An exploratory study into Menstrual Hygiene Management among rural, primary schoolgirls in Uganda: what implications does menstrual related absenteeism have for future interventions?

“I fear going to school because the teacher may beat me and my cloth may fall down”

Schoolgirl’s response to ‘Are there any other reasons menstruation makes you miss school?’
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Cover photo: A government, primary school visited in the Rukungiri District of South-West Uganda. Compliments of Robyn Boosey
Abstract

**Background and aims:**
Menstrual Hygiene Management (MHM) is an under researched issue in East Africa. In low income settings poor MHM can cause absenteeism from school. This is important as a lack of education can decrease future career prospects for girls. This study aims to explore the experiences of rural, primary schoolgirls in Uganda during menstruation in order to guide effective interventions to prevent menstrual related absenteeism from school.

**Methods:**
Self-administered questionnaires were given to 140 schoolgirls in six schools in the Rukungiri District of South-West Uganda. Questions included topics on knowledge, product use, disposable sanitary pads, absenteeism and reasons for menstrual related absenteeism. This was followed up by focus groups with six girls from each school where the girls were asked to rank solutions to girls’ menstrual problems. Semi-structured interviews were undertaken with the headmaster and senior women teachers from each school as well as the supervisor of the WASH team in UNICEF Uganda and a senior woman teacher from a private primary school.

**Results:**
Knowledge on menstruation was poor amongst the schoolgirls with 36.3% of girls believing that menstruation was a disease. Most girls used cloth (87.1%) during menstruation with less than half of girls (47.1%) using purchased sanitary pads. Around two thirds of girls (61.7%) reported normally missing some days of school in a month because of menstruation with the mean number of days missed at 1.64 (n = 133, SD = 1.835). The highest reported reason (63.8%) girls missed school during menstruation was the lack of a private place to wash and change at school. Girls in focus groups from the more rural schools prioritised re-usable pads as the most important solution whereas girls in schools closer to a village prioritised disposable pads.

**Conclusion:**
The results show that in rural Uganda, menstruation causes absenteeism from school. This absenteeism is mainly due to the lack of facilities at school, lack of menstrual education, embarrassment or pain caused by menstruation and the inability to afford hygienic sanitary materials. A randomised controlled trial in East Africa is needed to trial interventions that could reduce this menstrual related absenteeism from school.
Abbreviations

MDG – Millennium Development Goal
MHM – Menstrual Hygiene Management
NGO – Non-Governmental Organisation
OECD – Organisation for Economic Co-operation and Development
P&G – Procter and Gamble
SHE – Sustainable Health Enterprises
UNFPA – United Nations Population Fund
UNICEF – United Nations Children’s Fund
WASH – Water, Sanitation and Hygiene
WHO – World Health Organisation

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Chapter 1: Introduction, Aims and Structure

1.1 Introduction

1.1.1 Definition
Menstrual Hygiene Management (MHM) is the absorption of menstrual blood onto clean material which can be changed in privacy. It also incorporates the availability of soap and clean water, to wash re-useable sanitary materials and the body, as well as a suitable place of disposal for used materials (WHO-UNICEF 2012).

1.1.2 The importance of Menstrual Hygiene Management
In low-income settings inadequate MHM is believed to cause female absenteeism from school which has wider implications for society. It is estimated that in low-income countries 200 million menstruating females suffer from poor MHM (Crofts 2012). In research for developing Water, Sanitation and Health (WASH) guidelines for schools in Kenya it was identified that girls found menstruation the biggest obstacle for attending school (Greene 2009). Afripads report that girls miss up to 20% of a school year due to menstruation (Afripads 2013). By the end of primary school, this can equate to a whole year of school missed. This has consequences on career prospects as reports show that an extra year of primary school education can increase future wage by 10-20% (Herz 2004). The wider implications for society are seen in the fact that women, on average, reinvest 90% of their wage into their family compared to just 30-40% in men (OECD 2008). In addition, lower maternal education is associated with an increase in infant mortality (Caldwell 1982). Therefore, any policy that may decrease female absenteeism from school is in the interest of society.

Furthermore, there are health issues with poor MHM. Not changing a pad often and not ensuring the pad is dry before wearing can lead to reproductive and urinary tract infections (Dasgupta 2008) along with uncomfortable chafing (Seymour 2009). Although a lack of knowledge on safe MHM can lead to this, the lack of facilities at schools and the embarrassment of leaving pads to dry on display can leave girls with no choice. Also, the inaccessibility and cost of safe menstrual products causes girls to use whatever materials they have available to them and this can lead to health problems. Using cloths or cotton wool for menstrual hygiene is a risk factor for bacterial vaginosis (Baisley 2009). The negative effects of poor MHM on health are important as it can further decrease school attendance and performance at school.

Finally, MHM is notable for the achievement of several Millennium Development Goals (MDGs) (Tjon Ten 2007). MHM is important for MDG3, the empowerment of women. Inadequate MHM perpetuates inequalities between genders that already exist to hamper the empowerment of women. If girls are missing education because of menstruation, this decreases future career prospects. Additionally, poor MHM may decrease employability. In Iran it was shown that 10% of women missed up to 3 days of work due to dysmenorrhea during menstruation but there are few data in East Africa to support the later argument (Poureslami 2005). If proven in East Africa, this has implications for achieving MDG1B employment for all. A lack of gender orientated toilet facilities for girls at school can have negative effects on girls’ sanitation during menstruation, suggesting MDG7C access to basic sanitation cannot be met. Therefore by not addressing the needs of menstruating girls in low-income settings, this may undermine progress towards achieving MDGs.

1.1.3 A neglected issue
Until recently, MHM has been overlooked in WASH development programmes in East Africa (Sommer 2011a) and the effects of MHM on schoolgirls remains a relatively unexamined topic (UNFPA 2003). The reason why MHM has previously been neglected may be due to the culture of silence on the subject (Olayinka 2004) where menstruation is seen as a ‘secret’ (Sommer 2011). It may also be due to the fact that men are often
still the key decision makers in developing countries and, due to the lack of knowledge on the issue, MHM may not be considered in policy making (WaterAid 2009). Researchers recommend that studies are carried out to understand the link between inadequate MHM and absenteeism from school so that policymakers in countries are aware of the barriers schoolgirls face because of menstruation (Sommer 2013).

1.2 Aims and Objectives
This study aims to contribute to evidence about the link between absenteeism and menstruation of schoolgirls in East Africa as well as to learn about the experiences of low-income, rural, Ugandan girls during menstruation. This is so that policymakers and organisations can make informed decisions on the best possible intervention to keep girls in school during menstruation. This aim will be achieved through the following objectives:

- To analyse, critically, current research on girls’ MHM and interventions to improve girls’ MHM in East Africa
- To compare the data collected in this study to similar research in East Africa
- To evaluate the implications of this data for future interventions to improve girls’ MHM in schools in Uganda

1.3 Rationale for study
Although a few researchers have explored MHM in other East African countries, no study has yet examined MHM amongst primary schoolgirls in Uganda, especially in rural, government schools where girls are most vulnerable to bad MHM practices.

1.4 Structure
Chapter One: An introduction on the topic of MHM and its importance for schoolgirls in East Africa, outlining the Aims and Objectives of this study as well as the rationale for conducting the research in Uganda.

Chapter Two: An exploration into current research on girls’ MHM in East Africa and current interventions to improve MHM amongst girls’ in East Africa

Chapter Three: A discussion of the study design and study population

Chapter Four: An overview of the results from this study

Chapter Five: Analysis of the results, with similarities and differences to other research in East Africa, as well as the implications this has for future interventions. Also, this chapter will summarise the limitations of the study.

Chapter Six: The conclusion of this research and recommendations for future practice, policy and research
Chapter 2: Background

2.1 Background

2.1.1 Menstrual related absenteeism

There is an increase in girl dropout rates around menarche (UNICEF 2003) because menarche marks the transition to womanhood, which comes with bigger responsibilities and restrictions, as well as the possibility of becoming pregnant and married (Sommer 2009). However, there is a lack of empirical evidence linking menstruation as a direct cause of absenteeism and in the data that does exist in East Africa, there are large variations. Whilst in one study in Uganda found that only 14% of girls missed school due to menstruation (Crofts 2012), other studies in Kenya and Malawi reported that 50% had missed school at least once due to menstruation (Wilson 2012, Pillitteri 2011). The variation in results may be because all of the studies were reliant on self-reporting from girls on a sensitive topic. Research in Tanzania discovered that girls almost never recorded menstruation as a cause for absence but instead would put illness or fatigue, making it difficult to use registers as a quantitative measure of menstrual related absenteeism (Sommer 2009). The reason girls disguise their absence is because of embarrassment and shame, in particular with male teachers. It may also be that girls who miss school because of the pain from menstruation perceive this pain as an illness. This is highlighted by the fact that most of the girls in a study in Nigeria did not view menstruation as a physiological process (Adinma 2008). It is believed this may have caused under-reporting of menstrual absenteeism in a Kenyan study (Wilson 2012). Although there are variations in results between populations on the burden of menstruation on schooling, all studies agree that menstrual related absenteeism exists.

The most generalizable, current figures for the burden of menstruation on attendance at school for girls in East Africa are likely to be that calculated by a Kenyan study (Wilson 2012) because of the sample size and method of collecting the data. This study used a larger sample size of schoolgirls compared to studies in Uganda and Malawi (Crofts 2012, Pillitteri 2011). The study used qualitative methods, such as focus groups, to gain estimates on the number of days missed of school due to menstruation. On the other hand, the Kenyan study used self-administered questionnaires. It has been shown that participants are less likely to under or over-estimate sensitive health problems in self-administered questionnaires compared to interviews and focus groups (Rhodes 1995). As to the burden of menstruation on attendance at school for girls in Uganda, no quantitative research method has been attempted to find an accurate estimate.

2.1.2 Reasons for menstrual related absenteeism

2.1.2A Lack of sanitary materials

Studies in Sub-Saharan Africa show that girls in low-income settings have a low usage of sanitary pads. A study in Kenya reported that 51% of girls used purchased sanitary towels with the rest using alternative materials such as cloth, toilet paper and cotton (Wilson 2012). In a different population in Kenya the situation was much worse with very few girls using sanitary pads (McMahon 2011). However, McMahon’s study in Kenya had a very small sample size and used only qualitative methods to collect data so data collected by Wilson is likely to be more generalizable to the Kenyan population. South-West Nigerian studies report a small percentage of girls using pads with most girls using toilet/tissue paper (Abioye-Kuteyi 2000, Adinma 2008). On the other hand, a study in North-West Nigeria showed that 93.8% of girls used sanitary pads (Lawan 2010). All three studies in Nigeria were conducted in a spread of private and public secondary schools with similar sample sizes and data collection by self-administered questionnaires. Variations in the data could be due to the difference in region or socio-economic differences between study populations. However, no attempt has been made by any of the studies to assess the socio-economic demographics of the girls so comparisons cannot be made. Although Crofts states that in Uganda most girls in private schools
use sanitary pads with girls in poorer schools mainly using cloths (Crofts 2012), no study in Uganda has yet estimated the percentage of girls in schools that use these methods.

Girls in low-income settings are unable to buy sanitary pads to use during menstruation which, in turn, can cause absenteeism from school. Most girls in Kenyan studies have wanted to buy sanitary pads but have been unable to do so due to lack of money and a small percentage indicated there were no sanitary pads available in the shops (Wilson 2012, McMahon 2011). Girls in Tanzania and Nigeria were also unable to afford sanitary materials (Lawan 2010, Sommer 2009). Furthermore, due to the culture of silence on menstruation, men often lack any understanding on the issue which can cause issues when girls have to ask male relatives to buy pads (Pillitteri 2011). In Ghana, those girls who had no access to pads reported missing school for 3-5 days on their period (Montgomery 2012) and in Uganda a third of girls stated that a lack of pads was the main reason they could not attend school during menstruation (Crofts 2012). Therefore, a lack of money and availability of pads is likely to contribute to menstrual related absenteeism.

A lack of sanitary pads may cause absenteeism from school because girls resort to unhygienic materials that are more readily available and are not as efficient as pads. Girls in Uganda that used traditional materials such as cloth and old paper were discouraged from playing sport or walking long distances for fear it would fall out (Crofts 2012). This was also seen with girls in Malawi where menstrual cloths would fall out at school causing embarrassment (Pillitteri 2011). The embarrassment and the fact that many girls in low-income settings have to walk long distances to get to school can discourage girls from attending school during menstruation. Some rural schoolgirls in Malawi couldn’t afford underwear (Pillitteri 2011) and without anything to attach menstrual materials to, this makes management of menstruation at school nearly impossible. Traditional materials are also less reliable than pads at absorbing menstrual blood. In Malawi, 11% of girls went home when their cloths leaked resulting in 7% of girls not even attending schools on heavy days because of fear that their cloth would leak (Pillitteri 2011). Girls in Rwanda would also often sit at the back of the classroom to keep blood stains hidden from view (Sommer 2013). Traditional materials tend to be less hygienic than sanitary pads because of the fact that they are often re-used but are rarely washed properly because of lack of soap and water (Pillitteri 2011). If cloths are not washed and dried properly then they can become a risk factor for infection further resulting in absenteeism from school (Adinma 2008). Overall menstrual materials like cloth are unsuitable alternatives to sanitary pads and, because of the embarrassment a potential leakage can cause, some girls prefer to stay at home during menstruation.

**2.1.2B Lack of education**

Many girls reach menarche without any knowledge of menstruation, causing fear and embarrassment. Almost half of girls surveyed in Nigeria had no preparation on how to cope with menstruation prior to menarche (Aniebue 2009). The fact that some girls in rural Tanzania were afraid to tell their mothers they had started menarche, because they thought they had been cursed or had a disease, highlights how frightening menstruation can be if you have not been educated about it (Sommer 2009). This lack of knowledge on menstruation amongst girls has been further demonstrated by other studies in low-income settings. Less than half of girls in a study in Malawi thought menstruation was a natural process (Pillitteri 2011) and 10% of post-menarche girls surveyed in Nigeria did not know what menstruation was (Abioye-Kuteyi 2000). Even amongst the girls who had received information on menstruation before menarche, half of them were embarrassed at their first menses (Abioye-Kuteyi 2000). It is thought that this embarrassment and ignorance of menstruation stems from the taboo nature of the topic (Pillitteri 2011). On the other hand, some studies in Nigeria and Rwanda show that most girls had an accurate knowledge of menstruation. However, these studies were in secondary schools which are likely to include older girls, where having a fair knowledge of menstruation increased with age (p<0.05) (Lawan 2010, Abioye-Kuteyi 2000, Sommer 2013).
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Studies in Nigeria and Kenya indicate that when information about menstruation is given, the primary source is from mothers with very few receiving information on menstruation from teachers (Aniebue 2009, Abioye-Kuteyi 2000, Lawan 2010, McMahon 2011). A lack of training of teachers, the higher prevalence of male teachers at schools and a lack of resources for students means girls are often not taught about menstruation at school (Sommer 2009). This lack of resources is demonstrated by the fact that the only mention of menstruation in the ‘Life Skills’ book given to girls at school in Malawi is that ‘menstruation begins’ (Pillitteri 2011). There is a need for accurate MHM teaching at schools as information from mothers has been found to be distorted and influenced by incorrect myths (Adinma 2008). For example, in Malawi menstruating girls had to bathe separately to parents and stop talking to boys. In some ethnic groups, girls who reached menarche had to undergo sexual initiation by a man called a ‘fisi’ (Pillitteri 2011, Kamlongera 2007). It has also been shown that correct knowledge of menstruation was higher in girls whose parents had reached secondary education than those who had not (p<0.05) (Abioye-Kuteyi 2000). Therefore, educating girls on menstruation to keep them in school can have intergenerational effects.

This lack of education on menstruation can lead to bad MHM which in turn can cause absenteeism from school. It is important that reusable menstrual materials dry in the sun in order to kill bacteria and dry efficiently. However, embarrassment and lack of education on this matter meant less than 3% of girls in a Ugandan study dried their pads or cloths in sunlight (Crofts 2012). This led to one in seven girls using materials that were still damp which can result in chafing and infection, factors which can cause absenteeism from school (Crofts 2012).

2.1.2C Lack of facilities at school

Throughout research into MHM in Eastern Africa there is a common theme of lack of facilities at school. Crofts found that in Uganda toilets lacked any privacy or natural light for girls to change menstrual materials (Crofts 2012). In schools where separate bathing rooms for girls were available, the fact that girls had to ask a teacher for a key meant they were too embarrassed to use it because of the fear that others might know they were menstruating (Sommer 2013). This fear is also seen in girls’ reluctance to carry water into sanitation facilities (Crofts 2012). Most toilets in low-income schools lack accessible water so not wanting to be seen carrying water means girls are unable to wash menstrual materials at school (Crofts 2012). In fact, Crofts found that in Uganda no daily scholar washed their pads at school and would instead make one pad last all day. Another facility that is found consistently lacking in most schools in East Africa is a place to dispose of pads (Crofts 2012, Sommer 2013, Pillitteri 2011, Sommer 2009). Even when schools did have incinerators, they were never used by girls because of the distance from latrines and the common myth that a witchdoctor might be able to take your menstrual material and us it to place a curse on you (Crofts 2012). This resulted in most girls disposing of materials in the pit latrine causing it to fill up quickly and clog up emptying of the pit, becoming an environmental hazard (Crofts 2012, Bharadwaj 2004). Most schools do not have the funding to provide these facilities but also, because most teachers in Uganda are male, schools are uninformed about the needs of menstruating girls. Overall, facilities at schools in East Africa are insufficient for menstruating girls creating a gender discriminatory environment at school (Sommer 2009). Studies in Malawi and Kenya report that because of the lack of facilities, girls feel the most effective way to deal with menstruation is to go home and stay at home (Pillitteri 2011, McMahon 2011). The lack of facilities hamper the hygienic management of menstruation and leave girls with no choice but to remain absent from school during their period.

2.1.2D Pain

Finally, one other factor studies have highlighted can cause absenteeism from school during menstruation is pain. A study found that in Uganda, the most cited menstrual related problem was pain which in turn caused girls to miss school (Crofts 2012). Additionally, in Malawi, a cultural myth that painkillers make you sterile
and the fact that most girls couldn’t afford painkillers meant those suffering from menstrual related pain preferred to stay at home during menstruation (Pillitteri 2011). However, although menstrual pain was also the most reported issue of menstruation in a Nigerian study, most girls in this case were able to use analgesics to prevent menstrual pain (Adinma 2008). This most likely reflects the fact that the girls in the Nigerian study were from an urban area and had a greater accessibility to painkillers and money to buy them compared to the studies in Uganda and Malawi where girls were mainly from rural areas.

2.1.3 Current interventions

2.1.3A Disposable pads

Distributing free or cheap disposable pads is an easy and effective way of keep girls in school on their period. Girls in Rwanda, Malawi, Tanzania and Uganda all requested the manufacture or distribution of cheap disposable pads to help them manage menstruation (Sommer 2013, Pillitteri 2011, Sommer 2009, Crofts 2012). Girls in Uganda also stated they would prefer to use disposable sanitary pads if price was not an issue, viewing them as the “modern” way to deal with menstruation (Crofts 2012). A study in Ghana showed that after 5 months of providing pads to schoolgirls, attendance increased by 9% (Montgomery 2012). However, the pads were provided alongside puberty education and in schools where puberty education was solely provided, attendance increased to a similar level. Therefore, it is inconclusive as to whether the pads or education increased attendance.

In East Africa, several companies fund the distribution of free disposable pads. ‘Protecting futures’ is a project set up by Procter and Gamble© which distributes free disposable pads to schoolgirls in Kenya with approval from the Kenyan government (P&G 2013). They also train teachers how to teach about MHM as well as building toilets and incinerators in schools. The project has reached 8,000 girls so far. However there are questions to be asked on the sustainability and motives of the project. Girls become reliant on the delivery of free products and it undermines economic development because of competition with local manufacturers. Some may also query the motives of P&G because the company receives a tax reduction on their products from the Kenyan Government as a result of the project. In Uganda, disposable pads called Makapads were designed initially for refugees but are now also supplied to NGOs to give to schoolgirls free of charge (Makapads 2013). However, it is unknown if the pad is biodegradable and without adequate places for disposal at schools this could lead to unhygienic waste (Crofts 2012). Also, girls indicated that the design of the pad made it unreliable in preventing leakage because it lacked absorbency and had no wings to attach the pad to pants (Crofts 2012). Similarly to the ‘Protecting futures’ project, distributing free disposable Makapads is not a sustainable answer to the lack of sanitary materials available to menstrual girls.

Sustainable Health Enterprises (SHE) is an organisation in Rwanda that hopes to pair the distribution of disposable pads with sustainability (SHE 2013). The disposable pads are biodegradable, affordable and made from banana fibres. Banana trees are plentiful throughout Uganda and SHE gives already established women’s groups micro finance to help them start up their own business of producing the pads locally. These cheap pads seem like a sustainable answer, however research is lacking on the effectiveness of the product from girls’ perspectives. The potential for low-costs pads is huge as there is currently no large scale project in Sub-Saharan Africa let alone in Uganda and 200 million girls and women in low-income countries lack adequate menstrual materials (Crofts 2012). However, care needs to be taken when distributing free pads to ensure the project is sustainable and doesn’t cause harm to the community or environment.

2.1.3B Reusable pads

Reusable pads are a cheap and accessible answer to managing menstruation in low-income settings. Rural girls in Malawi said teaching on making a home-made pad would be welcomed as many of their families cannot afford to buy them disposable pads and the cloths they use instead are ineffective in preventing leaks
and are unhygienic (Pillitteri 2011). Almost all of the girls in a study in Kenya also thought it would be useful to learn how to make a reusable pad (Wilson 2012). This study in Kenya implemented teaching on making a reusable pad called the ‘Mwezi’ pad and despite the results not being conclusive (p=0.077; 95% CI -3.17: 0.21), they show that there was a reduction in absenteeism compared to the control group (Wilson 2012). Girls thought the pad was beneficial as an alternative to traditional methods with 56.6% of the girls using the pad all the time. The results are promising, although a larger sample size is needed to evaluate a reduction in absenteeism. Furthermore, a few issues with regard to the product surfaced in the study. Due to very low economic status of the girls, almost half found it hard to find the right equipment to make the pad. This suggests a more effective intervention could also supply the materials alongside teaching. When girls did manage to make the pad, a third of girls thought the pad was too bulky. If the pad is too uncomfortable or noticeable this could raise issues of embarrassment and reduced participation at school. One major problem with reusable pads is hygiene. Despite the girls in Kenya being taught about the importance of hygienic methods for managing menstruation, a quarter of girls were still embarrassed to wash the pads and 40% were embarrassed to leave the pad outside to dry (Wilson 2012). Not washing or drying pads thoroughly can lead to health issues as discussed earlier.

In Uganda, a reusable pad called Afripad looks like an encouraging solution for girls who cannot afford the disposable pads available on the market (Afripads 2013). Afripad kits include all the materials to make the pad and do not rely on electricity to make so can be made in rural settings. A study in Uganda reported a positive response to the pad with girls saying they were cheap, soft and leak-proof (Crofts 2012). However, like with the ‘Mwezi’ pad many girls in rural settings do not have access to clean water and soap or the knowledge on how to wash and dry the pad hygienically. Also, extremely poor girls still perceived Afripads as expensive compared to traditional materials. Reusable pads, despite having hygiene issues if not managed correctly, are still better than traditional materials and may reduce absenteeism from school.

2.1.3C Menstrual Cup and Tampons

No organisation has yet trialled the use of tampons or menstrual cups for the reduction of menstrual related absenteeism from school in East Africa. A study in Nepal showed that menstrual cups were ineffective at reducing absenteeism from school (Oster 2011). Furthermore, inserted products in Uganda were found to be culturally inappropriate. Girls said they would not use inserted products for fear they would get stuck, be difficult to insert or be painful as well as believing they could have negative effects on their fertility (Crofts 2012). Inserted products are likely to be an ineffective intervention in Uganda.

2.1.3D Facilities at school

Lack of facilities at school for menstruating girls is an obvious barrier to MHM. UNICEF has now incorporated facilities suitable for menstruating girls into their WASH guidelines but a lack of funds at schools leaves them unable to provide such facilities (UNICEF 2010).

2.1.3E Education

Several studies have looked at specifically improving MHM education amongst girls. Girls have requested teaching about menstruation and puberty before menarche so that they are not shocked at their first menses (Pillitteri 2011, Sommer 2009). Early intervention is important as menstrual hygiene behaviours developed at the onset of menstruation may persist through life (Narayan 2001). In Ghana, teaching sessions on puberty, menstruation and pregnancy to schoolgirls improved attendance at school after 5 months (Montgomery 2012). MHM for girls is often lacking in school curriculum and a book developed in Tanzania hopes to fill this gap. The book ‘Growth and Changes’ is designed for 10-14 year old girls and was developed after extensive research with rural and urban girls in Tanzania (Sommer 2009, Sommer 2009a). 16,000 books were distributed to girls in Tanzania and received a positive response, with data indicating an increased level
of menstrual knowledge. The book has now received approval to be part of the school curriculum and NGOs are currently involved with UNFPA and UNICEF to distribute more copies. However, all analysis of the book has been qualitative so it is not known if the book has led to a decrease in absenteeism from school. The book is now being modified for use in Zimbabwe, Nepal, Ghana and Ethiopia. The menstrual book looks like a promising intervention to increase girls’ education on menstruation but more analysis is needed to determine whether it decreases menstrual related absenteeism from school.
Chapter 3: Methodology

3.1 Study design

This was a cross-sectional study using a self-administered questionnaire followed by a qualitative element of focus groups and interviews. The study was organised by Irise as a pilot study for a randomised controlled trial in Kasese, Uganda trialling the use of reusable pads to reduce absenteeism from school. This pilot study was conducted by a Bristol University Masters student and myself. Six rural, government primary schools in the Rukungiri District of South-West Uganda were asked to participate in the study. Girls from all schools were asked by the senior woman teacher to complete the questionnaire. The senior woman teacher from each school was asked to select six girls who had completed the questionnaire to participate in a focus group. Semi-structured interviews were undertaken with the headmaster and senior woman teacher from each school as well as the supervisor of the WASH team in UNICEF Uganda and a senior woman teacher from a private primary school.

The questionnaire (Appendix 1) was adapted from use in an Irise study in Kenya (Wilson 2012). It was decided that questionnaires would be used to collect quantitative data on the girls’ experiences of menstruation, as self-administered questionnaires can increase willingness to respond to sensitive information on health issues (Tourangeau 2000) and have higher levels of reporting (Bradburn 1983). Participants are also less likely to under or over-estimate sensitive health problems (Rhodes 1995) and are less likely to have acquiescence ‘yes-saying’ bias compared to interviews or focus groups (Bowling 2005).

Questionnaires were completed in class with two researchers and a local university student acting as a translator. Girls were all given an information sheet to read and keep (Appendix 2). The content was translated to ensure the girls understood. The girls were then asked to sign a consent form if they agreed to take part in the study (Appendix 3). Girls were asked to sit separately from each other and not to shout out answers. They were reminded of the anonymity of the questionnaire, that this session was not an exam and that we wanted to know what was true for them personally. The questionnaires were coded with no names written with their responses to ensure the girls knew their responses would be kept confidential. Example questions were drawn on the blackboard before the start of the questionnaire to explain the concept of a questionnaire. The questionnaire was undertaken question by question, translating and explaining each question to ensure the girls understood. Female sanitation is a taboo issue in most societies and we took care to approach the topic in a culturally sensitive way. We were trained by Irise to ensure we knew how to do this.

Qualitative participatory methodologies were used in the form of focus groups to enable girls to voice their opinion (Naples 2003). These are effective in collecting responses to questions on sensitive topics (Caskey 2005). Both the focus groups and interviews were recorded. Participants were told that any quotes used would remain anonymous and informed consent was given. Focus groups and interviews were undertaken in a private environment, usually in a free classroom.

Optional teaching sessions on MHM were carried out after the questionnaire by ourselves and girls were invited to ask questions about menstruation in class and privately. All girls who participated were given a bar of soap as a thank you for taking part which was kindly donated by Visionary Soap©.

3.2 Study population

Girls aged 13-16 years were invited to take part and any girl who had not started menstruating was excluded. The mean age for the girls in this study population was 14.45 (N = 140 SD = 0.908). In this study government primary schools were selected to represent the views of the poorest and most vulnerable girls in the population (Sommer 2011a). Additional information on the selection of government primary schools in rural
Uganda can be found in Appendix 4. Furthermore, it is essential that girls themselves be the participants of research to best understand their experience of menstruation in order to develop effective interventions (Medicine 2003).

3.3 Data analysis
SPSS 19™ was used to enter and analyse the data. Descriptive statistics and frequencies were used to examine the characteristics of the study population.

Interviews were analysed by thematic content analysis (Green 2004). The transcripts were coded and classified by myself and the recurrent themes and concepts emerging from the data were discussed with a fellow researcher. Focus groups were analysed by ordering the solutions on a scale of 1 to 6.

3.4 Ethical arrangement
Ethical approval was received locally in Uganda by the Kisiizi Hospital management committee (Appendix 5).¹

¹ University of Bristol ethics were also approached. However, the University’s research ethics committee do not do dual review and local ethical approval was deemed appropriate. Therefore faculty approval was not required for this study.
Chapter 4: Results

4.1 Introduction
173 girls were approached in 6 schools and asked to participate in the study. These girls were selected by the senior woman teacher from each school as being within the selection criteria. All 173 girls agreed to participate and completed the questionnaire. Of the 173 girls that completed the questionnaire 8 were not in the age category, 23 had not started their period and 2 had not stated whether they had or had not started their period. These girls were excluded from analysis and this left a sample size of 140 girls. After the questionnaire 6 girls from each school, selected by the senior woman teacher, were asked to take part in focus groups. The senior woman teacher and headmaster from each school were interviewed.

4.2 Knowledge
Table 1 shows the girls’ responses to questions on their knowledge of menstruation. A lack of knowledge was reported amongst some girls where 36.3% reported menstruation was a disease, 23% thought pregnant women menstruated and 27.8% thought menstrual blood came from the stomach. Even more prevalent were the misconceptions that menstrual blood contains harmful substances (62.4%), pain during menstruation means someone is unhealthy (49.3%) and it is harmful for a woman’s body if she runs or dances during her period (48.9%).

<table>
<thead>
<tr>
<th></th>
<th>True n(%)</th>
<th>False n(%)</th>
<th>Valid N (participants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menstruation is a disease</td>
<td>49(36.3)</td>
<td>86(63.7)</td>
<td>135</td>
</tr>
<tr>
<td>Pregnant women menstruate</td>
<td>31(23.0)</td>
<td>104(77.0)</td>
<td>135</td>
</tr>
<tr>
<td>Menstrual blood comes from the</td>
<td>37(27.8)</td>
<td>96(72.2)</td>
<td>133</td>
</tr>
<tr>
<td>stomach where food is digested</td>
<td>116(85.3)</td>
<td>20(14.7)</td>
<td>136</td>
</tr>
<tr>
<td>Menstrual blood comes from the</td>
<td>83(62.4)</td>
<td>50(37.6)</td>
<td>133</td>
</tr>
<tr>
<td>womb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menstrual blood contains</td>
<td>66(49.3)</td>
<td>68(50.7)</td>
<td>134</td>
</tr>
<tr>
<td>harmful substances</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain during menstruation means</td>
<td>66(48.9)</td>
<td>69(51.1)</td>
<td>135</td>
</tr>
<tr>
<td>someone is unhealthy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is harmful for a woman’s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>body if she runs or dances</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>during her period</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.3 Product use

Figure 1 illustrates what girls reported as products they normally used during menstruation. The most common product used was cloth (87.1%). This was followed by the use of purchased sanitary pads (47.1%), toilet paper (37.1%) and cotton (35.7%).

4.4 Disposable sanitary pads

Just over a third of girls (37%) had bought disposable sanitary pads in the last 6 months but the majority of participants (87.8%) had been unable to buy disposable sanitary pads in the past. 61.6% of girls reported that this was due to a lack of money available and 34.6% reported that this was due to a lack of availability of disposable sanitary pads in shops. This response is summarised in Table 2.

Table 2: Summary of girls’ responses on the availability of disposable sanitary pads (N=140)

<table>
<thead>
<tr>
<th>Response</th>
<th>True n(%)</th>
<th>False n(%)</th>
<th>Don’t know n(%)</th>
<th>Valid N (participants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you bought disposable sanitary pads from the shop in the last 6 months?</td>
<td>50(37.0)</td>
<td>85(63.0)</td>
<td>0(0)</td>
<td>135</td>
</tr>
<tr>
<td>Have you ever wanted to buy disposable sanitary pads from a shop but been unable to?</td>
<td>122(87.8)</td>
<td>17(12.2)</td>
<td>0(0)</td>
<td>139</td>
</tr>
<tr>
<td>I do not have enough money to buy disposable sanitary pads from a shop</td>
<td>85(61.6)</td>
<td>39(28.3)</td>
<td>14(10.1)</td>
<td>138</td>
</tr>
<tr>
<td>There are no disposable sanitary pads in the shop</td>
<td>47(34.6)</td>
<td>62(45.6)</td>
<td>27(19.9)</td>
<td>136</td>
</tr>
</tbody>
</table>
4.5 Absenteeism

Around two thirds of girls (61.7%) reported normally missing some days of school in a month because of menstruation. Figure 2 shows the number of days in a month girls reported missing school due to menstruation. Overall, the mean number of days missed was calculated to be 1.64 (n = 133, SD = 1.835).

Figure 2: Bar graph showing the number of days in a month of school missed due to menstruation (N=133)

4.6 Reasons for menstrual related absenteeism

The majority of girls (63.8%) agreed that a lack of a private place for girls to wash and change at school caused menstrual related absenteeism from school. The second most prevalent reason was the fear of staining clothes (59.4%) followed by the discomfort from bloating and tiredness (55.1%) and then pain (51.4%). The lack of sanitary pads and lack of a place for disposal of sanitary products were less prevalent reasons for absenteeism at 45.7% and 43.5% respectively. The rest of the responses are displayed in Table 3.

<table>
<thead>
<tr>
<th>Reason</th>
<th>True n(%)</th>
<th>False n(%)</th>
<th>Valid N (participants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of staining my clothes</td>
<td>82(59.4)</td>
<td>56(40.6)</td>
<td>138</td>
</tr>
<tr>
<td>Afraid of others making fun of me</td>
<td>64(46.7)</td>
<td>73(53.3)</td>
<td>137</td>
</tr>
<tr>
<td>Menstruation can cause pain</td>
<td>71(51.4)</td>
<td>67(48.6)</td>
<td>138</td>
</tr>
<tr>
<td>Menstruation can cause discomfort from bloating or tiredness</td>
<td>75(55.1)</td>
<td>61(44.9)</td>
<td>136</td>
</tr>
<tr>
<td>There isn’t anywhere private for girls to wash and change at school</td>
<td>88(63.8)</td>
<td>50(36.2)</td>
<td>138</td>
</tr>
<tr>
<td>There is nowhere to dispose of sanitary products in school</td>
<td>60(43.5)</td>
<td>78(56.5)</td>
<td>138</td>
</tr>
<tr>
<td>I do not have sanitary pads</td>
<td>63(45.7)</td>
<td>75(54.3)</td>
<td>138</td>
</tr>
</tbody>
</table>
4.7 Focus groups
The girls were asked if they could place the solutions in a ladder formation to rank what they would prioritise as the most important solutions to girl’s menstrual problems at their school. Table 4 shows their collective agreed response. The responses are ranked in order from most important (1) to least important (6). The more rural schools 3, 4 and 5 all prioritised re-usable pads as the most important solution whereas two out the three schools which were closer to the nearest village prioritised disposable pads as the most important solution. In all the schools where reusable pads were ranked as number 1, a place to wash the pads followed at number 2. All schools ranked a place to dispose of pads as a low priority.

Table 4: Collective response at different schools to prioritizing solutions (1 = most important, 6 = least important)

<table>
<thead>
<tr>
<th>School</th>
<th>Disposable pads</th>
<th>Lessons about coping with periods</th>
<th>Medicine for pain</th>
<th>Place to wash pads</th>
<th>Reusable pads</th>
<th>Place to dispose pads</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>School 2</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>School 3</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>School 4</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>School 5</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>School 6</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

4.8 Interviews
Key themes that emerged were lack of training, affordability of sanitary pads, menstrual related absenteeism, embarrassment, lack of facilities, methods of disposal, solutions for menstrual related absenteeism and lack of government funds.

4.9 Summary
All questions in the questionnaire had a high response rate of 95% or higher suggesting the results are representative of the population in this study.
Chapter 5: Discussion and Limitations

5.1 Introduction
The aim of the study was to gain information on the experiences of low-income schoolgirls in rural Uganda during menstruation. The findings show a lack of knowledge about menstruation, high use of alternative menstrual material because of the inability to buy sanitary pads, high frequency of menstrual related absenteeism mainly due to the lack of facilities at school and the prioritisation of re-usable or disposable pads as a solution to menstrual related absenteeism.

5.2 Knowledge
The fact that a large number of girls in this study thought menstruation was a disease is supported by other studies in Tanzania and India where girls also reported this belief (Sommer 2009a, Drakshayani 1994). However, data in these studies was collected by qualitative methods so no statistics are available to directly compare results. This also draws comparisons to studies in Malawi and Nigeria where girls did think menstruation was a natural process or didn’t perceive menstruation as a physiological process (Pillitteri 2011, Adinma 2008). Although not directly comparable, as those who didn’t think menstruation was a disease may still have thought menstruation wasn’t natural or physiological process, it highlights a perspective amongst many sub-Saharan African girls that menstruation isn’t normal.

More than half of the girls incorrectly answered that menstrual blood contained harmful substances. This could be due to misinterpretation of the question, as menstrual blood if left unchanged or unwashed on pads can cause infection or, like other studies in Nigeria and Malawi, girls may think menstruation is the elimination of ‘bad blood’ (Adinma 2008, Pillitteri 2011).

Although no studies in sub-Saharan Africa are available to compare results for the other questions, overall the results in this study highlight a lack of knowledge amongst girls in rural Uganda on menstruation. The level of knowledge on menstruation amongst the girls in this study is similar to that of girls in Kenya (McMahon 2011) but less than that discovered in studies on girls in Nigeria (Abioye-Kuteyi 2000, Lawan 2010). This may be because, although the sample size in Kenya was small, the population of the study was much more similar to that of this study. Girls from the study in Kenya were from low-income, rural, primary schools. Conversely, the girls from the studies in Nigeria were from secondary schools with some schools being private or urban schools. However, the age of the girls was similar across all studies suggesting the girls in this study and the Kenyan study are those who have not been able to progress to secondary school, perhaps due to lack of funds. These results could therefore reflect an association of socio-economic status and level of knowledge on menstruation.

Reasons as to why the level of knowledge on menstruation amongst the girls in this study was low came up in interviews with a member of UNICEF Uganda and senior women teachers from the schools. When asked whether MHM was in the school curriculum, the Supervisor of WASH in Uganda stated that it was in the curriculum but it was not being enforced. Contrary to this, in all six schools the senior women teachers said that girls and boys learnt about menstruation as a topic in Science but girls also had extra lessons, usually on a Wednesday afternoon, with female teachers to learn about health issues like menstruation. A few senior women teachers mentioned teaching girls about ‘how to handle themselves’ on their period, such as how to make and use a cloth. However, all senior women teachers said they had received no training on how to teach about menstruation suggesting that the quality of teaching may be less than adequate because of poor knowledge demonstrated in this study.
5.3 Product use

More girls in this study used traditional materials, like cloth, rather than sanitary pads. These are similar results to those found by studies in Nigeria, Kenya and Malawi (Adinma 2008, Abioye-Kuteyi 2000, McMahon 2011, Pillitteri 2011). On the other hand, the results from this study are different to that reported by other studies in Kenya and Uganda. In one Kenyan study it was reported that only a quarter of girls used cloth but a half of girls used disposable pads (Wilson 2012). Disposable pad usage was similar to this study but significantly fewer girls in Kenya reported using cloths. Interestingly, only a few girls in a study in Uganda used traditional materials (Crofts 2012). Variations in results to this study could be due to the fact that Crofts’ study was in secondary schools where girls are more likely to be able to afford sanitary pads and, because of the qualitative methods used in her study, girls may have underestimated traditional material use (Rhodes 1995). The product used to manage menstruation varied between different populations and, because of a lack of data on socio-economic demographics of the populations, associations between these factors and product use cannot be made.

5.4 Disposable sanitary pads

Girls in this study found it difficult to use disposable pads partly because of finance and access to relevant shops. The amount of girls in this study who were able to buy sanitary pads in the last six months is much less than in a study in Kenya. This is in keeping with their higher reporting of sanitary pad use amongst girls in their study (Wilson 2012). In the Kenyan study more girls reported being unable to buy sanitary pads because of money but less girls reported the inability to buy pads was due to the lack of availability in shops. This could be due to the extremely rural location of many of the villages where the schools were located in this study. Most schools and therefore village shops lacked accessibility because of poor road conditions. The cost of pads was also seen as a significant issue for girls in Tanzania, Kenya and Uganda (Sommer 2009, McMahon 2011, Crofts 2012). However, there is not quantitative data from these studies to compare results. On the other hand, the picture seemed much different at the private primary school visited in this study where the senior woman teacher stated that most girls are able to afford and use pads. This is consistent with the high sanitary pad usage reported by private schools in Crofts’ study in Uganda (Crofts 2012). Disposable sanitary pads were clearly the preferred method for managing menstruation but lack of money and availability in shops has left girls in rural, government, primary schools in Uganda unable to buy them.

5.5 Menstrual related absenteeism

Almost two thirds of girls reported normally missing some days of school per month because of menstruation and this is supported by the fact that the senior women teachers from all 6 schools stated that girls missed school during their period. This figure is greater than that reported by studies in Kenya, Malawi and Uganda (Wilson 2012, Pillitteri 2011, Crofts 2012). With regard to the study in Uganda, because of the qualitative methods used and the fact that most girls knew someone that did miss school because of menstruation, this was likely to be an underestimate (Rhodes 1995).

The amount of days missed of school per month due to menstruation reported in this study is extremely similar to that reported by studies in Kenya and Malawi (Wilson 2012, Pillitteri 2011). Afripads in Uganda reported that girls miss up to 5 days of school each month due to menstruation but it is unclear where this figure originated from (Afripads 2013). This study found that one girl missed 10 days of school per month due to menstruation but the majority of girls missed less than 3 days of school suggesting Afripads’ figure may not be a true representation of the burden of menstruation on schoolgirls in Uganda.

The most cited reason girls missed school during menstruation was the lack of privacy to wash and change at school. This figure is greater than that reported by another study in Uganda. This may be due to the relatively superior toilets reported at the schools in this other study (Crofts 2012). This lack of facilities for
girls at school was also a common theme that came up in interviews with senior women teachers from both the government schools and the private school, and in other studies in East Africa (Pillitteri 2011, Sommer 2009, McMahon 2011, Sommer 2013).

Fear of staining their clothes was the second most prevalent reason girls missed school during menstruation, reflecting the inability of cloths and other traditional methods to prevent leakage of menstrual blood. This figure is just over five times the percentage of girls that reported going home when cloths leaked in a study in Malawi (Pillitteri 2011). However, more girls in the Malawian study reported using reusable menstrual cloths compared to this study. Perhaps this shows that in rural Uganda it is less culturally acceptable to show any menstrual blood or girls in Malawi have a more effective method of attaching cloths to underwear to prevent leakage. This culture of embarrassment of menstruation in Uganda was further reflected by the fact that a large percentage of girls were afraid of others making fun of them during menstruation. A senior woman teacher from one of the schools said that girls during menstruation are shy and will miss some days of school because other pupils make fun of her. One headmaster also said that when boys see a girl is menstruating they start laughing at her and then she feels uncomfortable.

Over half of girls stated that they missed school during menstruation because of pain and discomfort from bloating and tiredness. The fact that almost half of girls in this study thought pain during menstruation meant someone was unhealthy, may further influence absenteeism due to the girls’ belief that they are unwell. Pain was not the most cited menstrual problem, unlike another study in Uganda (Crofts 2012). This could be due to the fact that most girls in Crofts’ study had access to sanitary pads and the facilities at schools were relatively superior to this study. Therefore, girls in this study may see pain as a relatively less significant issue compared to the leakage of sanitary material and lack of facilities at school.

Surprisingly, despite the fact that a majority of girls in this study have been unable to buy sanitary pads at some point, under half stated they missed school during menstruation because of a lack of sanitary pads. This suggests that when girls do not have access to sanitary pads they are able to find alternative materials to be able to attend school. However, the number of girls who cited lack of pads as a reason for absence from school was greater than that reported in another study in Uganda (Crofts 2012). This figure reflects the larger usage of sanitary pads amongst secondary schoolgirls in Crofts study in Uganda.

Despite the clear lack of bins or incinerators to dispose of sanitary products in the schools, less than half of girls stated there was nowhere to dispose of sanitary products. This is because all senior women teachers from the government schools and the private school said they disposed of their pads in the pit latrine and did not see this as an environmental issue. This figure is substantiated by another study in Uganda where most girls disposed of sanitary materials in the pit latrine (Crofts 2012). This lack of a place of disposal for pads was also discovered in other studies in East Africa (Sommer 2013, Pillitteri 2011, Sommer 2009).

Additionally, in interviews with senior women teachers, a few other reasons came up as to why girls in rural Uganda miss school during menstruation. The senior woman teacher from the private school said that girls in the community believe that when you get married the pain from menstruation stops, so this encouraged girls to run away from school to get married. Although menstruation has been linked to early marriage by the fact that menarche is a symbol of fertility and culturally this may mean a girl is ready to be married, this myth is a newly discovered link. Educational interventions in this region would need to ensure that myths like this are corrected. In response to the question ‘Are there any other reasons menstruation makes you miss school?’ in the questionnaire, one girl responded with ‘I fear going to school because the teacher may beat me and my cloth may fall down’. A female teacher from one of the schools also said that ‘girls don’t feel confident during menstruation because when you want to beat her she feels uncomfortable’. Despite beating children at school being illegal in Uganda, it was witnessed at a few schools and was commonly
accepted the community and students. Great care and cultural awareness would be needed for any intervention that would look at trying to prevent this.

5.6 Prioritizing solutions

The reason why the more rural schools prioritised re-usable pads over disposable pads can be explained by a theory that investment in sanitation enables people to progress to the next ‘rung’ of the sanitation ladder (Morella 2008). Those girls who live nearer to the large market would be more exposed to disposable pads. Therefore, for them, disposable pads seem like the best possible solution. However for the more rural girls, who may be less exposed to disposable pads because of their distance from the market, they may see re-usable pads as the best solution compared to the cloths they use. This is supported by another study in Uganda where girls from poorer schools suggested the use of re-usable Afripads but girls from richer schools perceived them as dirty (Crofts 2012). One senior woman teacher’s reasoning as to why she would prioritise pads was that if the government sent money this would be consumed by the head teacher. This universal preference for pads is continuous with other studies in East Africa discussed earlier and should be taken into consideration by organisations designing interventions to prevent menstrual related absenteeism. Evaluation of the population for their preference over re-usable or disposable pads should also be undertaken.

Despite the fact that a place to wash pads was ranked after pads, more girls in this study reported that a lack of facilities at school caused absenteeism from school compared to lack of pads. This is important for organisations to consider when donating pads to schoolgirls as, although girls state a preference for pads, this may not effectively reduce absenteeism from school unless complimented by improved facilities at school.

Lessons about coping with periods and medicine for pain were ranked as middle priorities. A few senior women teachers demanded education for girls through books or radio programmes ‘to make girls feel proud when they menstruate because it is a process that prepares them to be future mothers’. UNICEF mentioned adapting the ‘Growth and Change’ book, designed by Sommer in Tanzania, for use in Uganda. One headmaster recommended refresher courses for the training of teachers. A MHM book and teacher training seem like well needed interventions due to the lack of education on menstruation demonstrated by the girls’ responses to the knowledge questions in this study. Several headmasters requested medicine to help manage the girls’ pain which contradicts a statement from UNICEF Uganda that ‘every school has aspirin and paracetamol’. Although not a top priority, over half of girls in this study miss school because of the pain from menstruation. In a study in Nigeria it was noted that there was a greater prevalence of severe menstrual pain in those who had no teaching on menstruation so interventions that include teaching should look at correcting the misconception amongst these girls that pain during menstruation means that someone is unhealthy (Aniebue 2009).

All schools ranked a place to dispose of pads as a low priority as pit latrines are seen as an adequate place of disposal. Therefore, organisations who provide disposable pads as an intervention should consider educating the girls on the importance of hygienic and eco-friendly places of disposal.

5.7 Limitations

A major limitation to the collection of data was the language barrier. Despite using a translator and going through each question slowly, some words could not be translated directly into the local language of Rukiga. This could have led to some misinterpretation of questions. This is illustrated by the fact that although 8% of girls reported normally using tampons during menstruation it was known that tampons were not available at all in Uganda let alone in the local area with none of the teachers having heard of a tampon before. Also, the participants felt under pressure to speak English in the focus groups and interviews out of fear of being
Candidate number: 42374

punished by peers or authorities. The confidentiality and privacy of the conversations was emphasised but the pressure to speak English may have meant participants weren’t able to fully express their opinions.

A conceptual barrier with the questionnaires was found. The girls had never been asked to complete a questionnaire before so some girls found it confusing and difficult to understand the concept. This was addressed by using example questions on the blackboard and having simple responses to questions such as ‘yes’ or ‘no’.

Due to the embarrassing and taboo nature of the topic, girls were hesitant to talk about it. Girls were assured of the anonymity of their responses but the embarrassment may have led to under-reporting on certain questions in the questionnaire. It was also believed that teachers influenced girls’ responses by being present in the room. The girls always seemed much freer in asking questions when the teachers were not present due to reduced fear of being scolded or punished.

Additionally, there could have been an underestimation on the scale of the problem due to the fact that some girls viewed the pain from menstruation as illness rather than menstrual related absenteeism. This is illustrated by the fact that half of girls thought pain during menstruation meant someone was unhealthy. The data in this study were dependent on self-reporting and this could have led to recall bias causing an over-estimation of issues due to selective memory on particularly bad months.

The fact that we asked the senior woman teacher to pick girls to take part in the focus groups could have led to selection bias. The senior woman teacher was likely to have picked the most intelligent girls in the class to best represent the school. However, these girls may not be a true representation of the girls in this population, with the views of the most vulnerable girls being missed. The less intelligent girls are more likely to have problems with school absenteeism due to menstruation and may have ranked solutions to menstrual problems differently in the focus groups. Also, in the focus groups, we found girls tended to always agree with each other and never wanted to debate answers for prioritising solutions. This may be genuinely because they all agreed with each other, or it may be that they perceived agreeing with each other easier, causing acquiescence bias (Bowling 2005). This was reduced by asking open questions and asking girls individually what they personally thought.

There was a common misconception amongst staff at schools that we were inspectors. Despite reassuring them we were just students collecting research for our dissertations, suspicion on the sensitivity of the topic may have led to under-reporting of issues in interviews with the senior women teachers and headmasters of each school (Singer 1992).

Finally, this study only looked at the effects of menstruation on schooling through absenteeism. In interviews with senior women teachers and headmasters it was also discovered that girls tended to concentrate and participate less in lessons during menstruation. To measure the overall effects of menstruation on schooling, methods to quantify these measurements need to be explored. This could perhaps be done by looking at the long term effects on schooling such as future income and employment.

5.8 Summary

Overall, the lack of knowledge on menstruation amongst the girls in this study is likely a result of the lack of teacher training on the subject. A lack of finances and access to shops to buy pads caused most girls to use alternative materials such as cloth during menstruation. The evidence strongly suggests that girls miss school because of menstruation in Uganda. This is mainly due to lack of facilities at school but girls prioritised pads as the top solution to prevent absenteeism, with girls in the more rural areas prioritising reusable pads over disposable. Despite several limitations on the design and implementation of the questionnaire, the effect they may have had on results was minimal due to preventative steps taken. Therefore, the results in this
study are likely to represent the experiences of Ugandan girls in rural, government schools during menstruation.
Chapter 6: Conclusion and Recommendations

6.1 Conclusion
This study shows that menstrual related absenteeism from school is a significant issue for girls in rural government schools in Uganda. The results also suggest that menstruation has a bigger impact on absenteeism in primary schools compared to secondary schools in Uganda. Overall, interventions that target reducing menstrual related absenteeism need to take a holistic approach. Although girls expressed pads as their top priority as a solution, without simultaneously improving facilities at school and educating girls on correct MHM, pads are unlikely to significantly reduce absenteeism alone. These results also highlight the differences between populations within Uganda and between countries in East Africa. Therefore it is important that, before any intervention is planned, the needs, cultures, facilitators and barriers of that population are explored.

6.2 Recommendations

6.2.1 Practice
In light of UNICEF Uganda’s plans to adapt Sommer’s puberty book for use in Uganda, findings from this study would suggest that this may not be practical. Girls in this study had very poor English and so the book would need to also be in Rukiga to reach the most vulnerable girls in the population and those who need the book most. However, it would be expensive to translate the book into all of Uganda’s 41 languages and not all languages that are spoken in East Africa are written languages (Lewis 2013). Addressing the lack of teacher training on teaching about MHM could be a more effective solution to address the lack of knowledge on menstruation amongst schoolgirls.

6.2.2 Policy
All school headmasters in this study stated the lack of government funding meant that they were unable to provide facilities at school for girls to wash and change menstrual materials in private. Girls listed this lack of facilities as the most prevalent reason for absenteeism from school during menstruation. Government policy makers need to consider investing more money into facilities for girls at school to reduce female absenteeism and therefore increase economic productivity of future generations.

6.2.3 Research
This study warrants the need for a randomised controlled trial in East Africa into the potential for an intervention in reducing menstrual related absenteeism from school. A complex intervention is needed as it clear there are many factors that prevent girls from attending school during menstruation. This study also shows that research into the target population is needed to guide MHM interventions as the needs and MHM practices vary between populations.
Appendix 1: Questionnaire

Validating a Questionnaire to assess Girls’ Menstrual Hygiene Practices in East Africa

Number:
Age:

Nobody apart from the research team will know what you write in the questionnaire. Your responses will be kept confidential.

We would really like you to complete the questionnaire but it is up to you to decide whether or not you do so. If you decide you do not want to complete this questionnaire, this will not affect your relationship with your teacher or anybody else.

Please tick the responses that are true for you or write your response in the space provided.

1. Have you started your period?
   Yes [ ] No [ ]

2. Please indicate whether you think the statements below are true or false.
   (Please tick to indicate answer)

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old women do not menstruate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menstruation is a disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pregnant women menstruate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menstrual blood comes from the stomach where the food is digested</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menstrual blood comes from the womb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menstrual blood contains harmful substances</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain during menstruation means that someone is unhealthy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is harmful for a woman’s body if she runs or dances during her period</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Validating a Questionnaire to assess Girls’ Menstrual Hygiene Practices in East Africa

Questionnaire, version 9; 26th March, 2013.
Validating a Questionnaire to assess Girls’ Menstrual Hygiene Practices in East Africa

9. Are there any other reasons you miss school? (Please write them here)

Menstruation
Menstruation can make life more difficult for girls. It can be embarrassing but it's important to talk about it.

10. Please tick the products you have heard of.

<table>
<thead>
<tr>
<th>Tampon</th>
<th>Sanitary Pad</th>
<th>Menstrual Cup</th>
<th>Disposable pad bought from a shop</th>
<th>Reusable pad bought from a shop e.g. Afripads, home-made pad</th>
</tr>
</thead>
</table>

11. Please tick what you normally use during menstruation.

<table>
<thead>
<tr>
<th>Cloth</th>
<th>Tampon</th>
<th>Purchased sanitary pad</th>
<th>Menstrual Cup</th>
<th>Toilet paper</th>
<th>Mattress</th>
<th>Natural materials (mud, cow dung or leaves)</th>
</tr>
</thead>
</table>

If you use any other products please write below.

Validating a Questionnaire to assess Girls’ Menstrual Hygiene Practices in East Africa

12. Do you insert any of these products into your vagina?

Yes [ ] No [ ]

If yes what type of product?

13. Have you bought disposable sanitary pads from a shop in the last six months?

Yes [ ] No [ ]

14. Have you ever wanted to buy disposable sanitary pads from a shop but been unable to?

Yes [ ] No [ ]

15. Please mark whether these statements are true or false for you:

| I do not have enough money to buy disposable sanitary pads from a shop | True [ ] False [ ] Don’t know [ ] |
| There are no disposable sanitary pads in the shops | True [ ] False [ ] Don’t know [ ] |

16. Does menstruation make you miss school?

Yes [ ] No [ ]

17. Does menstruation make you miss paid work?

Yes [ ] No [ ]

Questionnaire to assess Girls’ Menstrual Hygiene Practices in East Africa.
Questionnaire, version 9, 26th March, 2013.
Validating a Questionnaire to assess Girls’ Menstrual Hygiene Practices in East Africa

20. Does menstruation stop you from walking far?
Yes ☐ No ☐

21. Does menstruation make you unable to carry out daily activities like cooking or fetching water?
Yes ☐ No ☐

22. Does menstruation make you unable to do sport or play with children?
Yes ☐ No ☐

23. Are there any other things that menstruation makes you miss?
(Please write them here)

24. On a scale of 0 to 10, indicate the average level of pain you experience during your period if 10 is the worst pain you’ve ever had and 0 is pain free (Please circle your response)
0 1 2 3 4 5 6 7 8 9 10

25. How many days do you bleed each month? (Please write your answer)

26. How many days of school did you miss last time you menstruated?
(Please circle your response)
0 <1 1 2 3 4 5 6 7 8 9 10 10+

27. I miss school during menstruation because:

<table>
<thead>
<tr>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of staining my clothes</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>I am afraid of others making fun of me</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>Menstruation can cause pain</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>Menstruation can cause discomfort from bloating or tiredness</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>There isn’t anywhere private for girls to wash and change at school</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>There is nowhere to dispose of sanitary products in school</td>
<td>☐ ☑</td>
</tr>
<tr>
<td>I do not have sanitary pads</td>
<td>☐ ☑</td>
</tr>
</tbody>
</table>

28. Are there any other reasons menstruation makes you miss school?
(Please write them here)

Your family

This section asks questions about your home and family so we know a little bit more about what life is like for you outside school.

29. Over the past year have you or your family ever gone without enough food to eat?
Yes ☐ No ☐
Validating a Questionnaire to assess Girls’ Menstrual Hygiene Practices in East Africa

30. Over the past year have you or your family ever gone without enough clean water for home use?
   Yes ☐ No ☐

31. Over the past year have you or your family ever gone without medicine or medical treatment?
   Yes ☐ No ☐

32. Over the past year have you or your family ever gone without enough fuel to cook your food?
   Yes ☐ No ☐

33. Over the past year have you or your family ever gone without school expenses for fees, uniforms or books?
   Yes ☐ No ☐

34. Over the past year have you or your family ever gone without a cash income?
   Yes ☐ No ☐

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Self-esteem

35. Please mark whether these statements are true for you most of the time. (Please tick each row in one of the columns)

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am satisfied with myself</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At times, I think I am no good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel that I have a number of good qualities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am able to do things as well as most other people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel I do not have much to be proud of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel useless at times</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel that I’m a person of worth, at least equal to others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I wish I could have more respect for myself</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall, I feel that I am a failure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take a positive attitude toward myself</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Questionnaire to assess Girls’ Menstrual Hygiene Practices in East Africa.
Questionnaire, version 9, 26th March, 2013.
Validating a Questionnaire to assess Girls’ Menstrual Hygiene Practices in East Africa

36. Please mark whether these statements are true for you during your period: (Please tick each row in one of the columns)

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am satisfied with myself</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At times, I think I am no good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel that I have a number of good qualities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am able to do things as well as most other people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel I do not have much to be proud of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel useless at times</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel that I’m a person of worth, at least equal to others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I wish I could have more respect for myself</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall, I feel that I am a failure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take a positive attitude toward myself</td>
<td></td>
<td></td>
</tr>
<tr>
<td>During my period I feel less confident than when I am not on my period</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 2: Information sheet for participants

Validating a Questionnaire to assess Girls’ Menstrual Hygiene Practices in East Africa

Information sheet

You are being invited to take part in a study to do with Girls’ Menstrual Hygiene Practices.

This will involve filling out a questionnaire at the beginning of the study and again 2 weeks later. You will also be invited to take part in a small group discussion. This information sheet explains what we are trying to find out and what we will be doing.

What are we collecting information about?

It can often be difficult for girls to attend school. We want to ask you some questions about attending school. People are often embarrassed to talk about menstruation but it is something school girls all over the world have to cope with. We want to find out how girls in your school cope with menstruation. We are collecting this information because we want to help girls stay in school when they are menstruating. After you have filled in the questionnaire we would like to have a short discussion with you about what you thought of the questions. We would like to audio record these discussions but will only do so with your agreement. The recordings will be kept securely so nobody other than the research team can listen to them. They will then be destroyed after 10 years along with University of Bristol regulations.

Do I have to take part?

We would really like you to take part but it is up to you to decide whether or not you do so. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you do decide to take part you are still free to leave the study at any time and without having to give a reason. If you decide not to take part this will not affect your relationship with your teacher or anybody else.

What will happen if I agree to take part?

Today we will ask you to complete a questionnaire. The questionnaire will take approximately half an hour to complete. It will be a mixture of short answers and ticking the best answer.

We will come back to the school in 1-2 weeks and ask you to complete a follow-up questionnaire and if you are happy to do so, take part in small discussion groups to talk about any problems you had answering the questions.

What if I am upset by anything in the questionnaire?

You can speak to us after the questionnaire today or when we return in 1-2 weeks time. You don’t have to answer any questions you don’t want to and there will be space for you to write down any problems at the end of the questionnaire. You are welcome to discuss these things with friends or family. You can also report any problems to your teacher who can inform uswhen we return.

Will anybody know what I wrote on the question sheet?

We will give you a number to write at the top of your questionnaire so that only the research team will know what you wrote. This is only to match up the two questionnaires. This information will be kept securely on a database until it is destroyed after 10 years.

What will happen to the information collected?

We want to use what you write to help researchers understand more about what it is like to be a school girl in Africa and what needs to be done to improve girls’ menstrual health.

We may publish it in books and magazines but any quotes will not have your name attached.

If you would like to ask any more questions please contact:

Gina Prestwich – rp0493@bristol.ac.uk

Robyn Boosey – rb1429@bristol.ac.uk

Appendix 3: Consent form for participants

Consent form

Please tick all the following to confirm that:

- I have read the information sheet (Version 1, 24\textsuperscript{th} December 2012) or it has been read to me so that I understand it. I have had the chance to ask questions

- I know that I can withdraw from the study at any time without having to give a reason for doing so

- I am willing for the small discussion groups to be recorded

- I know that any information used will not have my name on it

________________________  ______________  __________________________
Name of participant      Date            Signature

________________________  ______________  __________________________
Name of researcher        Date            Signature

Questionnaire to assess Girls’ Menstrual Hygiene Practices in East Africa. Consent form, version 1; 24\textsuperscript{th} December 2012
Appendix 4: Additional information on selection of schools

In Ugandan primary schools, there are often girls who are much older than the average UK age for that year of school because of girls not passing exams to move on to the next year. These are most likely to be the poorest girls who have been unable to complete the year due to lack of school attendance or lack of money to take exams. It was observed that most of the girls who participated lacked shoes or uniform. The poverty was reflected in the fact that over the past year 58.6% (N=140) of girls or their families had gone without enough food to eat, 47.1% (N=140) without clean water for home use, 71.9% (N=139) without medicine or medical treatment, 52.9% (N=140) without enough fuel to cook food, 77.9% (N=140) without school expenses for fees, uniforms or books and 71.2% (N=139) without a cash income. Also, in Ugandan culture it is customary that if a family or extended family has any spare money, this is invested in sending children to private school where teaching is deemed much more proficient. Many teachers in the government primary school could not or did not turn up to teach lessons due to lack of or delayed payment from the government.
Appendix 5: Ethical approval letter

“Life in all its fullness” John 10:10

Church of Uganda Kisiiizi Hospital
P. O. Box 109, Kabale, Uganda

March, 2013

To whom it may concern

Re: Irise Pilot Study

This is to confirm that the Management Committee of Church of Uganda Kisiiizi Hospital has approved a request by Irise to conduct a pilot study relating to research into the issue of access to menstrual hygiene management and how this affects school absenteeism in teenage girls. This pilot will involve validating a questionnaire to be used in the main study.

We have agreed ethical approval for this project.

Yours faithfully,

Dr. Ian Spillman  FRCPCH
Medical Superintendent
Bibliography


Bowling, A. “Mode of questionnaire administration can have serious effects on data quality.” Journal of Public Health 27, no. 3 (2005): 281-291.


Candidate number: 42374


P&G. “Protecting Futures.”


Wilson, E et al. “Pilot study: evaluating the acceptability and short term effect of teaching Kenyan school girls to make reusable sanitary towels on absenteeism and other daily activities: A partial preference parallel group, cluster randomised control trial.” School of Health and Related Research (ScHARR), University of Sheffield 27 (2012).

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1 Irise International is a charity sparked by the concerns and stories of African women and girls themselves. During evaluations in Kenya, women and girls reported the problems they faced affording sanitary towels and the unhygienic alternatives or humiliation they faced as a result. They offer training in using the Mwezi sanitary pad teaching pack to organizations in the UK and provide resources and training that students can use on their electives or volunteering in Africa. http://www.irise.org.uk/

2 Visionary Soap Company Limited © is a fair-trade body care company based in the UK who also dedicate time to sustainability, women’s economic development and the environment. http://www.visionarysoap.co.uk/index.asp