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A Qualitative Study Exploring Women and Girls' Experiences of Using Menstrual Cups in Uganda

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Abstract

Background: Previous studies show that strong taboos surrounding menstruation aggravate women and girl's ability in Uganda to handle their menstrual hygiene management (MHM) in a dignified way. Poor MHM could affect menstrual health and general well-being during menstruation. A menstrual cup (MC) is a menstrual material with potential to improve MHM and eventually menstrual health. Gaining an understanding of experiences using MCs in Uganda will add to current knowledge about menstrual health practices in similar settings.

Aim: The overall aim of the study is to explore the experiences of using MC, including acceptance, health and hygiene and its perceived impacts among girls and women in Katakwi, Kitgum and Gulu in Uganda.

Method: Participants were recruited through purposive sampling. Fifteen semi-structured interviews were conducted with a mix of identified continued and discontinued MC users, aged 13-27. The data was analysed at the manifest level, using qualitative content analysis.

Results: The identified categories were: Using MC gets easier with increased experience; Privacy is important to feel comfortable when changing and storing the MC; Knowing how to keep hygienic practices when using MC; Using MC can make it easier to hide an ongoing menstruation; Stopped using MC due to lack of motivation and losing MC; Receiving emotional support from entrusted females and rumours from the community and Ambivalence in sharing experiences of using MC.

Conclusion and implications: MC was an accepted and useful menstrual material. Using MC could improve general well-being among girls and women, increase control over their own body and enhance their status during menstruation. However, regular MC use was uncommon. Challenges included ensuring sufficient availability of MCs, sufficient privacy to handle hygiene, provision of technical and emotional support to use MCs and tackling prevailing norms surrounding menstruation. Future studies could further examine existing safe menstrual hygiene management practices in poor resource settings, examine possible structural challenges that might affect motivation to use MC and examine the effects of empowerment when using MC.

Acronyms

NGO	Non-Governmental Organisation
MC	Menstrual Cup
MCIFUS	Menstrual Cup Interventions Follow Up Study
MHM	Menstrual Hygiene Management
MUST	Mbarara University of Science and Technology
SSA	Sub-Saharan Africa
URCS	Uganda Red Cross Society

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1. Introduction

The Republic of Uganda is a landlocked country in East Africa. Uganda has approximately 34,6 million inhabitants, 7,5 million people live in urban areas with 1,5 million in the capital Kampala. Uganda is culturally and ethnically diverse with numerous spoken languages. English is the official language. The biggest ethnic population Baganda represents 16,5 % of the total population, and most common religions are Catholic and Anglican (around 39% and 32% of total population)(Uganda Bureau of Statistics 2016). Uganda is classified by the World Bank as a low-income country (The World Bank 2015).

Menstruation is a natural process of the reproductive cycle, experienced by 26% of the global population (House et al. 2012; Phillips-Howard et al. 2015). Yet, previous research show that strong taboos surrounding menstruation aggravate women and girls' ability in Uganda and around the world to handle their menstrual health in a dignified way (Sommer et al. 2016; Mason et al. 2013; McMahon et al. 2011). Menstrual hygiene management (MHM) is a comprehensive term describing the requirements to properly handle menstruation: using menstrual materials to collect or absorb menstrual discharge, access to a safe space to change materials, using soap and water to keep hand- and material hygiene and adequate disposal of materials (Sommer et al. 2012; Hennegan et al. 2016). Studies from Uganda show a culture of silence surrounding menstruation (Boosey 2013; Kirk & Sommer 2006), lack of adequate MHM facilities in schools (Boosey et al. 2014; Crofts & Fisher 2012; Tamiru et al. 2015) and feeling shame during menstruation (Hennegan et al. 2016), which compromises MHM. Using reusable or disposable sanitary pads work in some Ugandan contexts (Scott et al. 2013), but lack of money to continuously buy disposable sanitary pads and sufficient water sources and safe private places to dry reusable sanitary pads are barriers to properly use these materials (Kirk & Sommer 2006; Tamiru et al. 2015; Mason et al. 2013; Hennegan et al. 2016). A Menstrual Cup (MC) is a menstrual material with potential to improve menstrual health. This study will explore the experiences of using MCs in Uganda.

2. Background

Societies around the world have their own tacit rules, norms, myths and traditional practices around menstruation. Silence and taboos surrounding menstruation contributes to poor knowledge about MHM. Girls and women in low-and middle income countries have limited access to water, sanitation, hygiene services and menstrual materials, which affects menstrual

health (House et al. 2012; Jasper et al. 2012; Geertz et al. 2016). Menstrual health highlights menstruation as a public health issue, which "includes MHM, as well as the broader systematic factors that link menstruation with health, well-being, gender, education, empowerment and rights" (Geertz et al. 2016, p.5). Homemade menstrual materials such as tissue papers, pieces of cloth, bark and other pieces of unhygienic materials, are commonly used in low-and middle income countries, (African Population and Health Research Center 2010b; Hennegan et al. 2016; Geertz et al. 2016). Studies suggest that lack of proper menstrual materials increases exposure to transactional sex to obtain menstrual materials (Phillips-Howard et al. 2015; Oruko et al. 2015; Kirk & Sommer 2006). Scientific evidence suggests that poor MHM practices are positively related to reported symptoms of reproductive tract infections (Khanna et al. 2005; Anand et al. 2015). Using re-usable pads in poorer settings can be associated with higher risk of getting symptoms of urogenital infection than using disposable pads, which was studied in Odisha, India (Das et al. 2015). Poor MHM could possibly impact girls and women's psycho-social wellbeing. Several studies report genital irritation, discomfort and chafing when using improper menstrual materials. Concerns about visible discharge causes stress, fear, shame and social exclusion during menstruation (House et al. 2012; Hennegan et al. 2016; Winkler & Roaf 2014; Kerubo et al. 2016).

MHM practices and its impacts on menstrual health have previously been a neglected reproductive topic of investigation. Due to strong taboos, menstruation was long considered a private issue to be discussed and handled only within families (Mason et al. 2013; Sumpter & Torondel 2013; Sommer, Hirsch, et al. 2015). Menstrual health gained attention from the public health sector when narratives from low- and middle-income countries found that guidance about menstruation, sexual and reproductive health, puberty and MHM prior to menarche was limited. Limited MHM facilities and materials in schools were considered obstacles for girls to thrive and succeed in school, which contributed to gender inequality (Sommer, Hirsch, et al. 2015; United Nations 2014; Geertz et al. 2016). Studies suggested that poor MHM contribute to school absenteeism among schoolgirls (Boosey et al. 2014; Sommer, Hirsch, et al. 2015; Grant et al. 2013). As a response, the water, sanitation and hygiene sector advocated for improved sanitary facilities, provision of safe environments and increased knowledge about MHM as an effort to keep girls in school (United Nations 2014). However, the evidence of school absenteeism due to improper MHM is mixed, as some studies indicates that school attendance does not necessarily depend on the kind of menstrual material used (Oster & Thornton 2009; Phillips-Howard et al. 2016; Hennegan et al. 2016).

Implementation of menstrual health interventions targeted to prepubescent in schools and women provides a wider public health focus, which serves as an entry point to sexual and reproductive health services and education outcomes among vulnerable populations. Menstrual health awareness could increase the confidence among girls and women to take control over their own bodies, and help avoid outcomes as unwanted pregnancies and infections. Long term outcomes of increased menstrual health could challenge social norms affecting the menstruating population and combat gender inequality. However, more knowledge of how poor menstrual health affects sexual and reproductive health, development and empowerment is encouraged (Sommer, Hirsch, et al. 2015; Geertz et al. 2016; Hennegan et al. 2016).

The field of menstrual health is getting increased recognition and more research is being prioritised. Due to its increased awareness, MHM is being included in programs and national policies in Uganda (Geertz et al. 2016, p.34; Tamiru 2015, p.26). On Menstrual Hygiene Day[1] 2015, a Menstrual Hygiene Management Charter was passed in Uganda and signed by key politicians in the Ugandan Parliament together with ministries and organisations in Uganda, urging the government to make MHM a priority, particularly in schools (WASH United 2015; Government of Uganda 2015). Knowledge about current MHM initiatives and its effects is further encouraged (Geertz et al. 2016; Hennegan & Montgomery 2016).

2.1 The Menstrual Cup

The MC is a possible solution to improve menstrual health. The MC is a bell-shaped container (see Figure A), usually made with medical grade non-toxic silicone and sold by many brands. Participants in this study use Ruby Cup, a 100% medical grade silicone cup (Ruby Cup 2016). It is designed to be worn internally in the vagina (see Figure B) and collects menstrual discharge instead of absorbing it. The MC can be worn inside the body up to 12 hours, due to its material and capacity to collect menstrual discharge. To empty the discharge, the MC is removed with hands that are first cleaned with soap and clean water, emptied and rinsed in clean water before re-insertion. No soap is needed for cleaning the MC. The MC can also be re-inserted without being rinsed first, in case of limited access to clean water. To properly clean MC after each menstruation, it can be disinfected by boiling it in water, pouring boiled water over it or using sterilisation tablets (Ruby Cup 2016). Studies from high income countries show that using MCs is highly acceptable and considered a safe, comfortable and sustainable menstrual material, with

[1] The annual Menstrual Hygiene Day on May 28 was initiated by WASH United in 2014 to help break the silence and build awareness about MHM (WASH United 2015).

minimal health risks when used correctly (Steward et al. 2010; Stewart et al. 2009; Howard et al. 2011; North & Oldham 2011). Similar findings have been seen from MC studies in Kenya and South Africa (Mason et al. 2015; African Population and Health Research Center 2010a; Beksinska et al. 2015). The results from an open cluster randomised controlled pilot study among schoolgirls in rural Western Kenya suggests that using MCs in similar settings is safe: the risk of sexually transmitted infections was lower among MC or sanitary pad users, compared to traditional menstrual materials, and using MCs was associated with a lower risk of bacterial vaginosis than using sanitary pads or traditional materials (Phillips-Howard et al. 2016).

The same MC can be reused several years and is considered environmentally and economically sustainable, especially in settings where access to menstrual materials is limited due to financial constraints (African Population and Health Research Center 2010b; Beksinska et al. 2015). Disposable sanitary pads in Uganda cost between 0.70 – 1.20 USD for a pack of ten, and 8 - 10 pads are used per month among schoolgirls (Scott et al. 2013). Buying disposable pads would equal an annual cost of around 20 USD, while the MC can be purchased for around 15 USD and used over ten years (Ruby Cup 2016). However, the MC is not currently available for sell at national market in Uganda, which makes it difficult to obtain. At this moment, it can only be purchased in few selected shops.

2.2 MC interventions by WoMena

The Danish Non-Governmental Organisation (NGO) WoMena works with implementing reproductive health solutions in developing contexts and has previously supported three MC interventions in Uganda (WoMena 2015a). The first intervention/research study assessed the acceptability, sustainability and hygienic safety of using MC in Kitgum, 2012 together with Uganda Red Cross Society (URCS). Thirty-one women (beneficiaries, URCS volunteers and staff) aged 18-32 received a MC together with training on using it and practicing hygiene. Data was collected at baseline and at follow-up after 3-5 months, which included gynaecological check-ups, a structured questionnaire survey, semi-structured interviews and focused group discussions (WoMena 2015b). The drafted project report after the follow-up showed good experiences of using MC, such as increased flexibility to attend social gatherings without worrying of leakage. Difficulties inserting and removing MC was experienced in the beginning, but got simpler (Tellier et al. 2012).

WoMena conducted a controlled school-based MC trial in rural Uganda, Gulu 2013, among girls aged 12 to 18. Two schools were chosen for intervention (104 girls) and one for control (90 girls). All participants attended a training session at baseline. Data was collected at

baseline and at follow-up through semi-structured interviews, focused group discussions, a structured questionnaire survey and gynaecological check-ups. The trial was conducted in collaboration with URCS and Gulu University. After the intervention, the control group also received MCs (WoMena 2015b).

The school based intervention in Katakwi 2014 was carried out by Transcultural Psychosocial Organisation with support from DanChurchAid. WoMena and Ruby Cup provided implementation support. Teachers were trained and 60 girls aged 13-16 from four primary schools received MCs. Due to identified low socio-economic status and low standards of sanitary services, eight to 12 months' use of sterilisation tablets were provided. Baseline and follow-up data was collected through questionnaires with monthly monitoring by Transcultural Psychosocial Organisation. At follow-up, another 90 MCs were distributed (WoMena 2015b).

In 2015, WoMena started preparing a follow-up study on their three previous MC intervention sites, named "*MC interventions follow-up study – A follow-up study of menstrual cup recipients through WoMena-supported projects in Kitgum, Gulu and Katakwi*" (MCIFUS). MCIFUS used a mixed methods approach, including a structured questionnaire, semi-structured interviews, focused group discussions and a MHM facility assessment tool for schools and private homes. The overall study design for MCIFUS and data collection tools were developed by WoMena and validated in collaboration with the independent strategic partners Department of Gender and Women Studies, Institute of Interdiciplinary Training & Research, Mbarara University of Science and Technology (MUST) in Mbarara, Uganda and Global Health Unit, Rigshospitalet in Copenhagen, Denmark. The data collection tools were first developed in English and then translated to Luo and Ateso. The author of this study did not take part in developing any of the data collection tools used for MCIFUS. Data collection for MCIFUS started in November 2015 after receiving ethical approval from MUST Research Ethics Committee for the study (Appendix II) and Uganda National Council for Science and Technology (reference number HS 1929, Appendix I) and was finalised in April 2016 (WoMena 2015b). MCIFUS applied a convergent parallel design, meaning that both quantitative and qualitative methods were simultaneously prioritised during data collection and analysis (Creswell & Clark 2011). During approximately a time span of three weeks per study site, MCIFUS collected both quantitative and qualitative data. No quantitative data from MCIFUS was analysed prior to collection of the qualitative data.

The only quantitative data that has been analysed from MCIFUS so far are from Katakwi and Gulu, which a Danish Master's student analysed for her Master's thesis. A total of 100 questionnaires were used in her study, and the quantitative results showed that 94%

(n=94) of the respondents in Katakwi and Gulu still had the MC, and that 87% (n=87) were still using it one to three years after receiving it. There was a general high level of acceptance of using MC as a menstrual management method, since 75% (n=75) of the respondents did not have any negative opinions about it (Zabell 2016). Twelve questionnaires were collected in Kitgum for MCIFUS, but the results of those questionnaires have not yet been analysed.

2.3 Rationale

Two previous studies from Kenya and one from South Africa show that MC is an accepted menstrual material (Mason et al. 2015; Beksinska et al. 2015; African Population and Health Research Center 2010a). However, few studies from Sub-Saharan Africa (SSA) have focused on the overall experience of MC use beyond sex months after implementation and how it might impact menstrual health. The short-term evaluations from WoMena's three interventions suggest that late MC uptake is common, which underestimates the satisfaction after 3-5 months of use (WoMena 2015b). A follow-up beyond six months after implementation will explore potential decrease in motivation and capacity to follow appropriate practices of using MC. Preliminary results from WoMena's previous interventions suggest that women and girls experienced benefits of using the MC in Uganda, such as being able to be mobile and attend social gatherings without being afraid of leakage and embarrassment (WoMena 2015b). Previous MC studies have focused on girls or women separately, while few studies have assessed their common perspectives of using MC in the same study.

3. Aim

The overall aim of the study is to explore the experiences of using MC, including acceptance, health and hygiene and its perceived impacts among girls and women in Katakwi, Kitgum and Gulu in Uganda.

4. Methodology

4.1 Study design

This study uses only qualitative data collected during MCIFUS, consisting of semi-structured face to face interviews with girls and women. The interview guide used during the semi-structured interviews was developed by WoMena, not by the author of this study. The interview

participants are MC-receivers from one of WoMena's earlier MC interventions in three different districts in Uganda: Katakwi, Kitgum and Gulu.

4.2 Study setting

The study sites included in this study were URCS Youth Centre in Kitgum, four primary schools in Magoro sub county in Katakwi and three primary schools in Bungatira sub county in Gulu. The sites represent a mix of ethnic and religious backgrounds. Kitgum and Gulu is in Northern Uganda, where the biggest ethnic group among the participants was Acholi and Luo speaking. In Uganda the Acholi population represent 4,4 % of the total population (Uganda Bureau of Statistics 2016). Katakwi is in North-Eastern Uganda, and the ethnic population among the participants was mainly Iteso and speaking Ateso. Iteso represent 7% of the total population in Uganda (Uganda Bureau of Statistics 2016).

4.3 Study population and recruitment

The participants in this study were recruited by MCIFUS. Local Ugandan WoMena volunteers were trained to become research assistants and help with participant recruitment for MCIFUS. They were informed about MCIFUS and trained to use the data collection tools. All MCIFUS participants were purposively recruited. The inclusion criteria to be part of the study were:

- Girls/women who received a MC from one of the three previous WoMena interventions (presented in background section).
- Participated in all activities during the previous intervention (MC- and hygiene training, questionnaires at baseline and follow-up and gynaecological checks).
- Did not drop out during the previous intervention/study (WoMena 2015b).

Participants who fulfilled all above criteria participated in an information session about MCIFUS in their local language. In Katakwi and Gulu, where girls were the target group, an extra information session was carried out with their parents/caretakers. Participating in this study was entirely on a voluntary basis. After the information sessions, it was the participants' individual decision to be part of the study or not. Participants who agreed to participate had to sign an informed research consent with option to sign photo consent in case they allowed any photos taken of them (Appendix III and IV). The next step of the data collection process was for the participants to complete an interviewer administered questionnaire for MCIFUS. All quantitative data from the questionnaires will be analysed within MCIFUS, but no quantitative

data is analysed this study. When conducting the questionnaires, the participants were identified as continued and discontinued MC-users.

The interview participants in Katakwi and Kitgum were sampled by MCIFUS, not the author of this study. However, the author of this study was involved with sampling the interview participants in Gulu. The participants in this study from all three study sites were purposively sampled from identified continued and discontinued MC-users from MCIFUS questionnaire participants. To aid the selection of interview participants, openness and willingness to share was also considered during recruitment. Four continued and 11 discontinued MC-users participants were sampled to be part of this study.

4.4 Participants

Fifteen participants in total were included in this study. Four participants were girls from Katakwi who received the MC between November 2014 – March 2015. Five participants were women from Kitgum who received the MC in 2012. Six participants were girls from Gulu who received the MC in 2013. For more information, see Table A: Participant background information.

4.5 Data Collection

MCIFUS interview guide was used when conducting all interviews that are used in this study. It focused on experiences and acceptance of using MC, explored health and hygiene issues related to using MC and elements of empowerment. Six pilot interviews were conducted in the local language by WoMena research assistants to test the interview guide: two in Katakwi, two in Kitgum and two in Gulu. A seventh pilot interview was conducted in English by the author of this study in Gulu, using a translator. The pilots were transcribed directly to English by research assistants and any amendments relevant were discussed with research officers. No significant amendments were made in the interview guides for any of the study sites, except for minor language corrections.

Nine interviews in this study were conducted in local language by WoMena research assistants: four in Katakwi and five in Kitgum. Six interviews in Gulu were conducted in English by the author of this study using a translator. During the English interviews, the interviewer, participant and translator sat in a triangular shape, as it was suggested to be a good seating arrangement by previous literature (Wallin & Alhström 2006).

The data from Katakwi and Kitgum was collected in November, December 2015 and March 2016. The data collection team consisted of a study coordinator and a senior research officer from WoMena, research officers (students) from MUST, Ugandan research assistants with help from local WoMena contacts. All interviews were carried out in the local language by trained WoMena research assistants/officers. The author of this study did not participate in the data collection team in Katakwi and Kitgum.

A new data collection team collected the Gulu-data in April 2016. The team consisted of the author of this study, a Danish research officer, three Ugandan research assistants with coordination assistance from local WoMena contacts in Gulu. The interviews were carried out in English by the author of this study, using one of MCIFUS research assistants as translator. The translator had no previous experience of translating and had prior to MCIFUS never seen a MC. During training, the translator was informed about MC and received one herself. The translator was trained using translating exercises, such as reading documents in Luo and reading them out loud in English, and managed it well. The translator was trained to translate verbatim and in first-person. To gain a better understanding of the participants' environments, MHM sanitary facility assessments were made in the schools and in the homes of some participants in all study sites. These assessments are not used in the analysis of this study, but used as a reference to get a better understanding of the context.

The interviews in Katakwi and Gulu were mostly carried out during school hours, and some interviews were conducted at the participants' home. The interviews were usually conducted outdoors or inside empty rooms for best possible safety, security and privacy, away from children and other curious audience. The interviews were digitally recorded with the participants' consent and transcribed directly to English. The interviews will be cross-checked for accuracy by research assistants fluent in the relevant language (WoMena 2015b).

From Katakwi, two original interviews were lost due to recorder malfunction, and a third participant discontinued her participation. In March 2016, one of the original participants was re-interviewed and a new participant was interviewed.

A total of 15 interviews were included in this study, including one pilot interview from Gulu that was considered informative. The average length of the interviews conducted in local language was 54 minutes (32 to 82 minutes). The average length of an interview conducted with translator was 93 minutes, (77 to 102 minutes).

4.6 Ethical considerations

MCIFUS obtained study approval from Uganda National Council for Science and Technology (reference number HS 1929, Appendix I) and from MUST Research Ethics Committee (Mbarara University of Science & Technology 2016) (Appendix II). The principle of autonomy was important; all participants needed to have enough information prior to making the decision to voluntarily be part of the study. All participants who volunteered to be part of MCIFUS had to read an informed consent and sign it (Appendix III and Appendix IV) and were reminded of the option to withdraw from the study at any time. The age of majority in Uganda is 18 (United Nations 2016), and all participants below 18 needed their parental/guardians to sign their informed consents, to approve the underage participants' participation in this study (Appendix III).

Non-malevolence is important; therefore, the data is treated with confidentiality in a password protected file only accessible to a small number of people from MCIFUS. All participants are assigned a numerical code, with the original names stored in a password protected file. However, the interviewers had to be aware of their potential limitations and promises of confidentiality. To make the participants as comfortable as possible about confidentiality, the interviewers reminded them that only a small number of people from MCIFUS would be able to listen to the recordings and know what was said during the interviews. No names of the participants would be revealed and they had the option to withdraw from the study at any time. The participants gained no financial compensation to be part of the study, but where compensated for the inconvenience and time spend by being provided refreshments at interviews (WoMena 2015b).

The interviews in Katakwi and Gulu were mostly carried out during school hours, which meant that the participants were interrupted during school hours and missed classes during interviews. Considering the ethical implications of missing school hours, the interviews should have been planned to be held after school hours or at the participants' homes instead, to eliminate their disturbance in school.

Conducting interviews depends on "the human as an instrument" (Dahlgren et al. 2007, p.62). There was a potential risk of unequal power balance between participants and interviewers. The girls could perceive the local Ugandan interviewers as an authority, which might have affected the participants' way of answering. Being a white interviewer was a potential risk of power imbalance. In Gulu and Katakwi, under aged girls were interviewed about a topic that might not be common or comfortable to talk about to strangers. An interview

will affect the participants in the sense that they will share their thoughts and feelings they might not have been aware of prior to the interview.

The principle of beneficence in this study is to contribute to improve MHM in Uganda (Dahlgren et al. 2007). Regarding the principle of justice, all participants were treated equally and the benefits and burdens equitable. The author of this study signed a non-disclosure agreement (Appendix VI) to use data from MCIFUS. No separate ethical approval was needed for the author of this study to collect or analyse qualitative data from MCIFUS.

4.7 Data analysis

General data analysis of qualitative studies means reducing data to present categories by organising data through condensing and coding (Creswell 2013, p.180). To formulate the categories of the material, a qualitative content analysis was used as method for analysis per the method described by Graneheim & Lundman (2004). Qualitative content analysis is suitable for analysing unstructured documents, such as transcribed interviews (Bryman 2008).

The first step of analysis was to read through the interviews several times to get familiar with the content. The transcribed interviews were the units of analysis, as suggested by Graneheim & Lundman (2004). The transcripts were then divided into meaning units, where statements or words together have the same central meaning. The next step was to condense the meaning units, which means shortening the units without losing the central meaning of them. The author then created codes from the condensed meaning units. The codes were short meanings, events and other phenomena understood in relation to the context (Graneheim & Lundman 2004, p.107). The next step of the analysis process was to create categories with the help of the generated codes. The author created categories by manually sorting the codes in Excel. A category consisted of codes that were related to each other. All codes were sorted into categories without duplications, or falling in between categories. A category in this study answered the question “What?” and described the results at a manifest level (Graneheim & Lundman 2004). Focusing the analysis on a manifest level provides suggestions for what is working or not working when using MCs in the identified settings. The information retrieved from the manifest level could be used when planning future MC interventions in similar settings.

To get a better understanding of the interviews from Katakwi and Kitgum, the author of this study listened to the interview recordings and read descriptions about the participants, the participants’ mood, the way they talked and their surroundings during the interviews. The author saw pictures of the surroundings of the study settings in Katakwi and Kitgum, to get a

better understanding of the contexts. The author also kept a close dialogue with the research team from Katakwi and Kitgum through the whole process of this study.

5. Results

5.1 Result categories

Based on the analysis of the data, the following seven categories were identified:
Using MC gets easier with increased experience; Privacy is important to feel comfortable when changing and storing the MC; Knowing how to keep hygienic practices when using MC; Using MC can make it easier to hide an ongoing menstruation; Stopped using MC due to lack of motivation and losing MC; Receiving emotional support from entrusted females and rumours from the community and Ambivalence in sharing experiences of using MC.

Using MC gets easier with increased experience

The general interest and experience of using MC was good and participants expressed confidence in using it. Using MC was generally a comfortable experience, but it was unusual to successfully use MC at the first try. Participants had to keep trying to insert and remove the MC before getting comfortable. Initial worries of using MC was related to fear of the MC disappearing inside the body, falling out, hurting the vagina, or worry about the MC size:

> *"My first impression when I first received the cup, actually when they lectured us about the cup and when they showed us the cup, everyone was asking 'Can this cup even work? When I put on it, can I even go to the toilet and ease myself?'. Even me, I was one of the participants who asked the question for the cup. But afterwards, when I started using it, I actually felt the cup was good" (Girl 2, Gulu).*

Experiencing pain at some point when using MC was common, usually when inserting and/or removing MC. Despite feeling pain, participants were willing to keep trying and experienced that increased familiarisation of inserting/removing MC reduced the pain:

> *"I only felt pain during the first period. But now my second period, the second month I didn't feel pain. Because I found inserting, inserting became easy for me" (Girl 5, Gulu).*

With increased experience, participants gained more confidence using the MC and found new techniques to simplify their inserting/removing process by pressing the abdomen and squatting.

Privacy is important to feel comfortable when changing and storing the MC

Participants expressed some ambivalence regarding the challenges of changing MC. They usually changed it one to four times a day, or depending on their menstrual flow. Places to change MC were the latrine, toilet, bath or shelter. With increased experience, it was possible to adjust changing strategies if the current changing place was not clean or private enough. Emptying the discharge in the bush was one of those strategies.

It was important for the participants to handle menstruation in privacy. Being seen handling MC or leaving traces of discharge was a common fear:

> *" It is important for people not to see, but if people are there and you feel people are seeing you constantly, then you may not remove it [MC]" (Woman 1, Kitgum).*

Changing MC in school could make participants feel uncomfortable, due to issues as lacking sufficient privacy and limited possibilities to rinse MC. Some schools provided basins that participants could use to bring water from the tank or borehole into the bathroom to change MC. However, participants expressed that carrying a basin and soap in school could be a moment of discomfort, since that was a sign of menstruating. Having a toilet especially reserved for girls using MC could increase the sense of privacy. Being able to access a toilet in the teacher's quarter or having a friend to look out when changing MC was also helpful. The fewer people who knew the participants were handling their menstruation, the more comfortable they felt. Participants expressed feeling generally more comfortable changing MC at home, due to higher level of privacy:

> *"Because at school there's no space you can change in the morning and during the lunch break […] At home it is easy while at school a little hard [changing MC]. There's no room for going to change or check" (Girl 10, Katakwi).*

However, there were also experiences of insufficient privacy in their home settings, either because there was no bathroom door or because it was hard finding somewhere to empty MC discharge out of sight.

Participants usually kept the MC in it in its fabric bag (which was provided together with MC) and hid it among their clothes in their private suit case. Despite this, participants

expressed some worry about keeping their MC private, as they perceived a risk of others finding the MC and using it for other purposes.

Knowing how to keep hygienic practices when using MC

The participants were generally aware of their health and hygiene, and emphasised the importance of keeping their bodies, the MC, their hands and the place where they change the MC clean. Participants knew how to disinfect the MC; either by pouring boiled water over the MC, or by boiling the MC in a saucepan. In Katakwi, the participants could also use sterilisation tablets provided by WoMena. Participants expressed it as inappropriate to boil MC in a saucepan that was meant for cooking. The MC had to be boiled in a saucepan or tin can that was not used for anything else. Participants stressed the importance of handling MC in privacy, such as boiling it without any people around:

> *"If I realise that people are very many at home […] I would wash and then I put it [MC] in the bag. And then I wait when people are not there, then I remove [MC] and boil" (Girl 6, Gulu).*

Participants usually preferred changing the MC at home due better access to clean water and feeling more secure about the cleanliness of toilets or bathrooms. Participants did not experience any health issues from using the MC, but expressed some general fear of catching diseases or infections from dirty toilets or latrines. If the place to change MC was dirty, participants preferred to postpone MC-change or find somewhere else to change.

The participants were generally aware of the possible health risks of sharing MC and did not share their MC with anyone:

> *"No, I do not use the cup with anyone. Because if I have sickness or any disease and give it for some to use, that would be not caring. It is intended for the first user. You do not share" (Woman 5, Kitgum).*

Using MC can make it easier to hide an ongoing menstruation

Participants expressed that using MC could hide an ongoing menstruation. Compared to using pads or other materials, participants no longer worried about stains when using MC:

> *"Those days before the cups were given there was a lot of fear especially at school when the dress could get stained. I could feel very scared" (Girl 8, Katakwi).*

It was common to fear teasing in school due to visible stains. Participants perceived that schoolboys most commonly were the ones teasing. Participants appreciated that the MC was not visible when used, which meant they could move and play football without worry that the MC would fall out and be seen. Using MC could be a sign of cleanliness, since the discharge could be disposed without leaving traces and hides odour. Compared to pads or other materials, the MC made it easier for the participants to control their period. The MC provided better security due to more flexibility to change MC:

> *"Work has become easy to me because it is me who knows when the cup is full and when to pour it away, so it doesn't give me any fear; I just go change, wash and reinsert at the right time" (Woman 3, Kitgum).*

Due to less perceived risks of staining their clothes when using MC, participants experienced positive effects of mobility. Using MC made them more comfortable using several transportation modes, such as riding a bike and traveling long distances. The capacity of MC was somewhat doubted and in some cases, such as traveling long distances, participants used the MC with extra knickers. Being able to walk long distances was a clear improvement as they no longer had to worry about pain from their thighs chafing, like they could when they used other menstrual materials. Doing house chores was easier when they no longer feared stains using MC. Participants expressed feeling more comfortable staying longer hours in school when using MC. The MC increased their possibilities to participate in social contexts, because the MC minimised the signs of an ongoing menstruation:

> *"Like when we are together, me and my friends, we can be like telling stories and then for me I can be feeling like I'm not even doing my menstruation. So I feel free cause I know that the skirt will not get dirty" (Girl 4, Gulu).*

A few practical issues about using MC worried the participants, such as not being able to change MC on a long bus ride, fear of leakage if using MC wrongly and not having the MC nearby at the start of the period.

Participants were generally not aware if MC saved money. The participants who saved money using MC could spend it on soap, while one participant said the money was spent on tuition fees. Participants noticed that MC decreased consumption, since they no longer had to consume menstrual materials or waste soap on cleaning stained clothes anymore.

Stopped using MC due to lack of motivation and losing MC

Overall, participants experienced positive impacts of using MC and talked highly of it. However, only 4 of 15 participants were still using MC regularly. There were mixed reasons for discontinued regular MC use, such as never getting comfortable using it due to pain when inserting and/or removing during the first three months. They lost motivation during the initial stage of using MC when it takes an element of patience, practice and familiarity to feel comfortable using it:

> *"At first… The first time I tried using the cup it was… I felt good. And then after, I stopped using it. I just cleaned the cup and boiled it and put it back in the bag […]. I didn't refuse to use the cup, but only folding it like this, is very hard for me like the way you saw it. So that is why I stopped."*
> *(Girl 3, Gulu).*

Pregnancy was a reason to stop using MC, which they did not take up after their pregnancies. Not feeling motivated to use MC regularly was another reason to stop using MC, due to issues as maintaining hygiene. Losing the MC to a rat, dropping it in the toilet or misplacing it were other reasons to stop using MC. Participants who lost their MC were unaware if it was possible to replace it:

> *"Because this thing [MC], the cat likes it and other people are complaining that the rat has taken it. I don't know if they will be given new one."*
> *(Woman 4, Kitgum).*

Despite the identified reasons to not use MC, the participants expressed they had enough confidence to continue or take up MC use. The prospect of saving money could be another motivation to use MC again.

Receiving emotional support from entrusted females and rumours from the community

Participants limited their talks about menstruation to one or two family members, usually the mother or a sister. Sometimes a grandmother. None of the participants expressed comfortability talking to male family members about menstruation. The fathers were usually not involved unless the participants needed money to buy menstrual materials. Despite lack of involvement from the whole family, using MC was accepted by families.

Participants were not usually open to share about menstruation with friends, even less open sharing about MC. Talking generally about menstruation was more comfortable:

"We talk about what we go through during the periods like cramps. I feel very okay talking about such topics because I think it's good to share with other girls" (Girl 7, Katakwi).

The senior woman teacher (SWT) was mentioned as a supportive person in school. The SWT sometimes talk about issues related to puberty during assemblies for girls. Some SWTs helped in case menstrual emergency, while others encouraged MC girls on different levels. Other attentive teachers let the girls be excused from physical activities during their periods, if the teachers noticed their unwillingness to participate.

The community perception and feelings of the MC were mixed. Communities were either unaware of the existence of MC or expressed curiosity about it, while others were interested in trying it. Participants had also heard bad rumours circling in their communities about MC, saying the MC would make it difficult for women to get pregnant or that it was only meant for women who had already given birth, or feared that the MC was meant to kill Africans. However, the bad rumours did not necessarily influence the participants' individual choice to use MC, if the families allowed them to use it:

"I tried telling my family members but they were the same people who used to like, hear bad things… Hear about what those other neighbours used to say. So, they used to tell me that if you want to use it, you use it. For me, I will not use it" (Girl 1, Gulu).

Some rumours could be traced to girls who received an MC but did not like using it, who had dropped out of school:

"If it [MC] was bad, they [WoMena] would not have brought for us the cup. And some of these girls, those ones who are talking ill about the cup, are those ones who did not listen. Who did not understand the instructions. That is why even some of them dropped out of school, they don't listen. So I feel good about it [MC]" (Girl 2, Gulu).

The URCS was a potential source of support for women living in Kitgum, since URCS were part of the initial MC implementation.

Ambivalence in sharing experiences of using MC

Participants would recommend others to use MC, believing it is possible for others in Uganda to use. Despite this, the participants were not entirely comfortable raising MC awareness

themselves. Participants preferred exchanging experiences and support with other MC users, but participants did not usually know anyone nearby who used MC:

> *"For my friends, I don't know if they still use it [MC], because some of them they have gotten married. I cannot know about that, because most of the girls I got the cup with I have taken long without meeting them. And I don't really know whether they're still using the cup or not." (Girl 6, Gulu).*

It could be difficult for participants to find someone they could entrust issues about menstruation with. Participants did not generally feel comfortable sharing their personal MC experience with people they did not know, due to the perceived risk of rumours spreading:

> *"I can't [talk about MC with others]. It is hard, for example boys can start laughing at you which makes you unhappy or they might even sing for you. Maybe among girls." (Girl 9, Katakwi).*

The participants could not tell what kind of menstrual materials others use, but it was not perceived as important to use the same menstrual materials as others.

There was a reluctance towards spreading awareness of MC among the participants, due to the supply issues:

> *"It is important for me to share with people things concerning this cup. But even if I share, it is not there for them to buy" (Woman 2, Kitgum).*

The participants perceived it was difficult to access new MCs. Consequently, many participants thought it was pointless to recommend a product that was inaccessible. The participants wished for more support, information, and closer arranged follow-ups. The initial training and support provided by WoMena was usually appreciated among the participants, and many wondered if WoMena would bring more MCs to their families or friends.

6. Discussion

6.1 Discussion of results

Results indicated several benefits of using MC and it was perceived as a useful menstrual material in these settings. However, regular MC use was uncommon. The results from this study indicate that there are possibilities to use MC in these identified contexts, but more

understanding of the complexity of the participants' environment is needed to be able to ensure a successful MC implementation.

Impacts and possibilities of using MCs

Previous studies express concerns about possible cultural inappropriateness introducing MC to these specific contexts, since it involves touching the genitals, inserting the MC inside the vagina and fear of losing virginity (African Population and Health Research Center 2010a; Geertz et al. 2016; Mason et al. 2013). Thus, spouses and families would probably disapprove of MC use. Scott et al. (2013) recommended against implementing MCs in Uganda due to these perceived cultural barriers. In line with previous studies assessing MC acceptability in SSA, the results from this study did not indicate challenges due to cultural barriers among participants (Mason et al. 2015; Beksinska et al. 2015; African Population and Health Research Center 2010a). Worries and concerns about the MCs' effect on their bodies decreased with increased knowledge about their own bodies and familiarisation of using MC. Previous literature rather suggest that using traditional menstrual materials, such as cloths, is stigmatising and perceived as old fashion (Scott et al. 2013; Sommer, Ackatia-Armah, et al. 2015). This study confirms, along with previous research, that the MC is an accepted menstrual material in these settings (Mason et al. 2015; Beksinska et al. 2015; African Population and Health Research Center 2010a).

Fear of visible stains restricted mobility during menstruation (Jewitt & Ryley 2014; Crichton et al. 2013; Mason et al. 2015; McMahon et al. 2011; Mason et al. 2013). Getting the period in public could lead to humiliation and shame, which was explored in this study and several others' (Jewitt & Ryley 2014; McMahon et al. 2011; Geertz et al. 2016; Crichton et al. 2013). The school environment could be stressful to menstruating girls. Fear of teasing due to visible stains, visible pads and odour could affect their ability to concentrate and engage in school, participate in school activities and social gatherings (Mason et al. 2015; Jewitt & Ryley 2014; Boosey et al. 2014; Crichton et al. 2013; Tamiru et al. 2015; Hennegan et al. 2016). This study and Mason et al. (2015) experienced that using MC limited the risks of staining clothes, which could lead to a less stressful school environment for girls. Using MC made it easier to hide one's menstrual status and kept menstruation a private business, which was appreciated (African Population and Health Research Center 2010a; Mason et al. 2015). Results from African Population and Health Research Center (2010a) indicated less fear of social problems when using MC. Similar findings were indicated in this study. Using MC could help girls and women gain control over their own body, increase mobility and make them more inclusive in

their everyday life activities, because they are no longer limited by an ongoing menstruation. When assessing the results from a menstrual health perspective, they indicated improved general well-being. Using MC during menstruation increased control over ones' body, leading to less distress about leakage. Using MC in schools does not necessarily increase school attendance, but could decrease the distress related to menstruation during school hours and increase confidence and engagement in school. This study suggests that using MC increased the possibility to hide an ongoing menstruation, which could increase confidence, affect mobility, social relationships and possibly increase engagement in school during menstruation.

Previous literature observed insufficient access to clean water, soap, safe and clean places to handle MHM in schools (Jewitt & Ryley 2014; McMahon et al. 2011; Geertz et al. 2016; Crichton et al. 2013; Scott et al. 2013; Sommer, Ackatia-Armah, et al. 2015; Tamiru 2015; Hennegan et al. 2016). In this study, limitations in MHM facilities were noted in schools. Home settings were preferred over schools for changing MC due to familiarity, better access to private places, clean water and clean facilities. Despite limitations in MHM facilities, practicing proper hand hygiene before handling the MC was not a concern, which was also noted by Beksinska et al. (2015) and Mason et al. (2015). This study indicated an awareness of proper body, hand and MC hygiene among the participants. No MC-related health issues were expressed, with similar experiences from African Population and Health Research Center (2010a). In contrary to what Scott et al. (2013) perceived, there were no indications of sharing MCs in this study, due to the awareness among the participants of the possible hygienic risks of sharing MCs. Results indicated that sufficient privacy was the main challenge when changing and boiling MC, not lack of knowledge. Insufficient toilet facilities did not necessarily impede MC hygiene, but more studies further examining hygienic MHM practices when using MC is encouraged.

Challenges to ensure a sustainable MC implementation

The results in this and other studies indicated an overall satisfaction of and a willingness to use MC as a menstrual material (African Population and Health Research Center 2010a; Beksinska et al. 2015; Mason et al. 2015). However, regular MC use was uncommon in this study. Some MC's were lost and not replaced, which terminated those participants' MC assessments. Due to the supply issue, many who liked the MC in this study thought it was pointless to recommend it, since it was not accessible to new potential users. The lack of accessible MCs not only influenced the participants' ability to try MC as much as they themselves wanted to, but also the way they talked about it. The fact that MCs were not accessible in markets affected the

results of this study more than expected. This study contributes to further understanding of the importance of sustainability in availability and provision of MC during implementation.

MC users in this study preferred to talk to other MC users for support and sharing experience. Results indicated that MC support could be fragile if entrusted MC users got married and moved away to settle near the husband's family, which happens in Ugandan contexts (Ickes et al. 2016, p.2). Adolescent girls in Uganda have smaller networks and experience higher levels of social isolation than adolescent boys, and at age 15-19, girls' vulnerability increase due to the increased risk of getting married (Amin et al. 2013). Small networks and increased mobility among adolescents could make it difficult to maintain relationships with people who share similar experiences of using MC. There was still a perceived taboo talking about menstruation, and participants in this study as well as in Mason et al. (2015) found difficulties sharing opinions with friends. This study suggests that strong emotional support is needed when using MC, but stigma and taboos surrounding menstruation affect the willingness to share about experiences.

A few people in this study lost motivation to use MC during their first few months of trying it. Not getting familiarised using MC or ensuring its hygienic practices were identified reasons. Previous literature (Geertz et al. 2016; United Nations 2014; Oster & Thornton 2009) indicated the importance to involve girls' influencers and strengthen their reference networks to ensure sustainable MHM implementation. In Mason et al. (2015), MC implementation for schoolgirls included counselling from study nurses and peer support during six months. Additionally, they found that strong characters could influence MC uptake, when one single girl influenced a whole school to use MC. A study about MC uptake among schoolgirls in Nepal showed strong evidence of peer exposure increasing MC uptake. However, peer exposure was more effective when learning how to use MC, than affecting other girls choice to use it (Oster & Thornton 2009). This study also suggested that encouragement from a single SWT could influence schoolgirls motivation to use MC. Previous studies showed that MHM support from schools, teacher and nurses was appreciated by schoolgirls (McMahon et al. 2011; Crichton et al. 2013). However, the system of transferring teachers and SWT's in Ugandan public schools means there is always a risk that the teachers who received training move away. The literature suggested some additional strategies to ensure sustainable MHM implementation, which could possibly help MC support for girls: strengthening child-mother communication, creating health support groups and involving community health care workers (Jewitt & Ryley 2014; African Population and Health Research Center 2010b; Geertz et al. 2016). This study suggest that peer

support and strong influencers can motivate MC uptake, but more studies examining potential structural issues affecting motivation to use MC is encouraged.

Studies from SSA stated that the community was a prominent influencer of girls and women's' lives. Cultural myths about menstruation in the community reinforces knowledge and behaviour that might affect girls and women negatively (Sommer, Ackatia-Armah, et al. 2015; Tamiru et al. 2015). If the community is not supporting the use of MC, it could affect the individual decision to use it (Sommer, Ackatia-Armah, et al. 2015; Geertz et al. 2016). However, this study indicated that negative rumours and myths about menstruation from the community did not necessarily affect the individual decision to use MC. The level of involvement from the communities varied. Some had positive opinions and some negative, while some participants said their communities were not involved at all. The participants could use MC if their families accepted it, despite circling rumours in the community. Along with the findings from Mason et al (2015), this study indicated that the rumours could be traced to peers and people in the communities who were envious of using MC. However, the results indicated some restrictions in talking about menstruation. Despite experienced benefits of using MC, participants were ambivalent about sharing them to others. Rumours from community did not necessarily inflict individual choice to use MC, but could affect one's willingness to share about ones' experiences. This study contributes to further understanding of communities' power over the individuals' choice of menstrual materials.

The results from this study suggest that the MC is appreciated due to its possibility to hide menstruation. Results identified a challenge of finding sufficient privacy to handle MC and fear of rumours spreading, which is due to the prevailing taboos surrounding puberty and menstruation. The Community and Government must make an effort to promote awareness of and challenge menstruation taboos to improve menstrual health (Sommer et al. 2016; House et al. 2012). In a joint effort with civil society organisations and ministries, the Government of Uganda committed to promote MHM and increase knowledge about MHM (Government of Uganda 2015). Tackling societal taboos about menstruation is further important for a sustainable MC implementation.

6.2 Methodological discussion

The four common issues to consider to ensure trustworthiness of qualitative research findings are *credibility*, *transferability*, *dependability* and *confirmability* (Dahlgren et al. 2007; Graneheim & Lundman 2004). Credibility assess the truth value of a study (Dahlgren et al. 2007). Truth value means ensuring the study can capture what it was intended to, and limit

influences from bias, errors or misunderstandings (Creswell 2013; Dahlgren et al. 2007). This study sought to explore a deeper understanding of a personal experience, a subjective reality. A qualitative semi-structured interview was considered the best method for this purpose. The semi-structured interview guide covered important topics, while its flexibility allowed to further probe on interesting topics that emerged during the interview (Bryman 2008).

This study included participants with various ages, from various districts in Uganda who either discontinued or continued using MC, to increase credibility and provide a richer variation of the data (Graneheim & Lundman 2004). Another method to increase credibility was peer-debriefing. The study was sent to the supervisor and to other colleagues from MCIFUS (who were not involved with this current study) a few times during the writing process with provided feedback, which helped the author to evaluate the process (Dahlgren et al. 2007). The participants were purposively sampled to reach a variation between continued and discontinued MC users. However, there could be a potential volunteer bias since the participants who were willing to share their experiences were more likely to volunteer.

The author did not collect the data in Katakwi and Kitgum, which is a limitation of the credibility. The author lacks an insider's understanding of the data and the social context where the data was collected. Being involved with the data collection process in Gulu provided the author with experiences and challenges of data collection in Ugandan settings. The author gained experience of languages and cultures in Gulu, which helped the understanding of the data from Katakwi and Kitgum. By spending extensive time on getting familiar with the data, the author gained more understanding of the content of the data (Bryman 2008).

The outsiders' perspective of an interviewer could help increase credibility of this study. If the interviewer is not perceived as an expert with all answers, the interviewer could use her "cultural ignorance" (Dahlgren et al. 2007, p.79). The author of this study applied this during the interviews in Gulu, when the participants used proverbs or expressions that were common in their own languages and cultures, but unfamiliar to the interviewer. In these cases, the author of this study could ask the participants to clarify or further elaborate on these expressions. A recurrent expression from the participants was "feeling free", which the author of this study asked the participants to further elaborate on. In the cases of Kitgum and Katakwi, clarification of similar expressions could have been missed, since the interviewers were local Ugandans who understood these expressions without necessarily questioning them. This could further affect the consistency of the study.

Confirmability assess the neutrality of the study (Dahlgren et al. 2007). The research is confirmable when conclusions grounded in the data can be found (Dahlgren et al. 2007;

Graneheim & Lundman 2004). When looking at the fact that WoMena was conducting a follow-up of their own interventions, issues with credibility and confirmability could be identified. The role of the interviewer was to keep a distance from the observed phenomenon. The closeness between the interviewer and participant contributes to the interaction and is not entirely inevitable (Dahlgren et al. 2007) and being part of WoMena as an interviewer could have further contributed to this, since participants had previously established a relation to WoMena. This could have affected confirmability. There might have been intentions from the participants to focus more on the good aspects of MCs to show their appreciation, in the hopes of WoMena coming back to increase their involvement in the community. When comparing the answers from the MCIFUS questionnaire and the interview, two participants gave conflicting information. In the questionnaire, they said they still used the MC, while in the interviews it appeared they did not. This affected the sampling, which sought to look for a wider variation of discontinued and continued MC users. Despite this, the data provided a mix of negative and positive experiences of using MC, which made the data useful for the purpose of this study. There could have been instances during the interviews where the interviewers unintentionally probed for positive effects over negative effects. The interviewers had to keep reminding the participant during the interviews that negative and positive experiences were allowed, that there were no right or wrong answers and that no extra MCs would be provided. To achieve best possible neutrality, it would have been better to have an external part to conduct MCIFUS.

Transferability assess the applicability of a study (Dahlgren et al. 2007). A description of the study context, background, participants, and analysis process is provided and ultimately, is up to the reader to make an informed choice about the transferability to another context. The three settings in this study were geographically different with diverse ethnic populations from different ages, and participants were sampled from MCIFUS questionnaire participants. Another aspect of transferability is the applicability between the results from this study and the overall quantitative results of MCIFUS, since interview participants were sampled without consulting the quantitative results from MCIFUS. However, the sampling of the interview participants was not meant to be representative to the quantitative results of MCIFUS. The purpose was to analyse quantitative and qualitative data independently. The results from this study could be used as a complementary to the quantitative results of MCIFUS.

Dependability assess consistency of the study (Dahlgren et al. 2007). Issues that could affect dependability was the different data collection teams in Kitgum/Katakwi and Gulu, and that the data collection in Kitgum/Katakwi was conducted in the local language, while it was conducted in English with translator in Gulu. To minimise implications of dependability, this

study was consistent in using the same interview guide and sampling methods for all study sites. Another consistency limitation from the interviews identified from Gulu was when this author used and trained a translator, despite limited previous experience conducting interviews using a translator. During the interviews, there were some instances where the translator and participant talked back and forward to clarify interview questions, but these clarifications were not made between the translator and interviewer. This means that some information and possibilities to probe for nuances might have been lost. Conducting interviews in different languages could affect the translation of the interview guides. In Ateso and Luo, there was no word for experience and the direct translation was "what have you learnt", which made the participants in some cases answer by describing what they learnt instead of talking about their experiences (Hytti 2016).

The author of this study entered a research setting that was already in process, which limited the chances to influence the study design and creation of data collection tools. This limited the authors chances to make changes that could have better suited the purpose of this study. Instead, the aim of this study had to suit within frame of MCIFUS. Due to the composition of semi-structured interviews, there was room for the author of this study to probe or change order of questions during the interviews, to better suit the aim of this study.

6.3 Pre-understanding of the author

The author of this study is a Swedish female student researcher with limited research experience in the field of MHM. The author has previously designed and conducted semi-structured interviews for her bachelor thesis in Botswana. The author has previously visited East Africa, but this was the first time to Uganda, which meant the author had limited experience of Ugandan culture and society.

7. Conclusion and implications

The results suggested that using MC was an accepted and useful method in these settings. Using MC could increase confidence, affect mobility and social relationships during menstruation. Despite the experienced benefits of using MC, regular MC use was uncommon. Ensuring sufficient availability of MCs, sufficient privacy to practice hygiene, provision of technical and emotional support to use MCs and tackling prevailing norms surrounding menstruation are identified challenges to a sustainable MC implementation in these settings. Using MC could improve general well-being among girls and women, increase control over their own body and

enhance their status during menstruation. Future studies could further examine existing MHM practices when using MC, to increase knowledge about practicing safe hand, body and MC hygiene in poor resource settings. Furthermore, more studies examining motivation or lack of motivation to use MC could be encouraged, to gain more understanding about possible structural challenges that might affect MC use. Finally, more studies on using MC and effects on empowerment is encouraged.

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Tables

Table A: Participant background information

N *(total)*	*(15)*
District	
Kitgum	4
Gulu	6
Katakwi	5
Age *average (Total range)*	*18,6 (13 – 27)*
Kitgum (Women)	24 (21-27)
Gulu (Girls)	15,6 (14-18)
Katakwi (Girls)	16,25 (13-19)
Continued MC use	
Yes	4
No	4
No/Lost	4
No/Pregnant	2
Sometimes	1
Education	
Not finished Primary School	11
Finished Primary School	2
Dropped out	2
Ethnic group	
Acholi	9
Itesot	4
Other	2
Religion	
Catholic	11
Anglican/Protestant	4

Table B: The coding process and category development

Meaning Unit	Condensed meaning unit	Code	Category
I used it [MC] the way teacher taught us, to fold it and insert and then leave the tip outside. Like when you are in your periods, they told us to wash our hands clean then insert it while squatting and folding it. Then while removing it, your hands should be very clean again before you pull it out.	I use the MC like I was taught. During periods: wash hands clean, fold and insert it while squatting and leave the tip outside. Very clean hands when removing it	Describes using MC with focus on good hand hygiene	**Knowing how to keep hygienic practices when using MC**
I feel very happy because the cup is not like the pads. For example, when you have a heavy flow and you use pads your clothes can get stained, which makes you unhappy and it becomes hard for you to get up in amidst of people. Your only solution is to sit for a long time.	Feels happy, MC is not like pads, pads can stain during heavy flows which makes you unhappy and have to sit a long time	Feels happy MC increases her mobility compared to use of pads	**Using MC makes it easier to hide an ongoing menstruation**

Figures

Figure A

Figure A: The Ruby Cup (MC brand). Photo: Ruby Cup

Figure B

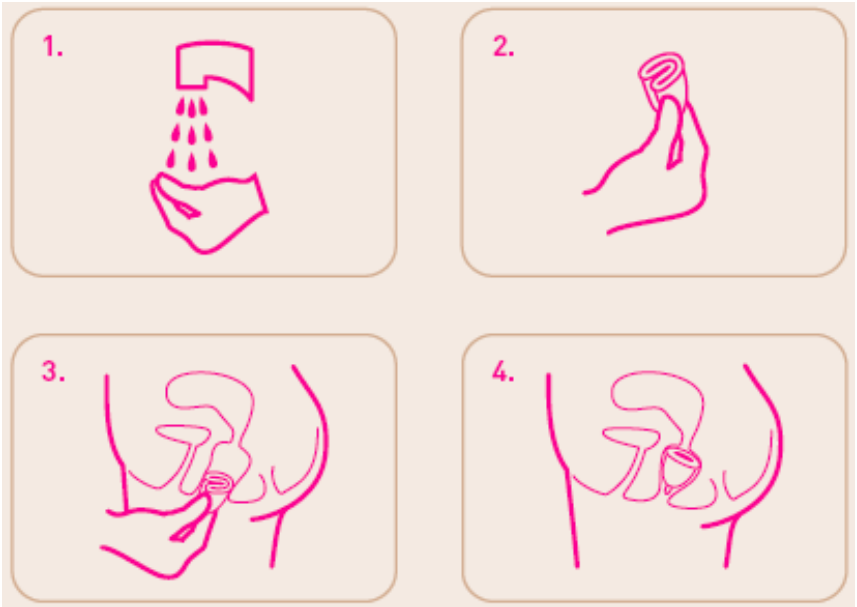
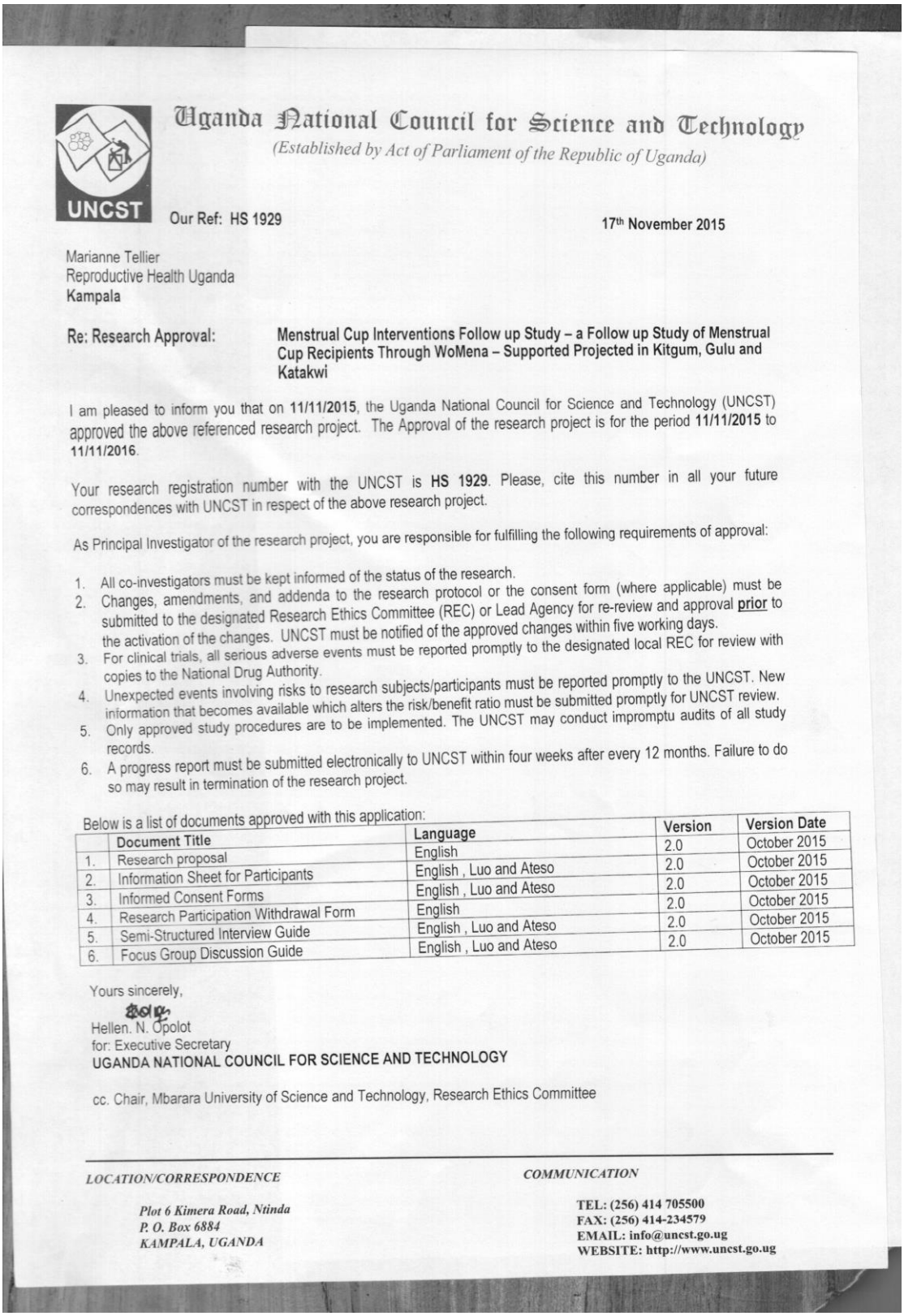


Figure B: Washing hands, folding and inserting MC. Photo: Ruby Cup

Appendices

Appendix I. Research approval letter from Uganda National Council for Science and Technology



Uganda National Council for Science and Technology

(Established by Act of Parliament of the Republic of Uganda)

UNCST

Our Ref: HS 1929

17th November 2015

Marianne Tellier
Reproductive Health Uganda
Kampala

Re: Research Approval: **Menstrual Cup Interventions Follow up Study – a Follow up Study of Menstrual Cup Recipients Through WoMena – Supported Projected in Kitgum, Gulu and Katakwi**

I am pleased to inform you that on **11/11/2015**, the Uganda National Council for Science and Technology (UNCST) approved the above referenced research project. The Approval of the research project is for the period **11/11/2015** to **11/11/2016**.

Your research registration number with the UNCST is **HS 1929**. Please, cite this number in all your future correspondences with UNCST in respect of the above research project.

As Principal Investigator of the research project, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the research protocol or the consent form (where applicable) must be submitted to the designated Research Ethics Committee (REC) or Lead Agency for re-review and approval prior to the activation of the changes. UNCST must be notified of the approved changes within five working days.
3. For clinical trials, all serious adverse events must be reported promptly to the designated local REC for review with copies to the National Drug Authority.
4. Unexpected events involving risks to research subjects/participants must be reported promptly to the UNCST. New information that becomes available which alters the risk/benefit ratio must be submitted promptly for UNCST review.
5. Only approved study procedures are to be implemented. The UNCST may conduct impromptu audits of all study records.
6. A progress report must be submitted electronically to UNCST within four weeks after every 12 months. Failure to do so may result in termination of the research project.

Below is a list of documents approved with this application:

	Document Title	Language	Version	Version Date
1.	Research proposal	English	2.0	October 2015
2.	Information Sheet for Participants	English , Luo and Ateso	2.0	October 2015
3.	Informed Consent Forms	English , Luo and Ateso	2.0	October 2015
4.	Research Participation Withdrawal Form	English	2.0	October 2015
5.	Semi-Structured Interview Guide	English , Luo and Ateso	2.0	October 2015
6.	Focus Group Discussion Guide	English , Luo and Ateso	2.0	October 2015

Yours sincerely,

Hellen. N. Opolot
for: Executive Secretary
UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

cc. Chair, Mbarara University of Science and Technology, Research Ethics Committee

LOCATION/CORRESPONDENCE

Plot 6 Kimera Road, Ntinda
P. O. Box 6884
KAMPALA, UGANDA

COMMUNICATION

TEL: (256) 414 705500
FAX: (256) 414-234579
EMAIL: info@uncst.go.ug
WEBSITE: http://www.uncst.go.ug

Appendix II: Ethical research approval from MUST Research Ethics Committee

MBARARA UNIVERSITY OF SCIENCE AND TECHNOLOGY
RESEARCH ETHICS COMMITTEE

P.O. Box 1410, Mbarara, Uganda. Tel: +256 4854 33795, Fax: +256 4854 20782

Our Ref: MUIRC 1/7 **Date:** October 30, 2015

Dr. Viola Nyakato
IITR
MUST

Ms. Merriane Tellier
President WoMena

Re: **SUBMITTED PROTOCOL ON "MENSTRUAL CUP INTERVENTION FOLLOW UP STUDY- A FOLLOW UP STUDY OF MENSTRUAL CUP RECIPIENTS THROUGH *WOMENA* SUPPORTED PROJECTS IN GULU, KITGUM AND KATAKWI." No. 01/08-15**

Reference is made to the above protocol which was submitted to the Research Ethics Committee for consideration and approval.

I am glad to inform you that your study has been approved for a period of one year up to October 29, 2016.

The following documents have been approved with the application:

Document	Language	Version
Proposal	English	Version 2
Protocol Form	English	Version 2
Data Collection Tool	English	Version 2
Consent Form	English, Luo, Iteso	Version Oct. 30

You are required to register the study with Uganda National Council for Science and Technology, and submit progress and end of study reports to MUST REC.

You can now proceed with the rest of the research activities after getting permission from Uganda National Council for Science and Technology.

I wish you all the best.

Assoc. Prof. Simon K. Anguma, PhD
CHAIR RESEARCH ETHICS COMMITTEE

INSTITUTIONAL ETHICAL REVIEW COMMITTEE
P.O. BOX 1410, MBARARA

Appendix III: Informed consent document for minors (English)

MBARARA UNIVERSITY OF SCIENCE AND TECHNOLOGY
INSTITUTIONAL REVIEW COMMITTEE
P.O. Box 1410, Mbarara, Uganda

Tel: 256-4854-33795 Fax: 256 4854 20782
Email: irc@must.ac.ug mustirb@gmail.com
Web site *: www.must.ac.ug*

INFORMED CONSENT DOCUMENT

Study Title: Menstrual cup interventions follow up study - A follow up study of menstrual cup recipients through WoMena-supported projects in Kitgum, Gulu and Katakwi

Principal Investigator(s): Marianne Tellier (WoMena)

INTRODUCTION

What you should know about this study:

- You are being asked to join a research study
- This consent form explains the research study and your part in the study
- Please read it carefully and take as much time as you need
- You are a volunteer. You can choose not to take part and if you join, you may quit at any time. There will be no penalty if you decide to quit the study

WoMena, (a Danish NGO working on implementation of reproductive health solutions, is conducting a research study in collaboration with Mbarara University of Science and Technology (MUST). The study will focus on three areas (Kitgum, Gulu and Katakwi) where WoMena has previously supported MC studies or interventions. As you probably know, an MC is a flexible, bell-shaped cup worn inside the vagina during menstruation to collect menstrual fluid. This study will explore the experiences of participants that received MCs in 2012, 2013 and 2014. Participants from previous studies have received MCs, but we are not sure whether they are using them or not – that is what we wish to explore. We are also interested in hearing what their families, teachers and communities have say about menstrual hygiene management and its impact on the lives of community members.

Purpose of the research project: This study aims to research the long-term experiences of using MCs among girls and women in three study areas (Kitgum, Gulu and Katakwi). Three groups of participants have been asked to take part in this study: either because they participated in a previous WoMena study/intervention, are related to one of the previous study participants, or teach or somehow are involved in the life of the girls/women.

We will ask participants of previous studies (girls and women who have used MCs) to answer a questionnaire to understand whether MCs are still being used by study participants. Interviews and focus group discussions will allow the study team to assess long-term experiences of using MCs, community attitudes and experiences of the introduction of cups and how well previous interventions have worked.

Approximately 240 participants in total will take part in the study. Between 120 and 220 girls and women will be asked to complete a questionnaire. 15 participants will take part in interviews and approximately 30 participants will take part in focus group discussions. Participation in this study is expected to last between 20 minutes to an hour and a half.

Why you are being asked to participate: You have been asked to take part in this study as you participated in one of the previous WoMena supported studies or interventions and were given a MC as part of the intervention. You do not need to be currently using the cup to take part in this study.

Procedures: Your participation will last for approximately between 20 minutes and an hour and a half. The study

is taking place in Kitgum, Gulu and Katakwi. Girls and women who participated in the previous studies will be asked to complete a 20 minutes questionnaire Then based on that, we will select a few girls to do a longer interview. In the interviews we will ask them to identify family member who will be included in group discussions. In total we will hold 15 interviews and 9 group discussions.
Before you take part in this research, the study will be explained to you and you will be given a chance to ask questions. Your consent will be taken in writing. You will be given a copy of this information sheet to take home with you.
If you agree to take part in this study, the following will happen:

You will be asked to take part in a short questionnaire lasting about 20 minutes during which you will be asked about your experiences using the MC. You do not need to be currently using the MC to take part. Following the questionnaire, you may be asked to attend an interview that will last between 45 minutes and an hour and will be arranged in a place that is convenient for you to attend

Information from the questionnaires will be entered into a data base and analyzed. The interviews and group discussion will be recorded. The recordings will be translated, transcribed and analyzed and the audiotapes will be destroyed. At the end of the project, a report that will written and the results of the study may be published.

Risks / discomforts: No direct risks from this study have been identified. Discussing menstruation and the related norms and practices may however be a sensitive subject. All interviews will thus be conducted in private.

Benefits: There are no direct benefits for you for participating in this study. However, information gained in this study may contribute to future interventions implemented in the area

Incentives / rewards for participating: There is no compensation for taking part in this study.

Protecting data confidentiality: Information collected from this study is confidential. All interviews and focus group discussions will be digitally recorded. Recordings and all files containing confidential information will be stored in password protected files. Any written questionnaires, transcriptions of the interviews and FGDs will be stored in a locked cupboard and all personal details will be removed. Confidential data will only be accessed by the research team, however MUST and the Uganda National Council for Science and Technology (UNCST) may review copies of the study records. Data collected are the property of WoMena. In the event of any publication regarding this study, your identity will not be disclosed

We would also like to take some photos to put on our website. This would identify you as being part of this study. We will ask for your consent to take photos, but it is not a requirement to take part in the study and is completely voluntary.

Protecting subject privacy during data collection: All interviews and FGDs will be held in a location that is convenient for you to attend but also private.

Right to refuse / withdraw: Participation in this study is voluntary and you can decide whether or not you want to take part. If you choose to take part, you will be given a copy of this letter to keep and you will be asked to give written consent. If you are not able to read the consent form, a witness will be provided who can read the document to you and you can sign the consent using a thumb print. If you change your mind, you can withdraw from the study at any time without giving any reason. If during the interview /discussion group you do not wish to answer any of the questions asked, you do not need to do so.

By giving your consent, you will not waive any of your legal rights or release the parties involved in this study form liability for negligence.
What happens if you leave the study? You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. In case you decide to withdraw from this study, you will be asked to sign a form confirming withdrawal from the study.

Who do I ask/call if I have questions or a problem?

You can contact the WoMena team using the details below:

English: Laura Hytti, Study Coordinator, Tel: Tel: +256 775192916, E-mail: laura@womena.dk
Luo: Akurtoo Prisca, Tel: 0777024639

If you have any questions about your rights as a research subject, you can call the Chairman of the MUST-IRC:
Mbarara University of Science and Technology
Institutional Review Committee
P.O. Box 1410, Mbarara, Uganda
Tel: 256-4854-33795
Fax: 256 4854 20782

Kind regards,

Laura Hytti
Study Coordinator
Tel: +256 (0)775192916 / +447851945020
E-mail: laura@womena.dk
Address: Plot 13/15 Kenneth Dale Drive, Kamwokya, Kampala

Consent form No._____

Consent from participant under the age of 18

What does your signature (or thumbprint/mark) on this consent form mean?
Your signature on this form means

- You have been informed about this study's purpose, procedures, possible benefits and risks
- You have been given the chance to ask questions before you sign
- You have voluntarily agreed to be in this study

Print name of participant	Signature of participant/legally authorized representative	Date
Print name of person obtaining consent	Signature	Date
Thumbprint/mark	Signature of witness	Date

Parental consent

Parent or caregiver's signature is required for participants who are under the age of 18.

What does your signature (or thumbprint/mark) on this consent form mean?
Your signature on this form means

- You have been informed about this study's purpose, procedures, possible benefits and risks
- You have been given the chance to ask questions before you sign
- You have voluntarily consented to my child/dependent taking part in this study

Print name of parent or caretaker	Signature of parent of caretaker/legally	Date

authorized representative

_____	_____	_____
Print name of person obtaining consent	Signature	Date

---	---	---
Thumbprint/mark	Signature of witness	Date

Consent to use photographs
If I agree that pictures taken of me during the study can be used in reports, articles and other written material concerning the study, I should sign below:

---	---	---
Print name of participant	Signature of participant/legally authorized representative	Date

_____	_____	_____
Print name of parent or caretaker	Signature of parent or caretaker/ legally authorized reprsentative	Date

_____	_____	_____
Print name of person obtaining consent	Signature	Date

---	---	---
Thumbprint/mark	Signature of witness	Date

Appendix IV: Informed consent document for adults (English)

MBARARA UNIVERSITY OF SCIENCE AND TECHNOLOGY
INSTITUTIONAL REVIEW COMMITTEE
P.O. Box 1410, Mbarara, Uganda

Tel: 256-4854-33795, Fax: 256 4854 20782
Email: irc@must.ac.ug mustirb@gmail.com
Web site *: www.must.ac.ug*

INFORMED CONSENT DOCUMENT

Study Title: Menstrual cup interventions follow up study - A follow up study of menstrual cup recipients through WoMena-supported projects in Kitgum, Gulu and Katakwi

Principal Investigator(s): Marianne Tellier (WoMena)

INTRODUCTION

What you should know about this study:

- You are being asked to join a research study.
- This consent form explains the research study and your part in the study
- Please read it carefully and take as much time as you need
- You are a volunteer. You can choose not to take part and if you join, you may quit at any time. There will be no penalty if you decide to quit the study

WoMena, (a Danish NGO working on implementation of reproductive health solutions, is conducting a research study in collaboration with Mbarara University of Science and Technology (MUST). The study will focus on three areas (Kitgum, Gulu and Katakwi) where WoMena has previously supported MC studies or interventions. As you probably know, an MC is a flexible, bell-shaped cup worn inside the vagina during menstruation to collect menstrual fluid. This study will explore the experiences of participants that received MCs in 2012, 2013 and 2014. Participants from previous studies have received MCs, but we are not sure whether they are using them or not – that is what we wish to explore. We are also interested in hearing what their families, teachers and communities have say about menstrual hygiene management and its impact on the lives of community members.

Purpose of the research project: This study aims to research the long-term experiences of using MCs among girls and women in three study areas (Kitgum, Gulu and Katakwi). Three groups of participants have been asked to take part in this study: either because they participated in a previous WoMena study/intervention, are related to one of the previous study participants, or teach or somehow are involved in the life of the girls/women.

We will ask participants of previous studies (girls and women who have used MCs) to answer a questionnaire to understand whether MCs are still being used by study participants. Interviews and focus group discussions will allow the study team to assess long-term experiences of using MCs, community attitudes and experiences of the introduction of cups and how well previous interventions have worked.

Approximately 240 participants in total will take part in the study. Between 120 and 220 girls and women will be asked to complete a questionnaire. 15 participants will take part in interviews and approximately 30 participants will take part in focus group discussions. Participation in this study is expected to last between 20 minutes to an hour and a half.

Why you are being asked to participate:

- You have been asked to take part in this study as you participated in one of the previous WoMena supported studies or interventions

- You have been asked to attend a focus group discussion as you have been identified by one of previous study participants as a suitable family member to discuss issues related to menstrual hygiene management and MCs.
- You have been asked to attend a focus group discussion as you have either previously been involved in one of the studies or are currently involved with the community and interact with girls and women who have received MCs at the study sites.

Procedures: Your participation will last for approximately between 20 minutes and an hour and a half. The study is taking place in Kitgum, Gulu and Katakwi. Girls and women who participated in the previous studies will be asked to complete a 20 minutes questionnaire Then based on that, we will select a few girls to do a longer interview. In the interviews we will ask them to identify family member who will be included in group discussions. In total we will hold 15 interviews and a group discussions.
Before you take part in this research, the study will be explained to you and you will be given a chance to ask questions. Your consent will be taken in writing. You will be given a copy of this information sheet to take home with you.
If you agree to take part in this study, the following will happen:

- You will be asked to take part in a short survey lasting about 20 minutes during which you will be asked about your experiences using the MC. You do not need to be currently using the MC to take part

- You will attend an interview that will last between 45 minutes and an hour and will be arranged in a place that is convenient for you to attend

- You will attend a group discussion with other community members or family members. The discussion will last approximately 1 and 1/2 hours and will be held in a place that is convenient for you to attend.

Information from the questionnaires will be entered into a data base and analyzed. The interviews and group discussion will be recorded. The recordings will be translated, transcribed and analyzed and the audiotapes will be destroyed. At the end of the project, a report that will written and the results of the study may be published.

Risks / discomforts: No direct risks from this study have been identified. Discussion menstruation and the related norms and practices may however be a sensitive subject. All interviews will thus be conducted in private.

Benefits: There are no direct benefits for you for participating in this study. However, information gained in this study may contribute to future interventions implemented in the area

Incentives / rewards for participating: There is no compensation for taking part in this study.

Protecting data confidentiality: Information collected from this study is confidential. All interviews and focus group discussions will be digitally recorded. Recordings and all files containing confidential information will be stored in password protected files. Any written questionnaires, transcriptions of the interviews and FGDs will be stored in a locked cupboard and all personal details will be removed. Confidential data will only be accessed by the research team, however MUST and the Uganda National Council for Science and Technology (UNCST) may review copies of the study records. Data collected are the property of WoMena. In the event of any publication regarding this study, your identity will not be disclosed

We would also like to take some photos to put on our website. This would identify you as being part of this study. We will ask for your consent to take photos, but it is not a requirement to take part in the study and is completely voluntary.

Protecting subject privacy during data collection: All interviews and FGDs will be held in a location that is convenient for you to attend but also private.

Right to refuse / withdraw: Participation in this study is voluntary and you can decide whether or not you want to take part. If you choose to take part, you will be given a copy of this letter to keep and you will be asked to give written consent. If you are not able to read the consent form, a witness will be provided who can read the document

to you and you can sign the consent using a thumb print. If you change your mind, you can withdraw from the study at any time without giving any reason. If during the interview /discussion group you do not wish to answer any of the questions asked, you do not need to do so.

By giving your consent, you will not waive any of your legal rights or release the parties involved in this study form liability for negligence.
What happens if you leave the study? You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. In case you decide to withdraw from this study, you will be asked to sign a form confirming withdrawal from the study.

Who do I ask/call if I have questions or a problem?

You can contact the WoMena team using the details below:

English: Laura Hytti, Study Coordinator, Tel: +256 775192916, E-mail: hyttilaura@gmail.com
Luo: Akurtoo Prisca, Tel: 0777024639

If you have any questions about your rights as a research subject, you can call the Chairman of the MUST-IRC:
Mbarara University of Science and Technology
Institutional Review Committee
P.O. Box 1410, Mbarara, Uganda
Tel: 256-4854-33795
Fax: 256 4854 20782

Kind regards,

Laura Hytti
Study Coordinator
Tel: +256 (0)775192916 / +447851945020
E-mail: laura@womena.dk
Address: Plot 13/15 Kenneth Dale Drive, Kamwokya, Kampala

Consent form No._____

What does your signature (or thumbprint/mark) on this consent form mean?
Your signature on this form means

- You have been informed about this study's purpose, procedures, possible benefits and risks
- You have been given the chance to ask questions before you sign
- You have voluntarily agreed to be in this study

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Print name of adult participant	Signature of adult participant/legally authorized representative	Date
_____	_____	_____
Print name of person obtaining Consent	Signature	Date
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Thumbprint/mark	Signature of witness	Date

Consent to use photographs
If I agree that pictures taken of me during the study can be used in reports, articles and other written material concerning the study, I should sign below:

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Print name of participant	Signature of participant/legally authorized representative	Date
_____	_____	_____
Print name of person obtaining consent	Signature	Date
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Thumbprint/mark	Signature of witness	Date

Appendix V: Semi-structured interview guide (English)

Semi-structured interview guide – ENGLISH

WoMena and MUST are conducting a follow up research study to assess the long-term experiences of girls and women using menstrual cups among participants of three previous WoMena supported menstrual cup interventions carried out in Kitgum (2012), Gulu (2013) and Katakwi (2014).

The purpose of the this semi-structured interviews is to explore long-term experiences related to use of a menstrual cup incl. challenges and needs, hygienic issues, personal and social practices, norms, attitudes and beliefs.

Presentation of interviewer:
You are participating in Menstrual Cup intervention follow-up study. Its purpose is to explore long-term experiences of using the menstrual cup by girls and women and impact of its use to their and others' lives. With your permission I would like to follow-up on your opinion about Menstrual Hygiene Management, especially the menstrual cup. Your answers will be kept strictly confidential, and your name will only be known to our small group of researchers and will not appear anywhere. We would like to get your sincere opinions and experiences, so please do not fear to give us your honest answers. There are no right or wrong answers - only your personal answers *[interviewer can also remind the informant of this during the interview]*.
With your consent I request we continue with the interview? I would like to know if it is okay that I record what we talk about? In this way I don't have to write down all your answers. Before we begin, I would like to thank you for taking time to participate in this interview.

Themes	Questions
General questions	**Could you please tell us in general a little bit about how you have found using the cup since the cup was given to you?** Do you still have the cup? If not, why? (Probe to see what happened (lost, melted while boiling, some took it, sold…) • If lost: have you tried to receive a new one? Have you ever tried using the cup? If yes, for how long have you been using it? Could you describe your experience of using it during these years/months? How often were you using it? Did you use it during your last period? If no, why not? And when did you use it the last time according to your memory? (if not using it) Why did you stop to use it then? Have you faced any (other) challenges in continue using it? Probe: practical usage, sanitary facilities etc.
Preference & acceptability	We have already asked about your experience in using the menstrual cup and now we would like to ask more specific questions about it: • How do/did you find using the cup in general? • Could you remember your first impression when you started using the cup? Could you it compare your first impression about it with your impression now? • Could you compare your experience before using the cup and now? (FOR CONTINUOUS MC USERS) • What did you like about the cup? (why)? • What did you not like about the cup? (why)?

	• Do you experience any difficulties to insert / take out it? • Do you use other menstrual products together with the menstrual cup during your periods? If yes, could you explain how and when you combine them? (FOR CONTINUOS MC USERS) • How long did it take for you to start feeling comfortable with it? How do you think what influences the feeling of comfort with the menstrual cup?
Hygiene & health	Could you explain how you used the cup? [Could you describe how you usually use the cup during your period?] Probe for: • What did you first do? • How did you insert it? • How did you take it out? • How do you empty it? (IF NOT ANSWERED: Where do you empty it?) How important is the place (school or home) for you to empty your cup? Do you have any preferences? • Did you clean your hands before using the cup? (If yes, how?; If no, why) • How often you change the cup? Have you ever tried to explain it to others? In which situation? *Sanitary facilities*: • Do you have access to the toilet at home/school/work? • How clean is it? • Do you change your cup at home or also at school/work? Do you face any challenges doing it? Is it important for you to know about the sanitary facilities/toilet conditions before deciding to use the cup? (FOLLOW UP ON THE QUESTION) How did you clean the menstrual cup? (IF NOT COVERED IN THE PREVIOUS PART) • How did you clean it during your period? • How did you clean it in between your periods? • Did you boil it (if yes, how, when, how often)? • Did you use tablets for sterilizing it? • Did you have any challenges cleaning the menstrual cup? How do you take care of your cup in between your periods? (How did you keep the menstrual cup when you were not using it?) How about cleaning? Sterilizing it? Are you the only one in your family who received the MC? How did your family members react to it? Has anyone asked you whether they can share/use your cup (if yes, what did you answer)? Did you share your cup with other girls/women? Do you think you ever had any health problems because of using the menstrual cup? Probe for: symptoms and discomfort from the urinary/reproductive tract

Empowerment	• How do you interact with others when you are in your period? (FOR THE CONTINUED USERS: How do you interact with others when you use the menstrual cup? • Are some things more difficult to do? (if yes, which and why?) Could you compare your daily routines and habits (including the days you go to school or work) during your period before and after you started using the MC? Are there any differences you noticed? (if yes, how and why?) Which MHM product do you use when you need to travel longer distances during your period? (Do you use the menstrual cup when you have to travel longer distances during your period?) How do you feel participating in different activities and social interactions during your period using the menstrual cup? Could you compare this experience when you use the menstrual cup, and when you use another menstrual product?
Impacts on family and community	Do you know many girls/women who are using the cup? Do you talk about it? How important is for you to use the same menstrual product as other girls? Do you think all of you use the same MHM products? Do people in your circle (family, teachers, peers, co-workers) know (are they aware) about existence of the menstrual cup? Do any of your friends or family members know that you are using the menstrual cup, and if so, what do they think about it? Have they ever asked you anything about it? (If yes, what do they ask?) Have you heard any opinions about you using the menstrual cup? How have you heard them? What do you think about it? Do you talk about the menstruation related issues in your family, with peers etc.? How do you feel talking on these topics? Do you discuss the usage of cup and related issues with your peers, family, teachers, senior women teachers who were training you, etc.? What do you discuss about? Did you hear someone discussing it? How important for you is to have ability to share your experience about the menstrual cup with others? Have you ever asked for help/money from you family members to buy sanitary products? If yes, how did they react? (Do you need to ask for money now????) How about now when you have the cup? (FOR THE CONTINUOUS USERS)
Closing questions	Do you feel or safe in continuing using the cup? Do you feel having sufficient information and experience for continuing to use the MC? Do you need more information about this method? Considering your knowledge and experience about the MC, would you recommend the cup to others? What would you tell them about the cup?
Thank you	Do you have anything you would like to add or to ask? Thank you very much for your time

Appendix VI: Non-disclosure agreement

Confidentiality Agreement

for collaboration with university students

During the course of your study and/or research in collaboration with WoMena there may be disclosed to you or you may gain access to confidential information of WoMena, WoMena's activitites and associated . Therefore, all students who collaborate with WoMena to prepare a thesis, paper or report must fill out and sign this agreement.

"Confidential information" means any information of a secret or confidential nature and includes, but is not limited to: research data, information on study participants, customer information, methods, plans, documents, manuals, reports, contracts, negotiations, strategic planning, proposals, business alliances, and training materials.

In consideration of being given access to information that will be valuable for my research or study, I agree to the following:

- ✓ I have read and understand the above definition of "confidential information".
- ✓ I agree that I will not at any time, both during and after my collaboration with WoMena, communicate or disclose confidential information to any person, corporation, or entity.
- ✓ I further recognize and agree that during the collaboration with WoMena, I may become aware of nonpublic information of a personal nature about employees, associates or research study participants, including, without limitation, actions, omissions, statements, or personally identifiable medical, family, financial, social, behavioral, or other personal or private information. I will not disclose any such information that I learn to any other person or entity, unless required by applicable law or legal process.
- ✓ I agree to submit to WoMena for orientation the final version of the thesis, paper or report that I submit to the university at which I am enrolled.
- ✓ Prior to making any papers or reports public, I will submit to WoMena a full and complete draft of the proposed publication that include any information derived from my research or study in collaboration with WoMena for its review. I shall disguise or omit from this material any data that WoMena identifies as too sensitive for disclosure.

Students full name (block letters): NATASHA WRANG

Students signature Natasha Wrang Date (dd/mm/yyyy): 17 - 12 - 2015

Preliminary description of topic: Experience of using menstrual cups for women in Kitgum

University and department: Lund University, Faculty of Medicine

University supervisor: name _____ email _____

Expected date of submission of the thesis/paper/report to university (dd/mm/yyyy): 20 - 05 - 2016

Appendix VII: Popular Science Summary

In Uganda and many parts of the world, menstruation is considered a taboo. This can affect women and girl's ability to handle their menstruation in a dignified way. During menstruation, many have limited access to proper menstrual materials as pads and cloths, access to a safe place to change the menstrual material or access to soap and water to clean their hands and menstrual material.

A menstrual cup (MC) is a bell-shaped menstrual material, made of medical grade silicone and used inside the vagina to collect the menstrual discharge. The MC can be used up to 12 hours before emptying the menstrual discharge, due to its capacity and material. The same MC can be used several years and is considered environmentally and economically sustainable, especially in settings where access to menstrual materials is limited due to financial constraints.

Due to the possible benefits of using a MC, the Danish Non-Governmental Organisation WoMena brought MCs to girls and women living in the districts of Kitgum, Gulu and Katakwi in Uganda between 2012 and 2015 to try it. This study aimed to explore their experiences of using MCs six months to four years after receiving it. Few studies have explored experiences of using MCs in Sub Saharan African countries after a longer period than six months, which makes this study quite unique.

Fifteen girls and women were interviewed about their experiences. The results show that MC is an accepted menstrual material. Using MC limited the risk of getting stains, which increased their confidence to participate in social gatherings, play and walk long distances. However, only four still used MC, because they lost it or stopped using it due to lack of motivation. Recommendations for sustainable MC implementation include increasing emotional support, access to MCs, privacy to practice hygiene and MC training.