

# Determinants of Menstrual Hygiene among Primary School Girl Projects In Nambale Division of Busia County, Kenya

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**Abstract:** *Many initiatives around the world are now addressing adolescent girls' menstrual hygiene management needs in coordination with ongoing efforts to improve water, sanitation and hygiene facilities and services in schools. In this regard, various organizations run hygiene projects in public primary schools in Busia County. Can it be said that these hygiene projects have equipped school girls with proper information about menstruation and menstrual hygiene. This study specifically aimed at revealing the participants' perceptions, knowledge and practices in relation to menstrual hygiene. The findings both highlighted gaps that hygiene projects need to address, as well as provided baseline status for organizations seeking to implement hygiene projects in the area. A cross sectional, exploratory and descriptive study approach was adopted using a stratified sampling technique. Data was collected from four focus group discussions and three hundred pre tested questionnaires administered to girls in classes 6, 7 and 8, from four primary schools. 89% of the respondents were found to view menstruation as a normal body function which signifies that one is now an adult. Mothers were the main source of menstrual information for 70% of the girls even though 49% of the participants' mothers are only educated to primary school level. Almost all the girls lacked the scientific knowledge about menstruation while 64% preferred to stay home when their menstrual flow is heavy. Gaps to be addressed include the misconception that menarche makes one an adult because some girls drop out of school at this stage to get married; demystifying menstruation early so that girls are not psychologically ambushed by their first menstrual experience; providing scientific knowledge about menstruation; including mothers and not just teachers in trainings on menstruation and addressing the inadequate MHM facilities which highly contribute to school absenteeism.*

**Keywords:** Perceptions, Practices, Menstruation, Menarche, Adolescent girls, Puberty, Experience, Menstrual hygiene, Pre Menstrual Syndrome

## 1. Introduction

In the developing world, menstruation and menstrual practices are associated with taboos and socio-cultural restrictions yet good hygienic practices are essential during menstruation (Sharma et al, 2013). Research conducted across numerous countries and contexts reveal the discriminatory nature of many school environments, with menstruating girls finding themselves unable to adequately manage their monthly menses with safety, dignity and privacy (UNICEF, 2015). In recognition of this, many initiatives around the world are now addressing adolescent girls' menstrual hygiene management (MHM) needs in coordination with ongoing efforts to improve water, sanitation and hygiene (WASH) facilities and services in schools. Public primary schools in Busia County have a history of various organizations, running hygiene programs/projects within them. These include the National government through the Schools National Sanitary Towels program; County government through the Constituency Development Fund (CDF); NGOs like International Christian Services (ICS), Amref, Innovations for Poverty Action, Evidence Action and World Vision; and individual well wishers like area leaders. Project activities include training health teachers on MHM with the aim of improving MHM by primary school girls; supply of sanitary towels; providing water tanks; building toilets;

and supporting water, sanitation and hygiene projects in public schools.

Globally about 52% of the female population is of reproductive age, meaning menstruation is part of their normal life and menstrual hygiene is therefore an important part of basic hygienic practices (House, House, Mahon, and Cavill (2012). A number of globally conducted studies on reproductive health found that supporting menstrual hygiene is vital for females in relation to Water Supply, Sanitation and Hygiene Education (WASHE) (Lawan et al, 2010). The studies disclose that access to adequate information on menstruation and reproductive health can help girls and women in understanding their menstrual cycle and in relation thereto, practicing proper menstrual hygiene. This would enable females to live healthy, productive and dignified lives (Ten, 2007; Nagar & Aimol, 2011).

According to Tarhane and Kasulkar (2015) the transition from childhood to adulthood is characterized by major biological changes like physical growth, sexual maturation, and psycho-social development which occurs during adolescence, an age group defined by the World Health Organization (WHO) as 10-19 years. Adolescence is marked by enhanced food requirement, increased basal metabolic and biochemical activities, endogenous processes like hormonal secretions with their influence on

the various organ systems of which menarche (the first menstruation) is the most important event in adolescent girls. Menstruation begins at/after the onset of pubertal growth. The first such experience is called menarche and is usually attained between twelve and fifteen years of age. The typical length of time between the first day of one period and the first day of the next is 21 to 45 days in young women and 21 to 31 days in adults (an average of 28 days). Menstruation stops at/near menopause (commonly considered the end of a female's reproductive life), which usually occurs between 45 and 55 years of age (Arkutu,1995). Various studies in Asia and Africa including Dasgupta & Sarkar 2008; WaterAid, 2009; Dhingra et al, 2009; Adinma & Adinma, 2008; Mahon & Fernandes 2010; Thakre et al, 2011; Nagar & Aimol, 2011; Shanbhag et al, 2012 report inadequate or lack of knowledge about menstruation and consequently, poor menstrual hygiene practices among adolescent girls. According to these studies, many girls are ignorant of scientific facts about menstruation and proper hygienic practices. Mahon and Fernandes (2010), further revealed that girls' information on menstruation is mainly about ritual practices, cultural issues and behavioral cautiousness towards males.

Cultural prejudices, misconceptions and traditions associated with menstruation date as far back as the beginning of time. Many religions have menstruation-related traditions. These take the form of bans on certain actions during menstruation (such as sexual intercourse in some movements of Judaism and Islam), or rituals to be performed at the end of each menses (such as the mikvah in Judaism and the ghusl in Islam). The bible in Leviticus 15:19-33 and 18:19 advocated for menstruating woman being isolated for 7 days and not participating in religious rituals. Similar taboos apply under Islamic law, wherein it is stated that menstruating women are prohibited from touching the Koran, from praying, and from entering the mosque, as well as from fasting and having sex (Patkar and Bharadwaj, 2004). Many traditional societies therefore isolate women during menstruation. For example, it is only 2005 that the supreme court of Nepal abolished the practice of keeping women in cow-sheds during menstruation. According to Sapkota et al (2013) although adolescence is a healthy period of life, many girls are often poorly informed, less experienced, and less comfortable in accessing reproductive health information and services. This culminates in repression of feelings which can cause intense mental stress and lead the girls to seek health advice from quacks and persons having inadequate knowledge. As a result many young girls lack appropriate and sufficient information regarding menstrual hygiene which may result in incorrect and unhealthy behavior during their menstrual period. Poor personal hygiene and unsafe sanitary conditions result in the girls facing many gynecological problems. In an ethnographic study conducted in primary schools in Bungoma District, Kenya, Lukalo (2010) discovered that in some rural areas girls use old rags, leaves, cow dung or even dig a hole on the ground to sit on for the whole period as a means of managing their menstrual flow. Various studies have established the necessity of girls and women having adequate access to clean water for bathing and laundering

of their menstrual paraphernalia, and space for drying such materials. They also need privacy for changing sanitary napkins and proper facilities to dispose of them (Ten, 2007; Lawan et al, 2010; Nagar & Aimol, 2011).

## 2. Statement the problem

Every year hundreds of thousands of Kenyan girls reach puberty, whose pinnacle is menstruation, yet it is not clear whether or not they are adequately equipped for this milestone. The transition to adulthood is for some girls often experienced with anxiety and fear due to lack of knowledge about menstruation and a lack of resources to properly manage their menses (WaterAid, 2012). The onset of puberty and menarche occurs at a time when many learners are still attending school and many girls reach it unprepared. The information they receive is often selective and surrounded by taboos. Often the education sector avoids the issue by considering it a private matter or a problem to be addressed within the family. But, by leaving the school girls to face this pivotal phase of life unprepared, the girls attain it confused and unsupported, which in turn affects the quality of their education. In some cases it contributes directly to school absenteeism (UNESCO 2014). In many developing countries, girls disproportionately drop out of school when they attain menarche, a fact attributed to the lack of school sanitation facilities for menstruating girls (Herz and Sperling 2004). UNICEF estimates that one in ten menstruating girls skips school for 4-5 days for every 28 days cycle or drop out of school completely. In Kenya, the progressively declining girls enrolment in classes 5 to 8 (ages coinciding with menarche), from the Ministry of Education 2014 statistics, attest to this situation. Moreover, the Ministry of Education gives the transition rate from primary to secondary school as 75%, meaning a quarter of the girls completing primary school do not proceed to secondary school. There is therefore a large number of adolescent girls dropping out of formal education after attaining menarche. Since most of these girls then get married, it follows that unhygienic practices handed down from one generation to the other and having a certain level of acceptance and societal sanction, will continue to be propagated (Garg et al (2012); Dasgupta and Sarkar (2008).

Today, menstruation in Kenya is not only a health concern but also an educational policy - one which aligns with the Kenya Vision 2030, the Constitution of Kenya 2010 and the Basic Education Act 2013. It is estimated that some 2.6 million girls (2.2 million primary and 400,000 secondary school girls) require support to obtain menstrual hygiene materials. To address this problem, the Ministry of Education initiated the Schools National Sanitary Towels program with the objective of keeping girls in school and increasing their access, participation and performance in education. The program, in operation since 2010, provides sanitary towels to disadvantaged school girls and trains teachers on hygienic usage and disposal of sanitary towels. As a way forward, the government is encouraging teachers, parents and the community to provide education and open up discussions about menstruation freely to both girls and boys (Ministry of Education Science and Technology, 2013). Many organizations have heeded to

this call by running hygiene projects in poor rural areas. Are they providing adequate information/ knowledge that significantly influence attitudes towards good hygiene, behavioral practices and proper menstrual hygiene?

Because primary school in Kenya marks the period majority of girls attain menarche, and because many other organizations and individual crusaders have and continue to supplement the Kenya government's efforts in menstrual hygiene interventions throughout the country it provides the best time frame to find out the girls' understanding of menstruation and menstrual hygiene. A proper foundation for menstrual hygiene should be laid before the onset of menstruation (Chrichton, Ibisomi and Gyimah, 2011).

### 3. General Objective of the Study

To establish the determinants of menstrual hygiene among primary school girls in hygiene projects in Nambale division of Busia County, Kenya.

#### Specific objectives of the Study

1. To explore the perceptions and beliefs that influence menstrual hygiene among primary school girls in hygiene projects in Nambale division of Busia County, Kenya.
2. To establish the influence of knowledge on menstruation hygiene among primary school girls in hygiene projects in Nambale division of Busia County, Kenya.
3. To assess the influence of the girls' hygiene practices on menstrual hygiene among primary school girls in hygiene projects in Nambale division of Busia County, Kenya.

### 4. Theoretical Framework

#### Simavi's Theory of Change

This theory was developed in 2012 by Simavi, an international non-profit organization that has been working towards a world in which basic health is accessible to all, for over ninety years (Simavi 2012). The theory proposes that to realize sustainable improvement of menstrual hygiene management, everyone has to be involved and to work together - from the community to the governmental level. The theory is hinged upon three integrated pillars, the first pillar being creating awareness on sexuality, reproductive cycle and menstrual hygiene among girls, women and men in order to empower women to take care of themselves during their menstruation, self-develop and live a healthy life. Girls and women often have a limited understanding of menstruation and hygiene management. The second pillar is creating a supportive environment, in which menstruation is socially accepted and women are not excluded or discriminated against because of their monthly periods. It is not only women who lack understanding on the issue of menstrual hygiene. In many countries menstruation is not seen as a sign of reproductive health and womanhood rather, bodily excretions are regarded as pollutants. Traditional values associate menstrual blood with impurity and menstruation is seen as

taboo and is not openly discussed. Particularly problematic is the fact that men lack understanding of menstruation, but as the traditional decision makers in both households and the wider community, are mostly responsible for household finances. Creating an enabling environment for women in the household, community and social environment at large, is therefore crucial in tackling menstrual hygiene issues. The third pillar is improving access to services, such as sanitary pads and SRHR services, as well as sanitation facilities and clean water. Essential services for managing menstrual bleeding are often poor or nonexistent. The lack of proper sanitary facilities, including clean water and the necessary provisions for the management of bleeding, influences women's hygiene during menstruation. Poor hygiene management can cause infection and jeopardise women's sexual and reproductive health. Instead of sanitary pads, the majority of women in Africa and Asia use old cloth or other absorbent materials to manage their bleeding. These cloths can leak and thus create discomfort. It is essential that the cloths are clean, washed with soap and dried in the sun to prevent bacterial growth. However, women feel ashamed and are taught not to hang their cloths to dry in public spaces. Consequently, many women use dirty, wet, cloths that seriously increase the occurrence of vaginal rashes and urinary tract infections. Affordable, suitable and sustainable sanitary services, including sanitary pads or other solutions, are essential in overcoming issues around menstruation. (Simavi, 2012)

### 5. Conceptual Framework

The study adopted the following conceptual framework:

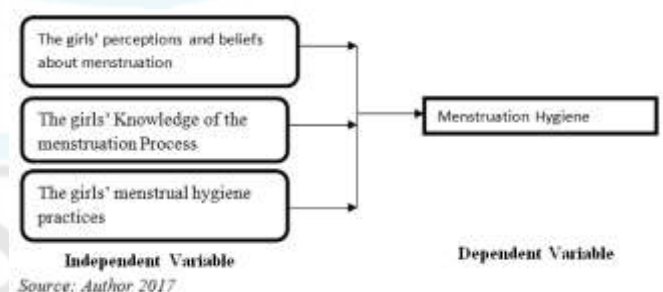


Figure 1: Conceptual framework

#### Girls' Perceptions and beliefs

Factors considered under this variable included the culture and traditions upheld by the society surrounding the girls; the girls' main source of menstrual information, the girls' reactions to their first and subsequent menstrual experiences; and events that surrounded the girls' first menstruation. Ten (2007) highlighted the impact of cultural beliefs associated with menstruation and menstrual hygiene on girls' access to quality education, or more precisely, lack of access thereto. This is either due to the shame and discomfort associated with menstruation or the fact that it is regarded as a sign of readiness for marriage in many societies, or a combination of both. Cultural prejudices, misconceptions and traditions associated with menstruation have been widely reported in Asia and Africa. Ten (2007), Sommer (2008) and Pillitteri (2011). Pillitteri also described coming-of-age related



cultural and ritual practices concluding that most rituals signify that a girl who reaches menarche she is ready for marriage.

### Girls' Knowledge

Factors investigated in this variable were the girls' knowledge of puberty and related events, causes of menstruation, the menstrual cycle, signs and symptoms of menstruation, and PMS. Extensive studies in India and Nigeria prove that menstruation is still clouded by taboos and socio-cultural restrictions resulting in adolescent girls remaining ignorant of the scientific facts and hygienic health practices, which sometimes result in adverse health outcomes. This situation is made worse by the fact that many communities discourage open discussion on these issues (Dasgupta & Sarkar, 2008 and Adinma & Adinma, 2008).

### Girls' Practices

This variable considered factors like menstrual products used, frequency of changing the product disposal, washing and storage of the product. Other factors included personal hygiene during menstruation, managing PMS, and willingness to seek clarification on menstrual issues, and from who. Studies by El-Gilanya, Badawib & AL-Fedawyb (2005) and Kumar and Srivastava (2011) concurred that many girls abstain from bathing regularly during menstruation due to various e.g. the widespread superstition that bathing during menstruation is painful, or it stops blood from flowing in Saudi Arabia. Generally, studies have shown that the lack of necessary facilities, including safe water and appropriate toilet facilities, and the absence of opportunities and proper amenities to keep clean and change pads and menstrual cloths as needed hinder many of the girls from putting to use proper practices of menstrual hygiene. This poses a health risk to them (Narayan et al, 2001; Ahmed & Yesmin, 2008; Dasgupta & Sarkar, 2009; Dhingra et al, 2009; Omidvar & Begum, 2010; Kumar & Srivastava, 2011).

### Menstrual Hygiene

This refers to the effective management of menstrual bleeding. Factors under this variable included articulation, awareness and access to the right information, adequacy of available services and facilities, disposal with dignity, socio economic factors and access to health services. Many studies like Fernandes (2008), WaterAid (2009) and WRC (2011) have looked at how the lack of services and facilities required for menstrual hygiene impacts girls' access to education. Archana (2011) pointed out that good Menstrual Hygiene Management has to be more than just facilities for washing and disposal, because addressing the practical dimensions without taking on the more strategic dimensions that surround this biological phenomenon with shame, silence and disgust will fail to bring dignity and safety to women.

## 6. Research Methodology

The Cross-sectional survey design was appropriate because information needed to be collected from a large number of respondents in different locales (3 different classes from 4 different schools) and relied on the individual self report of their knowledge and attitudes (Mann 2003). The exploratory study design was appropriate in looking into the perceptions, practices and experiences of girls associated with menstrual hygiene because the study was an initial research intending to gain an understanding and insight of the phenomenon of menstrual hygiene from the girls' perspective. Their responses could not have been predicted; qualitative methods had to be used to get these responses (Pope & Mays, 1995). A Descriptive research design sought to establish factors associated with certain occurrences, outcomes, conditions or types of behavior through data analysis. (Mugenda & Mugenda, 1999).

The target population comprised girls in classes 6, 7 and 8 (classes corresponding to the age bracket for attaining menarche) from four public primary schools in Nambale division. The total target population was 960 girls (calculated from a figure of 80 girls per class, for the 3 classes in the 4 schools). Calculating a sample size from this population at 95% confidence level and 5% error margin gave a sample size of 275. Dividing this by the 4 schools and 3 classes gave a sample of 23 girls per class. A working round figure of 25 randomly selected girls who have attained menarche from each of the 3 classes in the 4 sampled schools was therefore used. The study sample was drawn from 10 public primary schools in Nambale division meeting the inclusion criteria.(which was schools with girls, and schools having classes 6,7 and 8). These 10 schools are spread across 3 sub locations, therefore necessitating stratified sampling to obtain a representative sample of 4 schools, Krathwohl (1993). As such, one school from Siekunya sub location (i.e Nambale AC), one from Kisoko sub location (i.e. Kisoko Girls) and two from Nambale sub location (i.e. Nambale Urban and St Peters Khwirale Primary) were randomly selected. In order to meet the objective of the study, pre tested questionnaires were administered to 300 girls and interview guides were used to collect responses from four focus group discussions made up of 15 girls from each sampled school. The questionnaires were used to obtain data from girls who had attained menarche, while the focus group discussion was for girls who had not yet attained menarche. The questionnaires provide both qualitative and quantitative data. In addition, the researcher made observations on Menstrual Hygiene facilities e.g. the number of toilets, in the school and obtained from the head and science teachers of each school names of organization that are or have supported Menstrual Hygiene activities in their school.

Voluntary participation in the study was ensured by explaining the study to the parents/guardians of the participants before obtaining a written consent from them. Informed Consent Forms were handed out to the parents/guardians who agreed to let their daughters participate in the study.

## 7. Results and Discussions of the Findings

Although 89% of the respondents viewed menstruation as a normal body function for women 18% of the respondents believed it is wrong to go to school while menstruating, whereas 30% felt it is wrong to play or exercise. Therefore, though they go to school, they do not play. They spend their recreation time sleeping under trees. Nobody had talked to 74% of the girls about menstruation before their first menstrual period making them experience confusion, fear and shock when it happened. After their first menstruation however, someone talked to 90% of them, this someone being the mother for about 70% of the girls and a teacher for about 20%. Only 37% of the mothers are educated to secondary school level and above. Fathers are better educated, but their daughters do not talk to them about menstruation. Table 1 below gives a summary of some of the findings on the girls' perceptions.

The findings show that there are no far reaching cultural prejudices, taboos and traditions associated with menstruation in Nambale division. This is contrary to findings of many studies carried out in various countries which reveal elaborate coming-of-age related cultural and ritual practices in which the girls may be forced into sexual intercourse with a traditional doctor to initiate them sexually (Pillitteri, 2011). Nevertheless, the study revealed

the misconception that menarche as an indication that one has become an adult who can now get pregnant and/or be married. This misconception is supported by Sommer (2008) who found out that in sub Saharan Africa, social pressure is frequently employed to force girls reaching reproductive age, to enter into early marriages. In concurring with this, Pillitteri (2011) states that most coming of age rituals signify that a girl who attain menarche is ready for marriage. The respondents attested to this when they confirmed that boys relentlessly start targeting them for sexual relationships as soon as they attain menarche. These boys accost them in overnight community gatherings like funerals and dance parties. The study findings also revealed that menstruation remains a very private adult topic not discussed openly by parents, teachers or peers. With this in mind, the study sought to establish if the primary school girls had internalized thus would likely sustain good practice from all the hygiene projects initiatives, efforts and/or activities in the study area, whether by individuals, organizations or the government itself. Most girls therefore attain menarche blindly and meet their first menstrual experience with shock, anger, sadness and confusion when they stain their clothes. This leads to shame, stigmatization and isolation, especially from their male playmates.

**Table 4.2:** Description of some perceptions by respondents

Characteristic	Percent (%)	Characteristic	Percent (%)
<b>Feeling towards menstruation during 1<sup>st</sup> period:</b>		<b>Feeling towards menstruation in subsequent periods:</b>	
Fear/shock	64	Shock/Surprise	18
Sadness	33	Sadness	9
Anger/annoyance	24	Anger/annoyance	8
Confused	43	Confused	12
Acceptance/resignation	15	Acceptance/resignation	65
<b>Who talked to respondent before 1<sup>st</sup> period</b>		<b>Who talked to respondent after 1<sup>st</sup> period</b>	
Teacher	23	Teacher	19
Mother	43	Mother	50
Other female family member	20	Other female family member	22
Read about it	7	Read about it	3
<b>Mother's educational level</b>		<b>Father's educational level</b>	
Informal	6	Informal	2
Primary School	43	Primary School	25
Secondary School	26	Secondary School	34
College/University	11	College/University	15
Don't know	10	Don't know	13

Though teachers are charged with explaining the physiological process of menstruation by the school curriculum, majority of the girls do not seek guidance on menstruation from them, instead they turn to their mothers. This could be as a result of the stigmatization and shame towards the phenomenon, propagated by peers in the school environment. Similar results in Nigeria highlighted the fact that mothers are the main source of information on menstruation (Adinma and Adinma 2008).

From the findings on the girls' knowledge it emerged that only 30% of the respondents were able to explain puberty as the transition stage from childhood to adulthood. 80% of the respondents were able to name some of the changes that occur in a girl's body. However, almost all the girls lacked the scientific knowledge about menstruation and even how to alleviate PMS using home remedies. The findings of this study show that majority of the girls understand that menstruation is a normal physiological process in women. This is contrary to findings by Adinma and Adinma (2008) that not many adolescent girls

perceive menstruation to be a normal physiological function. The girls believed menstruation means one is an adult, not a transition to adulthood. The girls did not know what triggers the menstrual flow. Many knew menstruation is a monthly occurrence but none could explain how the days from one menstrual cycle to the next are counted. Many of the girls did not also know warning signs of an impending menstrual flow, so were many times caught unawares. None of the girls could mention the end of menstruation in the life of a woman as menopause. This conforms to the study by Mahon and Fernandes (2010) which revealed that many girls are ignorant of scientific facts about menstruation and proper hygienic practices, their information on menstruation mainly being about ritual practices, cultural issues and behavioral cautiousness towards males.

On the girls' practices the study established that due to occasional sanitary towels donations by the various projects most of the girls regularly use sanitary towels bought from the shops. A few times however, some girls are forced to use materials like pieces of cloth or blankets which they wash and reuse in subsequent menstrual cycles. Most of these girls dry and store such materials in an unhygienic environment. However, all girls regularly

change their sanitary towels and bath during menstruation. Inadequate water, soap and privacy coupled with stigmatization especially from boys make 64% of the girls prefer to stay home when their menstrual flow is heavy.

The findings that girls keep themselves clean and regularly change their sanitary towels is contrary to studies by Kumar and Srivastava (2011) who found that many girls abstain from bathing regularly during menstruation as a result of numerous misconceptions. Disposal of used sanitary towels possess no problem because the respondents simply throw them in the pit latrines which is contrary to Pilliteri (2011) revelation that schools lack sanitary disposal bins and incinerators so that girls have no option but to hide the used sanitary materials under their mattresses or in bags, in order to dispose of them at a more convenient time. Though majority of the girls reported experiencing PMS, less than half use pain medication, and just a handful use home remedies like hot water.

The figure below summarizes the girls' percentage responses concerning the adequacy of menstrual hygiene facilities in schools.

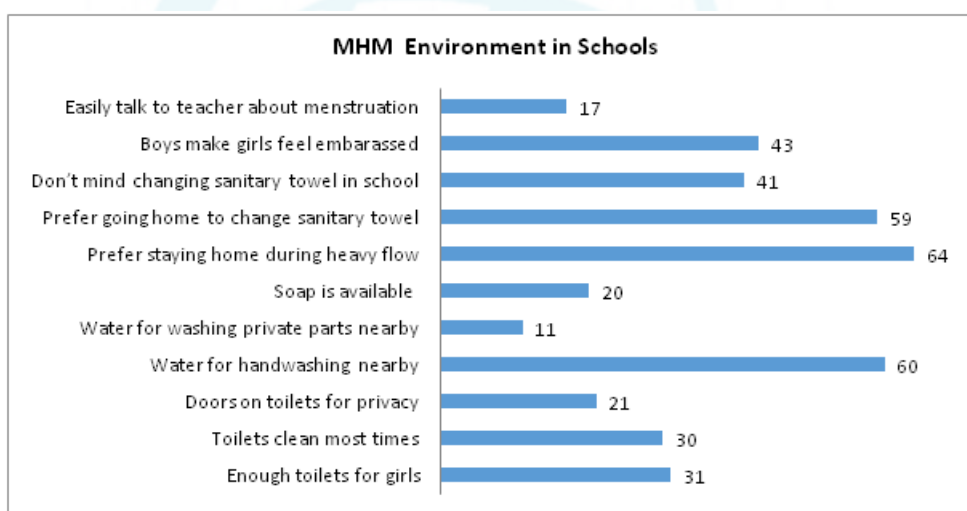


Figure 2: Adequacy of the MHM environment in schools

Inadequate water, soap and privacy coupled with stigmatization especially from boys make the girls prefer to either stay home or wait to get home in order to change their sanitary towels. Even though most schools have leaky tins some distance from the toilets for pupils to use, they are not near enough the girls' toilets to enhance menstrual hygiene. In addition, as already observed, girls would not easily approach their teachers for help on menstrual related issues (see figure 3 below). This is a big set back because most of the MHM projects in schools rely on teachers for implementation. Furthermore, 56% stated they would not feel free to seek information on menstruation from the hospital.

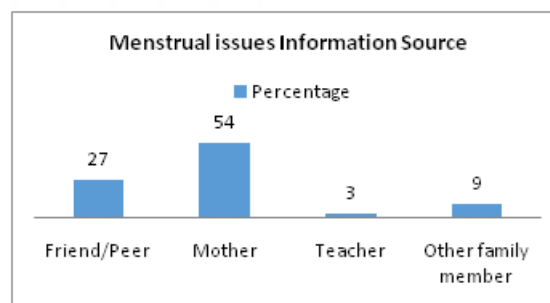


Figure 3: Respondents source of menstrual issues clarification

These findings are upheld by Muvea (2011) who argues that many MHM interventions in Kenya focus on provision of affordable sanitary towels to the girls and Nivedita and Jalandhar (2016) who argue that the



provision of low-cost sanitary napkins is not an answer to the myriad problems girls face in menstrual management. In addition to articulation, awareness, information and confidence to manage menstruation with safety and dignity using safe hygienic materials; adequate water and agents and spaces for washing and bathing; and disposal with privacy and dignity; MHM also entails methods of handling and storage.

## 8. Summary of the Findings

Analysis of the data collected revealed there are no far reaching cultural prejudices, taboos and traditions associated with menstruation in Nambale division. This means the hygiene projects have been successful in stemming out negative perceptions. However, the misconception that menarche signifies one is an adult which robs them of their childhood. A few drop out of school at this stage to get married. This is a gap in hygiene projects' activities. Another gap is found in the fact that nobody had talked to 74% of the girls about menstruation before their first menstrual period which resulted in psychological trauma when they experienced it. 70% of the girls rely on their mothers for menstrual information. 63% of these mothers have either informal or primary school level education. They thus may not have adequate information to pass on to their daughters.

Though majority of the girls knew some of the changes that occur in a girl's body during puberty, only 1% had the scientific knowledge about menstruation. Knowledge of the menstrual cycle i.e. duration, how to count the days and when menstruation ends was completely lacking. This shows a big gap in hygiene projects' initiatives.

93% of the girls regularly use sanitary towels bought from the shops. However, due to erratic availability of the free sanitary towels donated by projects, many of the girls are forced to occasionally use other materials like pieces of cloth, blankets, sponges etc. A few of the girls wash and reuse these materials in subsequent menstrual cycles. The hygienic conditions of these reusable sanitary towels raises some concern because many of the girls dry them hidden in the house, and store them in dark corners/under the mattress as they wait to use them in the next menstrual cycle. These points to gaps in hygiene projects' activities. All girls regularly change their sanitary towels and bath up to 3 times a day, during menstruation. They easily dispose of their used sanitary towels by throwing them in the pit latrines which reduces solid waste challenges in the environment. These two areas show that hygiene projects have made great impact in the girls' attitudes.

According to the World Health Organization the required minimum standard toilet/pupil ratio should be 1:30. This translates to about 8 toilets for the girls in classes 6, 7 and 8 alone. None of the sampled schools met this minimum requirement. Many of the toilets lack lockable doors. Inadequate water, soap and privacy coupled with stigmatization especially from boys make 64% of the girls prefer to stay home when their menstrual flow is heavy. Many wait to get home in order to change their sanitary

towels. These are gaps that hygiene projects' should address.

## 9. Conclusions

Though the girls understand that menstruation is a normal body function for women, the misconception that attaining menarche means becoming an adult robs them of their childhood and potential. A few girls drop out of school to get married as boys relentlessly start targeting them for sex as soon as they attain menarche. In addition, secrecy surrounds the phenomenon resulting in psychological trauma for many of the girls during their first menstrual experience.

Whereas most of the menstrual hygiene projects train and rely on teachers to instruct the girls on menstrual hygiene issues, the girls look to their mothers for this. Since half these mothers do not have an education beyond primary school level, they may not have quality information to pass onto the girls. This may result in the gaps observed in the girls' knowledge and interpretation of the menstrual process. Because most of the menstrual hygiene projects provide disposable free sanitary towels bought from shops, most of the girls use these for their menstrual flow. The girls know to regularly change their pads and maintain good personal hygiene during menstruation period. However, because the sanitary donations are not always enough to sustain all the girls all the time, girls whose parents cannot afford sanitary towels use other readily available materials of which majority do not hygienically maintain for reuse. They dry them hidden in the house, and store them in dark corners and under mattresses. They should be enlightened on the health repercussions of using unhygienic product. The girls also lack knowledge of using home remedies to alleviate PMS. More than half don't even use pain medication. Though most of the projects have ensured availability of pit latrines and leaky tins for children to wash their hands after visiting the toilets, the number of toilets still falls below the minimum requirement suggested by WHO and the girls feel that water in leaky tins is not near enough their toilets to enhance menstrual hygiene. This coupled with inadequate water, soap, privacy and stigmatization especially from boys when they stain their clothes, make girls prefer to go home to change their sanitary towels or stay home altogether on days their menstrual flow is heavy. They therefore miss out on their education.

## 10. Recommendations

Projects should consider explaining menstruation to girls as early as when they are in class 5 so they are not psychologically ambushed by their first menstrual experience. Projects should also train mothers in MHM instead of just focusing on health teachers. Improving facilities and infrastructure to support menstrual hygiene is of urgent essence because, none of the schools met the WHO suggested toilet/girls ratio of 1:30. Finally, though beggars can't be choosers (English proverb), school management boards should coordinate various project activities appealing to the implementing organizations to also help them address any gaps as revealed so as to meet

all aspects of a good MHM environment.

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