent supply of toilet paper or water for cleansing. Handwashing stations were available inside the toilet block, however the water supply was non-functioning and no soap was available. An open container was placed in one toilet cubicle for disposal of menstrual hygiene materials, although it did not appear to be regularly emptied. The toilet block was open to students during classes and at break times, and students were continuing to use the toilet facilities despite the lack of water supply.

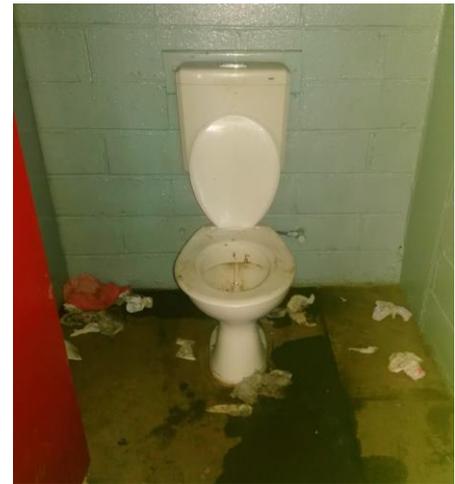


Image: when toilet and handwashing facilities are inadequate, girls and women prefer to go home to change MHM materials.

Students and teachers at the urban school were not satisfied with WASH facilities. Adolescent girls identified a number of barriers to effective MHM: having nowhere to wash and change when they were menstruating, having to hurry when they used the school toilets due to the lack of lockable doors, a lack of rubbish bins for disposal of menstrual hygiene materials and no place within the school grounds to purchase sanitary pads. Teachers interviewed felt that many adolescent girls would miss classes for a large proportion of their menstrual period every month due to inadequate WASH facilities, although it was not possible to verify this finding.

The rural school was a boarding school that had multiple sex-segregated toilet blocks on site with a total of 24 toilets for 441 female students. However, only three of these toilets were functional and, of these three toilets, two had broken locks and the third had no door at all. Each dormitory had a sex-segregated toilet block attached to it with separate shower cubicles, however due to the lack of water supply the majority of these toilet blocks were locked or non-functioning. Teachers interviewed highlighted the inadequate number of functioning toilets.

Running water was a problem because of consistent power failures to run the water pump. MHM disposal receptacles with lids were available in some stalls. Solid waste was collected frequently and burnt at a site close to the school. Handwashing stations were available inside and outside of the toilet blocks, however many were not functioning due to a lack of electricity to pump the water.

Table 3: Observed service levels for sanitation and hygiene

	Sanitation	Hygiene
School: urban <i>Assessment: Limited service level for sanitation and hygiene</i>	Improved sanitation facilities (flush) of 4 single-sex latrines (143 students per toilet) but they were not useable because there was no water to flush. Acceptability for girl students: acceptability was poor because toilets were unclean, not lockable, had no MHM disposal bins and no anal cleansing materials.	Handwashing facilities located into sex-segregated toilet block but had no water or soap.
School: rural <i>Assessment: Limited service level for sanitation and hygiene</i>	Improved sanitation facilities (flush toilets) of 24 single-sex latrines (18 students per toilet) but were not useable because no water inside latrine to flush or because of a lack of privacy (broken locks / no doors). Anal cleansing material was given out to students. Acceptability for girl students: acceptability is poor because of a lack of privacy. Potential for good acceptability as had a good number of flush toilets and bathing facilities but most were not functioning.	Handwashing facilities were available inside and outside of toilet blocks. Some had water and soap, but many had neither water nor soap
Workplace: urban No global standards exist for workplaces, but advanced service level met	One Improved toilet (flush) for 10 female staff is usable (private, functional, accessible) and sex-segregated. Advanced service level features: Accessible to all, sufficient quantity, clean, bin for MHM materials and toilet paper for anal cleansing.	Handwashing facilities with piped water and soap located inside latrine block.
Workplace: rural No global standards exist for workplaces, but advanced service level features observed	One Improved toilet (flush) for 8 female staff is usable (private, functional, accessible) but not sex-segregated. Advanced service level features: Accessible to all, sufficient quantity, clean, and toilet paper for anal cleansing. No bin for MHM materials was available.	Handwashing facilities with piped water located outside latrine block. No soap available.

Soap was provided at some stations and toilet paper was given out to the students on request at the rural school. During the FGD, the main concern raised by students was the lack of a private area to wash and change MHM materials inside the toilets.

Although the school sold sanitary pads, teachers reported that some girls would miss classes if unable to pay for MHM products.

In the urban site, the workplace had one functioning, clean and accessible flush toilet for ten female staff members. A receptacle for disposal of MHM materials was provided in the toilet cubicle and solid waste was collected approximately once a month. Handwashing stations with soap and water were available inside the bathroom, although water supply was sometimes unreliable. A shower room was available for both male and female staff, however it was located within the male bathroom facilities. Female employees were able to purchase sanitary pads directly from the workplace (a warehouse with pharmacy supplies) and could charge them to their account if they were unable to pay cash.

The workplace in North Bougainville (a small guest house) had one functional flush toilet for eight female employees. This toilet was clean and lockable from the inside, however it was not sex-segregated. No disposal facilities for MHM products were available and female staff would take their used materials home with them. The toilet was accessible to staff and could be used at any time. The female employer identified the need for a sex-segregated toilet facility, and she also suggested that one solution would be to stop women from working when they were menstruating (and that she actively recommends this).

“When my female employees have their menstruation, we tell them stay home until the menstruation stops. This is because of hygiene concerns [employer recognises that facilities are inadequate as not sex-segregated] including the strong taboo [concerns about men being in close proximity to menstruating women] we have with women and their menstruation” (IDI Female employer; rural).

This finding highlights the pervasive nature of gender inequality in PNG amongst women as well as men, and these attitudes and beliefs would need to be taken into consideration when designing any potential interventions around MHM.

iv) Pain management practices

Women and girls in both study sites commonly reported using paracetamol for management of menstrual pain.

“I cry because of the pain during menstruation ... I buy Panadol and drink it to stop the pains” (Women in informal employment; rural).

However, some women and girls described poorly controlled menstrual pain as a particular challenge related to MHM, potentially impacting on participation in daily activities and quality of life.

“My young niece doesn’t do any work and looks weak when she is having her period. She sleeps all the time and feels pain and complains a lot and she also vomits too. Sometimes she cries.” (FGD Women in informal employment; rural).

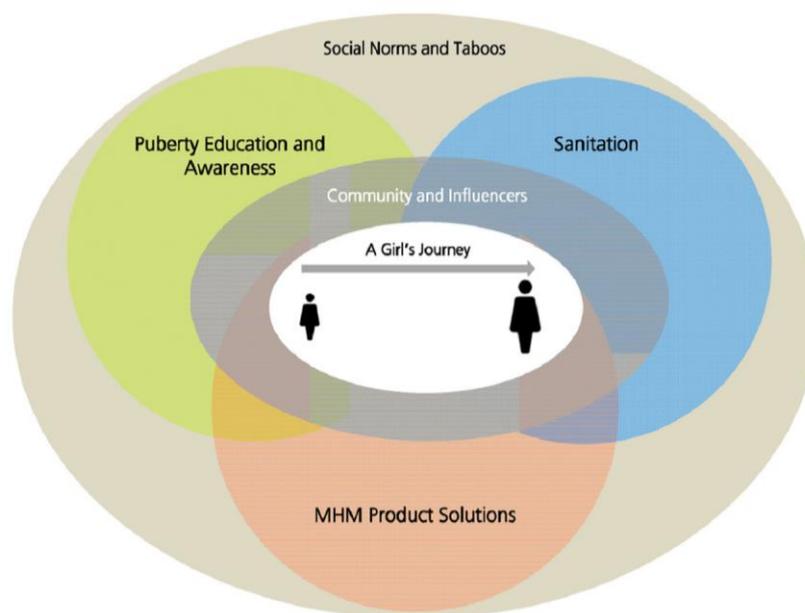
Other methods of pain relief include “noni juice”, coconut juice, use of warm compresses and rubbing lime powder on the abdomen. Lime powder was believed to help with menstrual pain because it was “strong with heat”. Anecdotally we also heard that drinks made from plants including Moringa, Periwinkle, and Hibiscus are traditionally used for management of menstrual pain.

“[W]here I come from, there’s this purple leaf plant ...they use that plant to drink and calm the pain. I don’t know the name... It’s common in my place” (Women in formal employment; rural).

Opportunities to improve women’s and girls’ ability to manage their menstruation safely and with dignity

This section presents findings from the study in the context of a substantial, recent review of the determinants and health impacts of MHM and programming responses in Sub-Saharan Africa and Asia was undertaken by FSG;³⁸ This study emphasised the need to transition from the traditional siloed response to menstrual hygiene, to one that encompasses the broad range of determinants of menstrual health. (Figure 2)

Figure 2: Comprehensive response to menstrual health



With this holistic framework in mind, opportunities to improve women’s and girls’ ability to manage their menstruation effectively and with dignity in Papua New Guinea can be summarised as follows.

i) Puberty education and awareness

Early and effective education about menstruation and reproductive health is necessary to improve understanding and create a supportive environment for women and girls. Developing evidence-based tools for communication is key to challenging social norms and taboos around menstruation that are currently barriers to effective MHM. Particular attention should be given to attitudes and beliefs that negatively impact on gender equality. School and community-based education programs would be important components of an effective communication strategy.

Schoolteachers, especially female teachers, have a key role to play in the provision of effective school-based education. The importance of separating boys and girls for puberty education was highlighted, as was the benefit of broadening the Personal Development topic currently taught in

³⁸ (FSG is a mission-driven consulting firm that aims to supporting leaders in creating large-scale, lasting social change). Geertz A, Iyer L, Kasen P, Mazzola F, Peterson K. *An Opportunity to Address Menstrual Health and Gender Equity*: FSG, 2016.

schools to also include details of effective management of menstrual health. There was an identified need for specific training for teachers to enable effective education of boys and girls about MHM.

“I think the very first thing- training. More knowledge and understanding about menstruation. A teacher should be trained by the experts on that area.” (KII Teachers; rural).

The importance of providing appropriate information to parents was also highlighted, as parents are often the primary source of knowledge about menstruation for young girls.

“Personally I would say it would be really good if they can educate parents so parents are informed and then they can ... get this information to their children, because we can't reach into all the homes? [...] We could educate the parents or the mothers coming in or fathers coming into the [clinic], so they go back and help the family at home” (KII Health worker; urban).

Health workers were identified by study participants as being an integral part of any awareness raising strategy in the community.

“I think it would be good to do awareness... in the community and the school. It would be best to engage midwives to do awareness because they are more experienced. It would be better to do awareness in primary schools because most young girls reach puberty when they are in primary schools. Most girls have their first menstruation at 13 while others see their periods at age 14 upwards so it would be very good to do it at schools and in the village” (KII Health worker; rural).

In order to facilitate shifting of negative attitudes and beliefs around MHM, effective strategies would need to include men and boys. Participants in both study sites acknowledged the need for men and boys to understand how they can support women and girls to manage their menstruation effectively.

“Teach them about respecting women and girls. Do not tease them or discriminate them. I think that if we respect women, we will not discriminate them or make fun of them when they are having their periods. We need to educate young men” (FGD Men, rural).

ii) MHM products solutions

During the FGDs, women and girls were shown examples of re-usable materials that are made and sold as income generating initiatives in other countries. These included (see image below, left to right):

- “EASY” (Goonj, India: www.goonj.org)
- AFRI-pads (AFRI-Pads, Uganda: www.afripads.com)
- Days for Girls kits (DfG, International: www.DaysforGirls.org)



Days for Girls kits and AFRI-pads were considered highly acceptable to all women and girls interviewed (although some indicated that while they would not use them themselves, they would be suited to the village setting). The primary benefits of using these reusable products were cited to be cost savings, good absorbency and the colourful material that hides stains.

“This one is really good. I mean for myself. You know you can cut out ... buying pads from your budget and save some money” (FGD Women in formal employment; rural).

An acceptable price for the Days for Girls kits varied according to the participant group, and ranged from PGK 3.00 to PGK 20.00. Participants were generally supportive of the idea of women’s groups sewing and selling reusable materials for MHM.

During the FGDs, women and girls were also shown examples of commercially available materials/products, including:

- Common, commercially available sanitary pads
- Tampons
- Menstrual cup

Participants were very familiar with the sanitary pads. Tampons were recognised and used by only a small number of women and were not generally perceived to be acceptable in the PNG context. The common view was that tampons were undesirable, uncomfortable, poorly absorbent and potentially even unsafe.

“If you have a very heavy flow, you feel uncomfortable using tampons” (FGD Women in formal employment; urban).

“For me personally, tampon is dry, too dry...for the fear that it might get stuck” (FGD Women in formal employment; urban).

“It [tampon] causes cervix cancer. When women and girls use it, it causes sores” (FGD Girls in school; rural).

None of the participants had ever seen a menstrual cup before, and the product was almost unanimously viewed as unacceptable, drawing laughs, shakes of the head and comments of “no way!” Most concerns were related to insertion and comfort, and some were worried about the potential for leakage.

With disposable sanitary pads being the most popular choice of MHM materials for the majority of participants, much could be done to broaden availability in schools and workplaces. According to recommendations from study participants, this could involve stocking pads for purchase by girls/women or providing them free of charge. During the FGDs in school, girls were asked to draw what their “ideal latrine” would look like, and in both urban and rural settings, girls included the provision of free sanitary pads in their designs. Women also identified the benefits of workplaces providing MHM products to employees, as did some of the men interviewed.

“I believe ... [the] government should supply pads to rural communities... because ... all woman must have this material with them ... they are at work or anywhere you know” (FGD Men; urban).

iii) Water, sanitation and hygiene

None of the school WASH facilities observed met global (JMP) basic service level standards, let alone the advanced service level standards of being MHM-friendly.³⁹ Toilets in schools and workplaces should be functional, clean, sex-segregated, lockable and have appropriate facilities for washing and disposal of MHM materials. These key criteria were reflected in the discussions.

“We need proper facilities for women and girls so that they have a safe a secure place to go to when they are having their periods.” (FGD Women in informal employment; urban)

During the FGDs, female participants were asked to draw what their “ideal latrine” would look like at their school, workplace or in their community. Desirable aspects of an ideal latrine included:

- Showers / a place to wash
- Rubbish bins with a lid for disposal of MHM materials
- Running water
- Doors with a lock
- Toilet paper
- Soap and sinks for washing hands
- A separate room for changing
- Mirrors
- Extra towels
- A supply of sanitary pads
- Private and secure facilities

Facilities that include the above features were recognised as an important consideration in addressing female absenteeism from school and work during menstruation.

“Sometimes there is no facilities in the... school, that’s why [when] they stain themselves [they] decide to go home. But if schools have facilities ... they go change, they can still continue [in class]. Probably it’s [where there are no] facilities that ...they have to go [home] because they already stained themselves and they can’t change” (FGD Women in formal employment; urban).

6. Discussion and recommendations

Similar to other MHM studies in low-middle income countries, adolescent girls and women in rural and urban PNG face numerous challenges that influence their ability to manage menstruation effectively, hygienically and with dignity. These challenges interact, and have the potential to negatively impact on physical and emotional health, participation at school, work and in the community, and on the environment. Such impacts can reinforce gender disparities and perpetuate inequalities. (Figure 3)

³⁹ Basic service level standards = Improved facilities which are single sex and usable at the school.

Advanced service level standards = Basic service level standards plus **acceptability** (cleanliness, MHM disposal, accessible), **availability** (whether there are any restrictions placed on toilet access), **quality** (toilet paper, lighting).

Figure 3: Summary of findings



While adolescent girls have some level of knowledge of menstruation, the majority are unprepared for menarche and consequently experience feelings of embarrassment and shame. This lack of knowledge about puberty and menstruation has broader implications, making girls vulnerable to teenage pregnancy. Mothers, female relatives and female teachers are important sources of knowledge and support around menstruation but often lack detailed and accurate information on the topic. Teachers often feel poorly equipped (in terms of resources and skills) to provide accurate and thorough information to students. While menstruation is currently taught in schools, the inclusion of both boys and girls in the same class limits the level of detail that teachers are able to provide and results in frequent teasing of girls. The content is also very focused on the biology of menstruation and lacks information on menstrual hygiene and management.

Beliefs and attitudes around menstruation can make it difficult for women and girls to manage their menstruation effectively and with dignity. The prevailing belief that menstrual blood is “dirty” and “unhealthy” negatively impacts on the emotional wellbeing of many women and girls and contributes to unwanted behaviour restrictions. The stigma and secrecy associated with

menstruation encourages secretive and sometimes unhygienic practices related to washing, drying and disposal of used MHM materials and personal hygiene.

While a broad range of commercial sanitary products are available in urban areas of PNG, quality products are less available in rural areas. Products vary considerably in price and quality, and even the cheapest brands are not affordable for many women and girls. Sanitary products are particularly unaffordable for adolescent girls, women with no or very little income, and those living in rural areas. This has a considerable impact on participation in school and employment. Many women and girls also experience a fear of leakage and staining due to inadequate access to appropriate MHM materials. This leads to distraction from school and work, and some choose to isolate themselves away from the community on days of heavy bleeding.

The WASH facilities in schools and workplaces often do not meet basic service level standards and fail to fully address the needs of menstruating girls and women. Challenges include an insufficient and unreliable water supply, non-functioning toilets, unclean and poorly maintained facilities, a lack of privacy, a shortage of appropriate places for personal hygiene and a scarcity of safe disposal mechanisms for MHM materials. These inadequacies contribute to absenteeism among menstruating school girls. Particularly in the informal sector, women report discomfort at not being able to effectively manage their menstruation while at work, potentially impacting on their full participation in income-generating activities. WASH facilities in PNG rarely meet the needs of women and girls using a wheelchair because of inadequate accessible infrastructure.

Potential solutions to improve MHM in PNG should be implemented in the context of the broad range of determinants of menstrual health. This requires:

- strengthening puberty education and awareness and challenging discriminatory beliefs and taboos;
- improving availability, affordability, and access to quality commercial products and locally made alternatives, especially in schools and workplaces; and,
- improving WASH facility standards and mechanisms for safe disposal of soiled sanitary materials.

Critically, any initiatives should be underpinned by a human rights approach, and ensure that women's and girls' voices are central to decision making about any initiatives that impact on them.

Recommendations

1. Strengthen whole of government leadership and policy commitment on supporting MHM within the National and Provincial Departments of Health and Education, and the Department for Community Development and Religion (focal point for disability)

- 1.1. Ensure national and provincial health and education policies and action plans incorporate MHM and develop appropriate monitoring mechanisms to accurately track progress, in line with the aspirational gender equality objectives outlined in PNG Government documents². (M)
- 1.2. Educate those responsible for labour-related policy (such as Occupational Health and Safety Standards) about women-specific WASH needs and the translation of evidence into policy and practice. This is essential to facilitate the improvement of WASH facilities in workplaces and to reduce the gender gap in economic activity. (S)
- 1.3. Increase cross-sectoral collaboration on MHM through stakeholder engagement, education and advocacy to take MHM beyond the WASH and education sectors. Economic empowerment, gender, disability and disaster risk reduction initiatives all need strengthening with regard to MHM. (M)

2. Improve access to high quality information about menstruation and MHM via National and Provincial Health and Education Departments, and NGOs working in the area of sexual and reproductive health and WASH.

- 2.1. Review and strengthen the menstruation components of the school curriculum (notably in the Personal Development subject) (M)

In particular:

- Ensure MHM is taught to both boys and girls, but in sex-segregated classes led by teachers of the same sex as the students;
 - Start MHM education in primary school to ensure girls are informed prior to the onset of menarche;
 - Ensure the inclusion of comprehensive information around effective management of menstruation such as products available, appropriate disposal practices and personal hygiene, including handwashing with soap
 - Promote respect for privacy and support for other students.
 - Ensure that boarding schools provide comprehensive education and support around MHM, potentially through integration into school induction programmes, specific education programmes and training of peer educators
- 2.2. Develop training resources and provide ongoing training to teachers (both male and female) on menstruation and MHM. Teachers at boarding schools should be specifically trained to provide adequate support to female students around MHM. (M)
 - 2.3. Support community-wide health communication involving men, women, boys and girls to sensitively address the potentially harmful beliefs and social norms associated with menstruation. (S)

Consideration should be given to addressing:

- Beliefs around menstrual blood being “dirty” or “unhealthy”;
 - Unwanted behavioural restrictions;
 - The impact of secrecy on women’s and girls’ ability to manage their menstruation effectively and with dignity;
 - Beliefs around washing, drying and disposal of sanitary pads.
 - The possible relationship between menstruation and Family and Sexual Violence
- 2.4. Include mothers and other female relatives in education programs at schools to improve their understanding of menstruation and MHM. Programs for fathers should also be developed to engage men with this important topic; existing health and wellness programs or male advocacy programs that encourage healthy relationships might provide an entry point. (M)

- 2.5. Develop a disability-inclusive and accessible comprehensive sexual and reproductive health curriculum that includes menstruation and MHM. This could be implemented across special schools and mainstreamed into all schools to ensure girls with disabilities receive quality information and education on menstruation and sexual and reproductive health and rights. (M)
 - 2.6. Train and support local health care workers to engage with young people and the community. Health workers have an important role to play in providing comprehensive and accurate information on mensuration, MHM and sexual and reproductive health. (M)
- 3. Improve availability, affordability, and access to quality commercial menstrual hygiene products and locally made alternatives**
- 3.1. Improve affordability of quality products through public private sector partnerships to build demand and supply of commercial sanitary products. (M)
 - 3.2. Facilitate knowledge sharing about existing approaches to making simple homemade pads and whether these local solutions could be incorporated into business ideas. (S)
 - 3.3. Pilot a local female-led livelihood project to scale up production, market-based demand and social marketing of reusable pad designs, for example Days for Girls kits. (M)
 - 3.4. Expand emergency access to sanitary pads in schools, workplaces and public toilets by selling pads 'at cost' or including pad supply in operational and maintenance budgets and routine first aid resourcing. (M)
 - 3.5. Conduct a supply chain analysis to identify pathways to increase availability of affordable and high quality sanitary pads in rural communities. (S)
- 4. Water, sanitation and hygiene facilities**
- 4.1. Develop and implement national minimum standard guidelines for MHM-friendly WASH facilities in schools in line with the WHO and UNICEF emerging JMP service-level standards for school WASH facilities. Advocate for the inclusion of improved MHM is included as a specific objective in the next version of the PNG National WASH Policy (M)
 - 4.2. Develop and implement Occupational Health and Safety standards for informal workplaces to ensure women-specific WASH needs are met, particularly safe disposal mechanisms of menstrual hygiene materials. (M)
 - 4.3. Strengthen efforts to support availability of appropriate, well-maintained and clean latrines in schools and workplaces (formal and informal). (M)
This could include:
 - Prioritising budget allocation for paying water bills to prevent restricted access to running water;
 - Promoting the use of generators where inconsistent electricity supply is a problem;
 - Considering the use of acceptable and safe alternatives to flush toilets (such as pit latrines) in cases where access to water is an ongoing issue;
 - Ensuring a reliable supply of water, soap and anal-cleansing materials including funding for the operation and maintenance of the latrines;
 - Documenting clear designation of cleaning responsibilities with appropriate consequences for lack of compliance;
 - 4.4. Implement small-scale pilot projects to test context-specific low-cost alternative and sustainable disposable systems requiring low maintenance in schools and workplaces. This could explore ways to reduce environmental impact of disposable pad use: for example new composting technologies and exploration of bio-degradable pads, eco-friendly incinerators (in settings where culturally appropriate) and chutes or sealed containers. (L)
 - 4.5. Accessibility, safety and security audits to be conducted in consultation with national Disabled People's Organisations to ensure toilets in workplaces and schools are accessible and appropriately designed for people with a range of different disabilities. In particular, women with disabilities should have a voice in this process. (M)

Annexes

Annex 1: Table of sanitary products Port Moresby

SHOP DESCRIPTION	PRODUCT*	COST (PGK)	COUNTRY OF MANUFACTURE	SEX STAFF	LOCATION IN SHOP
1. Supermarket	Space 7 Daytime (10)	2.50	Singapore	M/F	Shelf
	Softy Large (12)	2.50	United Kingdom	M/F	Shelf
	Stayfree Regular (10)	3.95	Thailand	M/F	Shelf
	Kotex Regular/Heavy (10)	3.95	Malaysia	M/F	Shelf
	Softex Hello Kitty (8)	2.20	Indonesia	M/F	Shelf
	Softex Hello Kitty (20)	5.95	Indonesia	M/F	Shelf
	Softex Maxifit (24)	5.95	Indonesia	M/F	Shelf
	Softex Maxifit Wings (24)	5.95	Indonesia	M/F	Shelf
	Hers (10)	2.50	Indonesia	M/F	Shelf
	Soft Bum Night (24)	5.95	China	M/F	Shelf
2. Mixed business	Softex (8) Hello Kitty	2.90	Indonesia	M/F	Shelf
	Softy (12)	3.90	United Kingdom	M/F	Shelf
	Softy Night X-large (10)	3.90	United Kingdom	M/F	Shelf
	Stayfree Regular (10)	4.50	Thailand	M/F	Shelf
3. Pharmacy	Black & Gold Ultra Thin (14)	9.95	China	M/F	Shelf
	Black & Gold Maxi (16)	9.95	China	M/F	Shelf
	Black & Gold Overnight (10)	9.95	China	M/F	Shelf
	Modess Ultra Thin (10)	7.95	Thailand	M/F	Shelf
	Kotex Liners (20)	3.50	Indonesia	M/F	Shelf
	Kotex Liners Longer Wider (16)	3.50	Indonesia	M/F	Shelf
	Kotex Maxi Regular/Heavy (20)	6.99	Malaysia	M/F	Shelf
	Kotex Overnight Heavy (16)	8.50	Malaysia	M/F	Shelf
	Kotex Maternity (10)		Vietnam	M/F	Shelf
	U-Kotex Super (14)	10.99	Vietnam	M/F	Shelf
	U-Kotex Regular (16)	10.99	Vietnam	M/F	Shelf
	U-Kotex Overnight (10)	10.99	Indonesia	M/F	Shelf
	U-Kotex Maternity (10)	10.99	Vietnam	M/F	Shelf
	Stayfree Dry Max Ultra Thin (14)	17.95	Thailand	M/F	Shelf
	Stayfree Ultra Thin Light (16)	15.95	Canada	M/F	Shelf
	Stayfree Ultra Thin Super (12)	13.95	Thailand	M/F	Shelf
	Stayfree Ultra Thin Regular (14)	15.95	Thailand	M/F	Shelf

	Stayfree Spirit Regular (14)	14.95	Thailand	M/F	Shelf
	Stayfree Regular (20)	17.95	Thailand	M/F	Shelf
	Stayfree Super (12)	13.95	Thailand	M/F	Shelf
	Stayfree Super (18)	17.95	Thailand	M/F	Shelf
	Stayfree Regular (14)	15.95	Thailand	M/F	Shelf
	Stayfree Maternity (10)	12.95	Thailand	M/F	Shelf
	Stayfree Ultra Thin Super (20)	22.95	Thailand	M/F	Shelf
	Whisper Regular (20)	14.99	Malaysia	M/F	Shelf
	Whisper Heavy (16)	14.99	Malaysia	M/F	Shelf
	FemFresh Liners (36)	15.99	Taiwan	M/F	Shelf
	Carefree Pro-Comfort Tampons (32)	19.95	Germany	M/F	Shelf
	Carefree Regular Tampons (32)	19.95	Germany	M/F	Shelf
	Carefree Regular Tampons (16)	14.99	Germany	M/F	Shelf
	Carefree Barely There Liners (24)	11.95	Thailand	M/F	Shelf
	Carefree Liners (20)	?	Thailand	M/F	Shelf
	Carefree Barely There Liners (42)	13.95	Thailand	M/F	Shelf
	Carefree Long Original Liners (30)	10.99	Thailand	M/F	Shelf
	Carefree Shower Fresh Liners (30)	14.95	Thailand	M/F	Shelf
	Carefree Original Unscented Liners (30)	10.99	Thailand	M/F	Shelf
4. Supermarket	Softness Panty Shield (10)	1.50	Indonesia	M/F	Shelf
	Softness Panty Shield (50)	5.95	Indonesia	M/F	Shelf
	Charm Night Wing (10)	4.50	Indonesia	M/F	Shelf
	U-Kotex Regular (16)	9.30	Vietnam	M/F	Shelf
	U-Kotex Super (14)	9.30	Vietnam	M/F	Shelf
	U-Kotex Overnight (10)	9.30	Indonesia	M/F	Shelf
	U-Kotex Maternity (10)	9.30	Vietnam	M/F	Shelf
	Hers (10)	2.00	Indonesia	M/F	Shelf
	Carefree Regular Tampons (40)	20.50	Germany	M/F	Shelf
	Carefree Regular Tampons (16)	11.50	Germany	M/F	Shelf
	Carefree Super Tampons (16)	10.90	Germany	M/F	Shelf
	Carefree Super (8) & Regular (10) Tampons	11.50	Germany	M/F	Shelf
	Carefree Liners (48)	16.21	Thailand	M/F	Shelf
	Stayfree Super (18)	14.50	Thailand	M/F	Shelf
	Stayfree Maternity (10)	11.90	Thailand	M/F	Shelf
	Stayfree All Nights (10)	13.60	China	M/F	Shelf

	Softex Maxi (24)	5.60	Indonesia	M/F	Shelf
	Softex Maxi Wing (8)	2.25	Indonesia	M/F	Shelf
5. Pharmacy	Carefree Super Tampons (16)	13.80	Germany	M/F	Shelf
	Carefree Regular Tampons (16)	12.20	Germany	M/F	Shelf
	Carefree Liners (8)	4.25	Thailand	M/F	Shelf
	Active Fit Liners (20)	5.80	Singapore	M/F	Shelf
	Active Fit Liners Non-perfumed (20)	5.80	Thailand	M/F	Shelf
	Kotex Regular Liners (20)	4.15	Indonesia	M/F	Shelf
	Kotex Liners Longer Wider (16)	4.15	Indonesia	M/F	Shelf
	Sisters Night/Heavy (9)	5.00	Philippines	M/F	Shelf
	Modess Spirit Regular (8)	6.30	Thailand	M/F	Shelf
	Modess (5)	2.80	? China	M/F	Shelf
	Modess All Night Wing (4)	7.80	China	M/F	Shelf
	Modess Maternity (7)	14.60	Thailand	M/F	Shelf
	Those Days (8)	3.50	Philippines	M/F	Shelf
	Those Days Budget (8)	2.70	Philippines	M/F	Shelf
	Stayfree Ultra Thin Regular (14)	16.90	Thailand	M/F	Shelf
	Stayfree Light Ultra Thin (16)	17.90	Canada	M/F	Shelf
	Stayfree Ultra Thin All Night (10)	18.90	Thailand	M/F	Shelf
	Stayfree Super (12)	17.55	Thailand	M/F	Shelf
6. Supermarket (not entire product range)	Charmee (12)	4.20	Philippines	M/F	Shelf
	Charmee Dry Net Wing (8)	3.40	Philippines	M/F	Shelf
	Charmee Cottony No Wing (9)	2.60	Philippines	M/F	Shelf
	Charmee Cottony Wing (9)	3.10	Philippines	M/F	Shelf
	Sisters Night/Heavy (8)	3.90	Philippines	M/F	Shelf
	Sister Day Max (8)	3.30	Philippines	M/F	Shelf
	Sisters Day Max (12)	3.70	Philippines	M/F	Shelf
	Softex Max (8)	2.35	Indonesia	M/F	Shelf
	Softex Maxi (24)	5.80	Indonesia	M/F	Shelf
	Softex Maxi Wing (24)	6.20	Indonesia	M/F	Shelf
	Kotex Night (8)	4.80	? Indonesia	M/F	Shelf
	Kotex Maxi (10)	4.10	? Indonesia	M/F	Shelf
	Kotex Maxi (20)	7.60	? Indonesia	M/F	Shelf
	Kotex Night (16)	9.15	? Indonesia	M/F	Shelf
	Kotex Slim Regular (10)	3.90	? Indonesia	M/F	Shelf
	Kotex Liners (20)	3.90	? Indonesia	M/F	Shelf

U-Kotex Regular (16)	9.85	? Indonesia	M/F	Shelf
U-Kotex Super (14)	9.85	? Indonesia	M/F	Shelf
U-Kotex Overnight (10)	9.85	? Indonesia	M/F	Shelf
U-Kotex Maternity (10)	9.85	? Indonesia	M/F	Shelf
U-Kotex Tampons Regular Slim (16)	11.95	Czech Republic	M/F	Shelf
U-Kotex Tampons Mini Slim (16)	10.50	Czech Republic	M/F	Shelf
Whisper Regular (8)	5.30	Philippines	M/F	Shelf
Whisper Wing (8)	6.20	Philippines	M/F	Shelf
Whisper Soft Cottony (8)	5.70	Philippines	M/F	Shelf
Whisper Long Heavy (8)	11.40	Philippines	M/F	Shelf
Onanoko Regular (10)		Malaysia	M/F	Shelf
Carefree Slim Light Tampons (20)	5.15	Germany	M/F	Shelf
Carefree Slim Regular Tampons (16)	10.15	Germany	M/F	Shelf

* All products are sanitary pads unless otherwise specified

Annex 2: Table of sanitary products (North Bougainville)

SHOP DESCRIPTION	PRODUCT	COST (PGK)	COUNTRY OF MANUFACTURE	SEX STAFF	LOCATION IN SHOP
1. Pharmacy	Stayfree (20 pads)	27.75	Thailand	F	Shelf
	Ultra-Thin Super (10 pads)	13.19	Vietnam	F	Shelf
	Stayfree (10 pads)	4.79	Thailand	F	Shelf
	Ultrathin Regular (14 pads)	19.20	Thailand	F	Shelf
	Stayfree (10 pads)	4.75	Thailand	F	Shelf
	Carefree (24 liners)	14.50	Thailand	F	Shelf
	Carefree (24 pads)	13.19	Thailand	F	Shelf
	Softness (8 pads)	2.75	Indonesia	F	Shelf
	Feminine (8 pads)	3.00	Indonesia	F	Shelf
	Kotex (10 pads)	13.20	Malaysia	F	Shelf
	Softness (8 pads)	2.95	Unsure	F	Shelf
	U-Kotex (10 pads)	13.19	Vietnam	F	Shelf
	Modess (7 pads)	11.82	Thailand	F	Shelf
2. Supermarket	Hers (10 pads)	2.30	Indonesia	F	Shelf
	Angel lady (10 pads)	2.60	Unsure	F	Shelf
3. Supermarket	Hers protex (8 pads)	3.00	Indonesia	F	Shelf
	Angel lady (10 pads)	2.60	Unsure	F	Shelf
	Hers (10 pads)	3.50	Indonesia	F	Shelf
4. Supermarket	Hers (10 pads)	3.80	Indonesia	F	Shelf
	Angel (10 pads)	2.80	Unsure	F	Shelf
5. Mixed business	Sunny Lily (10 pads)	4.90	Unsure	F	Shelf
	Hers (10 pads)	5.90	Indonesia	F	Shelf
	Protex Regular (10 pads)	3.90	Indonesia	F	Shelf
	Comfortable (10 pads)	4.90	China	F	Shelf
6. School canteen	Protex Maxi Wing (Hers) (10 pads)	4.00	Indonesia	F	Behind counter
	Angel lady (10 pads)	4.00	Unsure	F	Behind counter

Annex 3: Lessons learned, areas for improvement as identified by team and consultants

- Pre-testing and revision of local language versions of question guides and PICFs takes a long time in order to ensure that the translations are clear and convey the same meaning as the English versions.
- Recruitment could be done more selectively to make sure that participants are of a similar age, with the aim of ensuring all participants feel comfortable to share their opinions
- Power dynamics between participants is important to understand (and avoid if possible). Participation in group discussions is affected if a community leader is present.
- More time should be allocated to practicing the consenting process during the training. This could include a video demonstrating the consenting process and further use of role-playing.
- Dispelling myths and incorporating basic education and information at the end of participant sessions was important. Having an information sheet to handout assisted with this.
- The concept of confidentiality needs to be explored more thoroughly during the training and data collection. The meaning of confidentiality may vary in different contexts and should be adapted to the local context where appropriate.
- Where only a small group of participants are recruited (such as IDIs) appropriate selection becomes more appropriate.
- The FGD with girls out of school in the rural study site had only six participants and girls were very shy and reluctant to engage in the discussion.
- Adequate time and resources need to be allocated to mentoring, coaching and mutual learning between international and local research team members. Debriefing after each FGD, interview and at the end of each day was critical.
- Verifying findings after each discussion was useful to identify trends and findings early on and to explore them further in future discussions.