Facultad de Ciencias Humanas y Sociales

Grado en Relaciones Internacionales

Trabajo Fin de Grado

Menstrual Health Management in East and Southern Africa

An assessment of the impact of an improved MHM on women and girls' achieved capabilities

Estudiante: María Lorente Martín

Director: Prof. Aldo Colussi

Madrid, junio 2020

Abstract

Menstrual health management (MHM) has been absent from the development sector, practices, research, and policies, despite findings acknowledging that an inadequate MHM imposes clear obstacles to women and girls' quality of life, development and wellbeing, particularly in low- and middle-income countries. The goal of this thesis is to provide an updated overview of the state of MHM in East and Southern Africa in 2020 and the opportunities for cross-sector actors to take advantage of the growing momentum and address critical remaining gaps in the field. Amartya Sen's capabilities approach is used to provide a greater understanding of how an improved MHM contributes to the extension of human development by expanding capabilities to lead a life one has a reason to value. In order to do so, this study will examine the scale of the MHM challenge, how it relates to a large variety of outcomes in a woman's life strongly impacting her capabilities, and the work of international organisations in the field of MHM. Understanding the full potential of adequate MHM is crucial to advance gender equity and equality, particularly in low- and middle-income countries.

Table of contents

1. Introduction *5*

1.1. Purpose and research question **6**

1.2. Background: global health security and MHM in East and Southern Africa 7

1.2.1. Global health security 7

1.2.2. MHM in East and Southern Africa 9

2. Previous research and theoretical scope *11*

2.1. Literature Review **11**

2.2. Theoretical scope and framework: human development and capabilities 13

3. Menstrual Health Management (MHM) *14*

3.1. Concepts **14**

3.2. Trends **14**

3.3. Main hypothesis **16**

3.4. Selection of capabilities **17**

4. Impacts of an inadequate Menstrual Health Management *18*

4.1. Impact on health **18**

4.1.1. Urogenital infections 19

4.1.2. Transactional sex 19

4.1.3. Menstrual Irregularities 20

4.1.4. Contraception and unintended pregnancy 21

4.1.5. Menstrual and psychosocial wellbeing 21

4.1.6. Early marriage 22

4.1.7. Women and girls' achievement of physical and mental health and social relations 22

4.2. Impact on education **23**

4.2.1. MHM-related causes 24

4.2.2. Consequences of girls dropping out of school 26

4.2.2.1. Earnings and standards of living 26

4.2.2.2. Pervasiveness of child marriage and early childbearing 27

4.2.2.3. Fertility and population growth 28

4.2.2.4. Agency and decision-making 28

4.2.2.5. Social capital and institutions 29

4.2.3. Women and girls' achievement of education 29

4.3. Impact on employment **30**

4.3.1. Women and girls' achievement of work, employment and mobility 31
5. Barriers and Enablers for Menstrual Health Management ... *32*
5.1. Social and gender norms ... **33**
5.1.1. Broader systems: stigmas and taboos at the institutional level ... 34
5.1.2. Communities: beliefs about menstruation at the community level 35
5.1.3. Individuals: shame and self-stigma at the individual level ... 35
5.2. Education, knowledge and awareness ... **36**
5.3. Menstrual methods/products and supplies ... **37**
5.3.1. Supply-side constraints ... 37
5.3.2. Demand-side constraints ... 40
5.4. Sanitation facilities ... **41**
5.5. Policies on Menstrual Health Management in ESA Region ... **44**
5.5.1. National governments ... 44
5.5.2. Global funders and donors ... 45
5.5.3. Grassroots coalitions ... 46
6. International Actors and MHM ... *47*
6.1. MHM Sustainable Development Goals ... **47**
6.2. The African Union 2063 Agenda: "the Africa we want" ... **49**
6.3. UN Agencies ... **50**
6.3.1. UNICEF ... 50
6.3.2. Water, sanitation and hygiene (WASH) ... 51
6.3.3. Other UN agencies ... 53
7. Menstrual health management and the COVID-19 pandemic ... *55*
7.1. Exacerbation of MHM-related issues and challenges ... **55**
7.2. Response needed ... **56**
8. Conclusion and further areas of research ... *57*
8.1. General conclusion ... **57**
8.2. Lack of unified data to track MHM ... **59**
8.3. Further areas of research ... **60**
8.4. Last words ... **61**
BIBLIOGRAPHY ... *63*

1. Introduction

For billions of women and girls around the world, menstruation is a reality to face every month. Although menstruation is a normal bodily function, it challenges all facets of a woman's life –from education to sanitation, leading to severe issues throughout her life. Approximately 25% of the world's population are women of reproductive age, out of which 300 million menstruate on any given day – however, in the world, more than 500 million women every month lack the necessary support to manage their menstruation (Amaya, Marcatili, & Bhavaraju, 2020).

Menstruation and Menstrual Health Management (MHM) have always been considered a private, shameful issue for women all around the world (UNICEF, 2019). Although it is a complex topic, the understanding of MHM is vital to recognise its inextricable link to women's lives and their communities. Menstruation is a core function of a woman's reproductive system, whose proper functioning is a vital sign of overall health.

However, menstruation becomes a life-changing issue when menstruators lack access to the resources, infrastructure and social support necessary to deal with it appropriately. Menstruation challenges directly affect other vital areas of a woman's life, such as her health and wellbeing, gender equality, education, economic opportunities, empowerment and human rights (Amaya, Marcatili, & Bhavaraju, 2020).

In developed countries, these challenges were somewhat overcome in the 1930s with the introduction of sexual and reproductive education, as well as of disposable menstrual products. Innovation has allowed companies to improve user experience and, in recent years, reduce the environmental impact of menstrual products. Today, menstrual products in developed countries are better, safer, and more diverse than ever (UNFPA, 2018). In fact, one can find in any supermarket a large variety of menstrual products, from pads and tampons to menstrual cups and period underwear. Innovation has further helped track the menstrual cycle through the creation of menstrual calendar apps. However, the taboo of menstruation is still quite present amongst developed countries (Action Aid UK, 2020).

Taboos, shame and stigma around menstruation are extremely harmful to a person's self-esteem and physical and mental health because they strengthen gender discrimination and

maintain the idea that menstruating girls and women are dirty (UNFPA, 2018). In some developing countries, taboos surrounding menstruation are especially powerful, as they "*can keep women and girls from touching water or cooking, attending religious ceremonies, or engaging in community activities*" (UNFPA, 2018).

Stigma and ridicule further exclude girls and women from school and opportunities, as most of them are teased by colleagues and classmates, increasing absenteeism and lack of engagement. This situation is all the more aggravated by period poverty[1], which generates a vicious circle: as a result of the stigma and taboo, menstruation issues are generally disregarded by policymakers, at the cost of the most marginalized communities' wellbeing (UNFPA, 2018).

1.1. Purpose and research question

This research paper aims to provide an updated overview of the state of MHM and the opportunities for cross-sector actors to take advantage of the growing momentum and address critical remaining gaps in the field. The main intention of this study is to provide a greater understanding of how an improved MHM contributes to the extension of human development through capabilities.

In order to do so, this study will examine the scale of the MHM challenge and how it relates to a large variety of outcomes in a woman's life, strongly impacting her capabilities. The research is focused on East and Southern Africa, although it is complemented by updates from other regions, namely South and Southeast Asia. Understanding the full potential of adequate MHM is crucial to advance gender equity and equality, particularly in low- and middle-income countries.

This results in the following research question: *in which ways does an improved MHM impact girls and women's capabilities as well as their immediate environment?*

[1] Period poverty is the lack of "*access to sanitary products, safe, hygienic spaces in which to use them, and the right to manage menstruation without shame or stigma*" (Action Aid UK, 2020).

This question is investigated by first, analysing the obstacles that inadequate MHM imposes on the achievement of women and girls' capabilities, affecting their health, education, and work, as well as the impact these issues have on women and girls' communities and, to a larger extent, the development of their countries (section 4 and 5). The second part of this thesis (sections 6 and 7) will examine the work of international organizations, governments, and NGOs and by analysing the consequences of an inadequate MHM as well as these issues' impact on girls and women, their communities,

1.2. Background: global health security and MHM in East and Southern Africa

1.2.1. Global health security

In the midst of the coronavirus pandemic, global health and universal health coverage are put at the forefront of international relations.

> '*In today's era of globalisation and interdependence, there is an urgent need to broaden the scope of foreign policy… Health is deeply interconnected with the environment, trade, economic growth, social development, national security, and human rights and dignity. In a globalised and interdependent world, the state of global health has a profound impact on all nations – developed and developing. Ensuring public health on a global scale is of benefit to all countries*.' Oslo Ministerial Declaration (2007)[2].

Health has implications for economic wellbeing, security, and international development. As a result, it should be of paramount diplomatic and foreign policy concern. As we have seen with the currently on-going coronavirus pandemic, economic-, security- and development-related policy decisions greatly influence health outcomes, especially the emergence and spread of health threats (Chatham House, 2012).

Global health security consists of three main aspects: disease threats and determinants that transcend borders; access to health-related products and services; and international

[2] In the Lancet (Ministers of Foreign Affairs of Brazil; France, Indonesia, Norway, Senegal, South Africa and Thailand, 2007)[2].

affairs, governance and health (Chatham House, 2012). In the MHM case, ensuring the access to health-related products and services is crucial to achieving social wellbeing and country development. Throughout this research paper, it will be argued that political, economic, and social issues can become barriers that hinder the provision of health-related products and services necessary to meet the needs of menstruating girls and women.

Moreover, the intersection of health, governance and international affairs in the international political landscape is crucial to shaping global health, power shifts, and tackle international health issues as well as opportunities. Importantly, efforts to improve global health strongly influence foreign policy interests, such as economic growth and security (Chatham House, 2012).

In terms of official development aid (ODA), the education and health sector is the sector that receives the most funding (18.2%), followed by economic infrastructure (17.3%) and social infrastructure (17.1%) (OECD, 2019). This very clearly shows that global health security is a fundamental part of every country's foreign policy and, particularly, every country's diplomacy and soft power. Therefore, the health sector must advance foreign policy goals, by arguing that health policy can have a substantial impact on foreign policy and its goals (particularly in national security), just as much as foreign policy can have a strong impact on health. As a result, building trust between the two sectors is vital to minimise negative impacts and push for global health security (Chatham House, 2011).

Global health architecture is characterised by power asymmetries, based on an unequal and unfair relationship between countries rooted in colonialism, imperialism, and post-World War II governance structures. This is quite relevant when examining health-related global organisations' headquarters, 85% of which can be found in Europe and North America. In fact, over 80% of global health leaders are citizens of high-income countries (Global Health 50/50, 2020).

In this context, it is easy to understand why a Western-centric, patriarchal structure of global health lacks both diversity and gender equality. As will be detailed further in this research, over 70% of leadership positions in global health are occupied by men, a trend that threatens to persist for the next 40 years (Global Health 50/50, 2020). In order to

properly understand global health challenges, greater diversity is required, particularly among senior management positions.

As global priorities continuously fail to meet health needs, the question of gender becomes blatant: global health organisations are strongly shaped by their gender-blindness (Global Health 50/50, 2020). The failure to comprehensively address neglected, ignored and misunderstood girls and women's needs, from menstrual health management to maternal mortality, to sexual and reproductive health, denies them from their human right to the highest attainable standard of health and wellbeing (OHCHR, 2008).

The current SARS-CoV-2 pandemic has had very damaging effects on the lives, livelihoods and wellbeing of every single one of us across the world, as well as on our economies, services, and health systems. In this context, the need for Universal Health Coverage (UHC) becomes stronger than ever. UHC2030 is an international movement that pushes for the strengthening of health systems in order to achieve UHC.

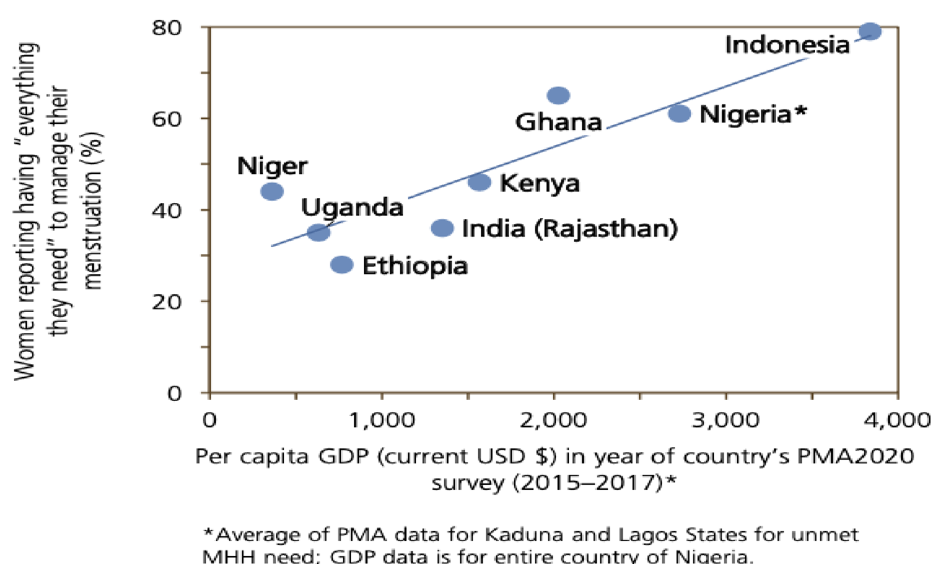
Indeed, secure, robust and reliable health systems are vital to respond to health crises, particularly for women and other marginalised and vulnerable groups (Kikbusch & Gitahi, 2020). For menstruating women and girls, this translates into being capable of managing menstruation safely, hygienically and with dignity. This is vital for women and girls around the world, as it directly impacts their human rights, health, education, and economic development – in other words, gender equality (WASH United; Menstrual Hygiene Day, 2020). Section 8 of this research paper will give a brief insight into how the COVID-19 pandemic has impacted MHM.

1.2.2. MHM in East and Southern Africa

Like everywhere in the world, adolescent girls and women in Africa menstruate on average every month of their lives between menarche and menopause. In East and Southern Africa, the onset of menstruation (menarche) is estimated at 14 years old and 50 years old at menopause (UNFPA, 2018). Therefore, "*4-5% of the total population would be menstruating on any given day*" (UNFPA, 2018).

In Africa, many girls and women have little to no access to MHM information and, therefore, have trouble managing their menstruation (HRW, 2017). As a result, their day-to-day activities are hindered, stigma and discrimination impact school absenteeism and work performance, and their sexual, reproductive, and mental health are harmed (UNFPA ESARO; MHM Symposium, 2018). This situation has a clear impact on a country's level of per capita wealth: as can be seen in Figure 1, unmet MHM needs are directly correlated to a country's GDP per capita (Amaya, Marcatili, & Bhavaraju, 2020).

Figure 1: Correlation between unmet MHM and GDP.



Source: Amaya, Marcatili, & Bhavaraju, 2020; p. 6.

In Ethiopia and Uganda, only around 30% of women say they have "everything they need" to deal with menstruation (PMA2020/Ethiopia, 2018; PMA2020/Uganda, 2018). Although this number increases to nearly 50% of women in Kenya, Figure 1 shows the dire need for adequate products, materials to manage menstruation, knowledge, awareness and access to sanitation infrastructure (PMA2020/Kenya, 2018) to ensure the achievement of women and girls' capabilities and, in doing so, pushing for development. Women and girls' issues with menstruation are further aggravated by strict and robust social and gender norms that shape a community's attitude towards menstruation, thus structuring a woman's capabilities to deal with her period.

As will be discussed, clean water and menstrual products, such as pads, and safe and adequate sanitation facilities are often unaffordable and/or unavailable (HRW, 2017). In

fact, adequate sanitation facilities are scarce and not adapted to women and girls' menstrual needs. In schools, sanitation facilities (if there are any) suffer from the high pressure put on them as a result of the increase of enrolment in primary schools. This situation increases schoolgirls' absenteeism, which results in a high number of dropouts after menarche (UNFPA ESARO; MHM Symposium, 2018).

To stop menstrual blood from staining, women and girls in East and Southern Africa use newspaper, old cloth or cotton, which are not necessarily unhygienic if used correctly, but end up being uncomfortable and potentially harmful (irritation and/or cuts lead to infections…) (UNFPA, 2018). Period poverty pushes some girls and women into transactional sex in exchange for cash to obtain menstrual products (UNFPA ESARO; MHM Symposium, 2018). Furthermore, menstrual products disposal is quite deficient, as the region lacks proper waste management infrastructures (UNFPA, 2018). Disposable menstrual products, such as sanitary pads or tampons, contain high levels of plastic and take up to 800 years to decompose, which end up being extremely harmful to the environment and the communities (UNFPA ESARO; MHM Symposium, 2018).

Furthermore, menstruation-related taboos and stigma in East and Southern Africa exacerbate discrimination against girls and women. In fact, in some cultures, women and girls are not allowed to sleep inside their homes while menstruating and are forced to sleep in makeshift sheds, putting them at risk of cold temperatures and wild animals (UNFPA ESARO; MHM Symposium, 2018).

2. Previous research and theoretical scope

2.1. Literature Review

Previous MHM research in the development field has come from the WASH[3] sector, underlining the negative impacts of inadequate MHM on girls' schooling (Sommer, Hirsch, Nathanson, & Parker, 2015). This research focuses on the negative impacts of an inadequate MHM in the quality of the lives and livelihoods of women and girls.

[3] WASH stands for Water, Sanitation and Hygiene. This sector will be analysed in detail in section 6.

As will be seen later in this study, many experts and researchers have concluded that the lack of available and adequate WASH and MHM facilities (toilets, safe water and menstrual products) affects girls' education, women's employment and overall wellbeing, resulting in high absenteeism, low performance and little or no development of their human capabilities. Other studies have found that attendance among schoolgirls was higher for those who could access menstrual products (Tegegne & Sisay, 2014). In Ghana, a study evaluated the role and use of menstrual pads among schoolgirls and stated that the availability of menstrual products, together with education on puberty and sexual and reproductive health, resulted in higher school attendance – those schoolgirls that lack menstrual pads had to miss school from 3 to 5 days every month (Montgomery, Ryus, Dolan, Dopson, & Scott, 2012). Moreover, further studies have concluded that the use of unsafe menstrual materials (cotton, tissues and textbook paper) had a very negative impact on women and girls' physical health, causing them skin irritation and low school and employment performance (Mason, et al., 2015).

Nevertheless, the results are not conclusive. Some studies argue that there is a significant gap in MHM research thus not leading to decisive outcomes on the role of MHM in women and girls' education, employment and psychosocial wellbeing (Hennegan & Montgomery, 2016). As will be detailed in the last part of this thesis, research gaps are very harmful to the progress and effectiveness of MHM programmes, since they tend to either misunderstand or ignore significant issues and actors in the MHM field. Researchers and practitioners in the development sector have called for further research in this field, particularly in terms of MHM interventions' effectiveness (Sida, 2016; Sommer, et al., 2016a).

In the sexual and reproductive health and rights (SRHR) sector, some scholars argue that MHM has been widely overlooked, since the bulk of the attention is on girls above the age of 15 years old, more at risk of unintended pregnancies and STIs (UNFPA, 2018). As MHM is not usually seen as a life-threatening issue (Sommer, et al., 2016b), most approaches have not been translated into more strategic, holistic programmes.

In this research, the focus is placed on girls and women's experiences with menstruation throughout their lives. It is essential to keep in mind, however, that menstruating people may not necessarily identify as women or girls. Likewise, not all girls and women

menstruate. Transgender, non-binary, and intersex people have unique menstruating experiences, and their needs are more marginalised than those of cisgender women (Amaya, Marcatili, & Bhavaraju, 2020). In a context of division among researchers within a significant research gap, this thesis aims to provide an overall overview of the MHM field in 2020 and analyse the relation between women and girls' achieved capabilities and an improved and adequate MHM.

2.2. Theoretical scope and framework: human development and capabilities

Human development was introduced in 1990 to provide a new approach for advancing human wellbeing. Until then, the growth of the economy (GDP growth) were the indicators used to measure human development. However, Pakistani economist Mahbub ul Haq suggested and developed an alternative approach, through which development was understood as the expansion of "*the richness of human life, rather than simply the richness of the economy*" (UNDP, 2016).

Therefore, the human development approach is focused on people's choices and opportunities, suggesting that human welfare is development's ultimate goal, rather than a country's gross national product (Haq, 1995). Through this idea, the human development approach focuses on the improvement of people's lives, instead of assuming that economic growth will ultimately end to greater wellbeing for all – in fact, income growth becomes a means to development, not an end in itself (UNDP, 2016).

Based on Haq's approach to human development, Nobel prize laureate Indian economist Amartya Sen built the capability approach. In his book *Development as Freedom* (1999), Sen explains the fundamental idea behind the capability approach: the evaluation of development and a person's quality of life cannot be measured by the resources they have, but rather by the opportunities this person has to lead a life they have a reason to choose and value. In this sense, Sen differentiates between a person's functioning (what a person is or does) and capabilities (what they are effectively able to be or do) (Sen, 1999, p. 75). Importantly, as soon as a person has achieved their capabilities, he or she can begin to choose which functionings to undertake, on the basis of what they value most (Robeyns, 2005). In other words, once a person can effectively be and do things, they can choose

what they are and do according to their own understanding of what is most valuable to them.

The purpose of this study is to understand whether opportunities brought by an improvement of MHM in East and Southern Africa remove obstacles to expand girls' and women's achieved capabilities.

3. Menstrual Health Management (MHM)

3.1. Concepts

Menstrual *Hygiene* Management refers to women and girls handling menstruation through a practical strategy, such as the ways in which they stay clean and healthy during menstruation as well as obtain, make use and dispose of menstrual products. Some scholars further underline the importance of waste management systems to dispose of menstrual products as well as access to useful information on menstruation (Sommer, Hirsch, Nathanson, & Parker, 2015).

The term Menstrual *Health* Management (MHM) builds on the concept of menstrual hygiene. It encompasses both menstrual hygiene management and the broader spectrum of aspects related to menstruation, such as gender, rights, education, equity, health and wellbeing (Amaya, Marcatili, & Bhavaraju, 2020).

Although both terms are conveniently abbreviated to MHM, Menstrual Health Management will be more widely used in this study, for the simple consideration that menstruation is not believed to be dirty or unhygienic.

3.2. Trends

In 1998, a global survey found that the average age at menarche (the onset of menstruation) was 14 years old – varying between ages 13 to 16, and with African countries generally presenting a higher number than other regions (Morabia, Costanza, & WHO, 1998). However, this trend has shifted as a result of improved nutrition and health (Downing & Bellis, 2009). For instance, a study from South Africa found that the age of

menarche declined from 14.9 in 1956 to 12.4 in 2004 for black girls, and from 13.1 in 1977 to 12.5 in 2004 for white girls. Added to an increase in life expectancy, women and girls now spend more years of their lives menstruating than ever before.

The UNFPA estimated that more than 25% of the East and Southern Africa region total population is of menstruating age and that 4-5% of the total population would be menstruating on any given day (UNFPA, 2018). Menstruation affects 26% of the world's population and, "*on average, a woman menstruates for about seven years during their lifetime*" (UNICEF, 2018). In other words, on a global scale, more than 350-400 million girls and women menstruate, on any given day (UNFPA, 2018). After seeing these statistics, one can easily see why scholars consider MHM should be given the rank of a public health issue and why it is necessary for governments to plan for MHM issues in terms of products, SRHR education, and sanitation facilities.

All around the world, the majority of women and girls menstruate every month and will continue to do so between the onset of menstruation until menopause. However, this fundamental bodily function is still met with stigma and taboos, as well as significant challenges to manage menstruation and menstrual health. As will be detailed in this study, the lack of access to safe and affordable menstrual products, safe sanitation facilities, and safe, clean water to manage menstruation in privacy, comfortably and with dignity hinders women and girls' achievement of capabilities. Moreover, discriminatory cultural norms and practices hamper menstrual health management and, together with an inadequate environment for menstrual hygiene, result in the denial of women and girls' fundamental human rights (HRW, 2017). In other words, "*gender inequality, extreme poverty, humanitarian crisis, and harmful traditions can all turn menstruation into a time of deprivation and stigma*" (UNFPA, 2019).

Women and girls' spend between three to eight full years of their lives menstruating, during which they can be the victim of neglect, menstruation-related exclusion, and discrimination, which very clearly reinforces gender inequality (UNFPA, 2019) and hampers women and girls' achievement of capabilities.

3.3. Main hypothesis

As will be argued throughout this study, an adequate MHM is fundamental to ensure women and girls' human rights and wellbeing. In the last few years, MHM has been put to the forefront of international affairs, as it is a crucial part of achieving Sustainable Development Goal 5 – if women are not able to leave their homes because they lack appropriate MHM products and sanitation facilities, then gender equality (SDG 5) will never be achieved.

According to Amartya Sen, development needs to be considered as "*a process of expanding the real freedoms that people have*" (Sen, 1999, p. 36). These "real freedoms" are in fact people's capabilities to lead a life they have a reason to value, which is why Sen believes this process of expansion of freedom is seen as the "*primary end*" and the "*principal means*" of development (Sen, 1999, p. 36). Sen names the primary end of this process as the "*constitutive role*" of freedom in development, and the principal means the "*instrumental role*" of freedom in development (Sen, 1999, p. 36). On the one hand, the constitutive role of freedom is the expansion of capabilities – the set of things a person is capable of doing and being that allows one not to starve, be literate, numerate, and enjoy political freedom. In other words, the constitutive role of development is the expansion of human freedoms (Sen, 1999, p. 36). On the other hand, the instrumental role of freedom refers to rights, opportunities and entitlements that contribute to development by expanding human freedom (Sen, 1999, p. 37). For the purpose of this research, development will henceforth be understood as the achievement of those capabilities that allow people to lead lives they have a reason to value.

Following this idea, further scholars have argued that the removal of obstacles is vital to both the expansion and achievement of capabilities (Fukuda-Parr, 2003) and, therefore, to expand development. Based on this idea, this thesis argues that the relationship between MHM and development is enhanced by improving MHM, as this improvement removes obstacles to the achievement of women and girls' capabilities. Therefore, the hypothesis that will be tested in this study will be: *An improved MHM removes obstacles to the achievement of women and girls' capabilities – what they can do and be.*

3.4. Selection of capabilities

There is a vast number of potential capabilities to examine when applying the capability approach (Robeyns, 2003). The selection of capabilities is very dependent on the social context in which they are put, as well as "*from one community of country to another, and from one point of time to another*" (Fukuda-Parr, 2003). When choosing capabilities, they must be context-dependent in terms of both the evaluation that will be carried out and the geography in which this evaluation is located (Robeyns, 2003). Knowing this, the capabilities selected for this study are considered to be the basic ones needed to assess MHM in a low-resource situation in the East and Southern Africa region.

The choice of capabilities for this study is based on the lists put forward by Ingrid Robeyns, Martha Nussbaum and Alice Castensson. From their lists, five capabilities have been chosen: physical health, mental wellbeing, social relations, education, employment (work), and mobility (Robeyns, 2003; Nussbaum, 2011; Castensson, 2018). These capabilities have been selected as they initially seemed quite likely to be negatively affected by inadequate MHM. Likewise, the achievement of these capabilities could be a result of the removal of obstacles to adequate MHM. For example, if a community is characterised by high levels of MHM stigmatisation or has inadequate sanitation facilities, the capabilities of the members of that community could be impacted and, thus, less achieved (Castensson, 2018).

- Physical health is understood as "*being able to be physically healthy and enjoy a life of normal length*" (Robeyns, 2003, p. 71);
- Mental wellbeing is understood as "*being able to be mentally healthy*" (Robeyns, 2003, p. 71)
- Social relations is understood as "*being able to be part of social networks and to give and receive social support*" (Robeyns, 2003, p. 72)
- Education and knowledge is understood as "being able to be educated and to use and produce knowledge" (Robeyns, 2003, p. 72), and
- Work is understood as "*being able to work in the labour market or to undertake projects*" (Robeyns, 2003, p. 72)
- Mobility is understood as "*being able to move freely from place to place*" (Nussbaum, 2011, p. 33).

The impact that MHM interventions have on people's capabilities can be used to assess those interventions and understand both the community's and individuals' wellbeing (Castensson, 2018). In fact, it is actually very helpful when evaluating whether people are well-nourished, healthy and educated and if the means required to the achievement of these specific capabilities are provided (Robeyns, 2005).
As previously mentioned, this study will assess whether an improved MHM removes obstacles and enables capability achievement for women and girls, particularly when they are menstruating. To test this hypothesis, this research will do an overview of the literature available at the time of the study and assess the state of MHM in countries in East and Southern Africa and how it relates to women and girls' achieved capabilities.

4. Impacts of an inadequate Menstrual Health Management

A large number of effects on health, education, and work have been documented concerning those women and girls suffering from an inadequate MHM. In this section, the negative impact that inadequate MHM has on health, education, and work will be analysed, as well as their impact on women and girls' achieved capabilities.

4.1. Impact on health

The World Health Organization (WHO) defines health as "*a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity*" (WHO, 1948). Menstruation is a basic reproductive process with different bodily effects for every woman. Menstrual bleeding is a critical indicator in a woman's life and its distinctive stages: menarche, possible pregnancy, and menopause. Shifts in menstrual bleeding patterns are indicative of health issues: vaginal bleeding prior to first menstruation can signal severe medical conditions ranging from infections, tumours to trauma. Likewise, shifts in menstrual cycles can point to other health problems, such as undernourishment or cancer (Amaya, Marcatili, & Bhavaraju, 2020).

In the East and Southern Africa region, research shows a clear correlation between early school dropout during the first years of menstruation with an early sexual debut, pregnancy rates and a higher risk of HIV (Hargreaves, et al., 2008a; Hargreaves, et al., 2008b; Jukes, Simmons, & Bundy, 2008). In this section, the focus will be on how the

lack of appropriate menstrual health management leads to a wide range of significant health issues, lowering girls and women's living standards and creating obvious obstacles to the achievement of women and girls' capabilities.

4.1.1. Urogenital infections

Studies have shown that an inadequate MHM can lead to higher levels of urogenital infections, especially when personal hygiene or the nature of the products used to manage menstruation is inadequate (Dasgupta & Sarkar, 2008). A similar study in Odisha (India) shows that women who use disposable pads were slightly less likely to have symptoms of or be diagnosed with a urogenital infection than those women that used reusable pads (Das, et al., 2015). Indeed, urogenital infections seem to be more likely when MHM products need to be washed and dried, such as reusable pads or homemade products, and are done so under unhygienic conditions (Zarkin-Scott, von Euler-Chelpin, & Tellier, 2017).

4.1.2. Transactional sex

Further studies have also shown that girls and women in low- and middle-income countries engage in transactional sex to pay for menstrual products (Mason, et al., 2013). Transactional sex is defined by UNAIDS as "*a non-marital, non-commercial sexual relationship motivated by an implicit assumption that sex will be exchanged for material support or other benefits*" (UNAIDS, 2018). Period poverty pushes girls into transactional sex, which is associated with higher HIV and unwanted pregnancy rates, endangers the health and wellbeing of girls and women as well as increases school dropout (UNAIDS, 2018). In Kenya, young, uneducated, and economically dependent girls are the most likely to participate in transactional sex to be able to afford menstrual products (Philips-Howard, et al., 2015).

Moreover, several studies find that transactional sex increases the risk for HIV transmission (Wamoyi, Wight, Plummer, Mshana, & Ross, 2010; Wamoyi, Stobeanau, Bobtova, Abramsky, & Watts, 2016; Puffer, et al., 2011). A study carried out by the Ministry of Health of Uganda found that more than a quarter of nearly 5,000 adolescents

report engaging in transactional sex (MoH Uganda, et al., 2016), though without specifying the purpose. These findings highlight the significance of understanding the broader economic position of girls and women and their opportunities for accessing resources to meet their basic necessities (UNFPA, 2018). On the contrary, a study in Western Kenya reports a decreased STI risk associated with reduced engagement in transactional sex, allowed by providing menstrual cups and disposable pads for one school year to school girls (Philips-Howard, et al., 2015).

4.1.3. Menstrual Irregularities

Menstrual irregularities, including irregularities in menstrual flow amounts, amenorrhea[4], dysmenorrhea[5] or irregularities of timing (Mohite, Mohite, Kumbhar, & Ganganahalli, 2013), arise as consequences of adverse physical health, stress, reproductive issues (endometriosis, fibroids…) or medication effects (NICHD, 2017). Further causes of menstrual irregularities include genetics, socio-economic grounds and psychosocial status, or nutritional causes (Dars, Sayed, & Yousufzai, 2014). Contraceptive discontinuation is also one of the leading causes of menstrual irregularities (UNFPA, 2018), as will be detailed in section 4.1.4.

Additionally, girls having undergone female genital mutilation (FGM) have longer and more painful periods (House, Mahon, & Cavill, 2012). A further example of menstrual irregularity is premenstrual dysphoric disorder (PMDD)[6], which, if left untreated, can cause a Quality-Adjusted Life Year (QALY) loss of 3 years (Yamada & Kamagata, 2017). In low- and middle-income countries, menstrual irregularities are not given

[4] Amenorrhea: lack of menstrual period. Although it is not considered a disease, it can be a symptom of another condition. Amenorrhea can be of two types: Primary amenorrhea happens when a girl has not had her first period yet by the age of 16. Secondary amenorrhea occurs when a woman has not had her period for more than three menstrual cycles after having regular periods. Regular periods are a key sign of health. The lack of menstrual period, when not due to pregnancy, breastfeeding or menopause, generally indicates a health problem (NICHD, 2017).

[5] Dysmenorrhea: menstrual irregularity characterized by painful periods that may include severe menstrual cramps (NICHD, 2017).

[6] Premenstrual dysphoric disorder (PMDD) is a condition that causes women to experience severe depression symptoms, irritability, and tension before menstruation. These symptoms are much more severe than those of premenstrual syndrome (PMS), for both of which no causes have been found. Both PMS and PMDD are related to hormonal changes within a menstrual cycle and causes women to have anxiety, severe depression and seasonal affective disorder (NIH, 2020).

enough attention. However, experts insist they should be regarded as public health issues, especially after analysing their negative impact on the health and education sectors (Sommer, et al., 2017; Sheetal, Sheela, & Seeta, 2015; Dars, Sayed, & Yousufzai, 2014).

4.1.4. Contraception and unintended pregnancy

Some contraceptive methods, such as injectable contraceptives and IUDs, lengthen the duration of menstrual periods (Tolley, Kafafi, Loza, & Cummings, 2005) and can lead to irregular menstruation (Hyttel, Rasanthan, Tellier, & Taremwa, 2012), resulting in an unbearable economic burden to purchase menstrual products (UNFPA ESARO, 2017). Moreover, contraceptive side effects and risks are major discontinuation drivers of long-term contraceptives and, in sub-Saharan Africa, women worry about the misinformation and disinformation on how their bodies or contraception work (Sedgh, Ashford, & Hussain, 2016).

In short, contraceptive-induced periods and their shifts significantly shape women's decisions to use contraceptives (Amaya, Marcatili, & Bhavaraju, 2020). Inadequate MHM leads to contraception discontinuation, which in turn, perpetuate menstrual irregularities and can end in unintended pregnancies (UNFPA, 2018). Equipping women with the knowledge to understand how their menstrual cycles are impacted by contraception (among others) can advance body literacy and lead to improved health results (Amaya, Marcatili, & Bhavaraju, 2020).

4.1.5. Menstrual and psychosocial wellbeing

Studies from Ethiopia, Uganda, Kenya, Tanzania and Malawi show that there are high levels of fear, shame and social (or personal) limitations that keep girls and women out of school and other social events while menstruating, which highly contribute to perpetuating flawed knowledge and harmful behaviours towards menstruation (Chandra-Mouli & Patel, 2017). In fact, as has been previously mentioned, there are numerous examples of girls and women prevented from doing housework, touching water, socialising, attending religious rites and even sleeping in their own bed or home (Sumpter & Torondel, 2013).

Although explicit research on mental health and MHM is limited, studies from India show high levels of psychological stress when dealing with menstruation (Sahoo, et al., 2015). Further studies from Uganda report that 90.5% of girls' MHM is inadequate, resulting in school absenteeism, school engagement, shame, worries about odour, and teasing by classmates (Hennegan, Dolan, Wu, Scott, & Montgomery, 2016; Ministry of Health Uganda, 2016).

4.1.6. Early marriage

As previously stated, in some cultures, the onset of menstruation indicates the readiness of girls for marriage. This is particularly relevant for poor households, who see this as an opportunity to free themselves from the financial burden of taking care of a girl by marrying her away (UNFPA, 2018). Studies from Malawi, South Africa and Zimbabwe report that early marriage leads to an early sexual debut and, therefore, early pregnancies, increased vulnerability to STIs and, overall, a very negative impact on girls' health (Ibitoye, Choi, Tai, Lee, & Sommer, 2017). However, this situation is further perpetuated by the high costs of dealing with menstruation, such as the purchase of menstrual products, increasing the chances of early marriage, as parents need to pass on the expenditure (Nyakanyanga, 2017; Gade & Hytti, 2017).

4.1.7. Women and girls' achievement of physical and mental health and social relations

When women and girls lack adequate menstrual products, either because they do not have access to them or because they are unavailable, they choose menstrual materials that can be quite harmful to their health when used unhygienically. Some women use cotton and cloth, and others reusable pads. When not cleaned properly, cloth, reusable pads and disposable pads (if used for too long) can cause pain and discomfort in users, in the form of rashes and burns. The obstacle of "pain" could be removed by providing more menstrual products that women and girls could use to change more often, or by introducing new varieties of products that do not harm them as much, such as the menstrual cup. A pilot research in Uganda found that, when women switched to the menstrual cup, their rashes and burns disappeared, thus removing the obstacle of "pain" and achieving the capability of physical health (Castensson, 2018).

As has been argued in this section, women and girls feel very worried and anxious during their menstruation, as they are unable to control nor understand their bodies. Fear of leakage, as well as stigma, shame, taboos and male peers teasing further marginalise women, increase their feelings of "otherness", and exacerbate their negative feelings, thus affecting their mental health. This is a clear obstacle to the capability of mental health. Studies have shown women's constant worries, feelings of being uncomfortable, and overall very adverse effects on their confidence and self-worth (Castensson, 2018, p. 20). The obstacle "fear of leakage" to the achievement of this capability was removed when introducing menstrual cups, as they do not leak, and left women feeling "*more confident and less self-conscious*" (Castensson, 2018, p. 21). The obstacles of stigma and taboo still need to be removed through education, knowledge and awareness.

As has been previously argued, stigma, taboos and shame are powerful factors that impact menstruating women and girls' confidence when engaging in social relations. In schools, girls are teased by their male peers, feeling shame and embarrassment. Negative attitudes towards menstruation could be the reason why many menstruating women and girls stay away from social interactions. After introducing the menstrual cup to Ugandan women, a study found that women and girls using this menstrual product stopped feeling ashamed and embarrassed, as they were able to control their menstruation and hide it from everyone, particularly husbands and male peers (Castensson, 2018). In other words, adequate, accessible and available menstrual products remove the obstacles of shame, embarrassment and male teasing that women and girls have to face whilst on their period. They also allow women to be more in control of their bodies and, thus, feel more comfortable in social interactions. Although stigma and taboos are not addressed, the capability of social interactions is achieved through an improvement in MHM based on the provision of menstrual products that meet women and girls' needs.

4.2. Impact on education

Inadequate MHM has a very negative impact on girls' education (WHO; UNICEF, 2013), particularly in terms of school engagement and school absenteeism, as "*1 in 10 school-aged African girls does not attend school during menstruation*" (World Bank, 2005; Thomson, 2015). Lower levels of educational attainment, particularly at the secondary and tertiary levels, along with occupational segregation, social norms and taboos impede

girls and women to fulfil the necessary educational requirements to properly develop, participate in society and contribute to their families wealth and wellbeing (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018).

In this section, the focus will first be on menstruation-related causes of lower educational attainment, and then on the consequences and risks that insufficient schooling carries for girls and their communities alike.

4.2.1. MHM-related causes

Different degrees of association have been found between MHM and school attendance (Sumpter & Torondel, 2013; Hennegan, Dolan, Wu, Scott, & Montgomery, 2016). Although most of the studies analysed showed pronounced heterogeneity when measuring absence and in the causes of this absenteeism (shame, embarrassment, bullying, inadequate sanitation, lack of menstrual products, pain…) (Bezruki, von Euler Cheplin, & Tellier, 2016), they all indicate a trend in the same direction. These studies shed light on the negative effects inadequate MHM has on school engagement in educational activities. Further studies have found a five-fold higher absence in girls during menstruation, compared with when not menstruating (Phillips-Howards, et al., 2016), confirming previous findings. In Kenya and Uganda, dropout rates and feelings of shame and discomfort significantly reduced when menstrual products were provided to schoolgirls (Mucherah & Thomas, 2017; Montgomery, et al., 2016).

In the East and Southern Africa region, several pilot studies have further shown the negative impacts of an inadequate MHM. In Kenya and Zimbabwe, studies confirm the strong link between school absenteeism and reduced classroom performance with an inadequate MHM (Njue & Muthaa, 2015; Ndlovu & Bhala, 2016). During menstruation, schoolgirls are victims of sexual harassment and teasing from classmates by boys in school, as a result of leakage and odour, which results in poorer classroom engagement and performance (Mason, et al., 2013; McMahon, et al., 2011).

Furthermore, a 2016 study in Uganda showed that both pain and lack of menstrual products are two of the main reasons why 25% of schoolgirls were unable to attend their classes at least twice a term, mainly when coming from poor households (Ministry of

Health Uganda, et al., 2016). Indeed, dysmenorrhea, which particularly affects schoolgirls, is highly prevalent (Miiro, et al., 2018), who stop attending and engaging in their classes as a consequence of pain and discomfort (De Sanctis, et al., 2016; Peuranpää, Heliövaara-Peippo, Fraser, Paavonen, & Hurskainen, 2014; MoH Uganda, 2016). In other words, the lack of medical care for menstrual issues is a primary reason for school absenteeism.

Additionally, psychological distress caused by shame, fear, and taboos is a further cause of school absenteeism in countries with no or little MHM. Studies from Uganda report that 90.5% of girls' MHM is inadequate, resulting in shame, fear, worries about odour and staining, leading to girls' being teased by classmates. This situation, in turn, causes school engagement to fall and ends up in school absenteeism (Hennegan, Dolan, Wu, Scott, & Montgomery, 2016; Ministry of Health Uganda, 2016). In Malawi, 33% of girls were absent from school at least one day while menstruating. Interestingly, those schoolgirls co-living with a grandmother were more likely to keep attending school, despite a hostile school environment (Grant, Lloyd, & Mensch, 2013).

In other words, school attendance is particularly affected by poverty and menstruation (Miiro, et al., 2018). A study of public primary schools in Garissa County, Kenya, has shown that the majority of schools lacked adequate sanitation facilities (no handwashing points or tissue paper) and did not provide sanitary pads. The researchers found that when sanitary pads and adequate sanitation facilities are available, schoolgirls enrolment, attendance, engagement, performance and self-confidence sharply increased, leading to very positive educational outcomes (Njue & Muthaa, 2015).

This is particularly relevant when considering refugee camps, such as Bwagiriza, Burundi. Refugee girls missed school days as a result of pain and infections and other issues caused by the lack of menstrual products (fear of leakage, blood stains…) (Sommer M. , et al., 2018). Lastly, these findings mostly study the effects of inadequate MHM on primary and secondary school. Although the UN Millennium Development Goals report found that in sub-Saharan Africa, the proportion of girls at those schooling levels had increased, that of female participation in tertiary education had plummeted (UN, 2015).

4.2.2. Consequences of girls dropping out of school

Although in the last two decades, substantial progress has been made, levels of educational attainment for girls are still lower than those of boys in many countries. This is especially shocking when considering secondary and tertiary education: in low-income countries, only 60% of girls complete their primary education and only 33% complete secondary school (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018). The lack of secondary education, along with occupational segregation, social norms and lack of sanitation facilities and menstrual products to manage menstruation significantly hinder the development and healthcare of girls and women, their families and communities.

Girls and women's health, nutrition and wellbeing are further worsened by low educational attainment. Several factors, such as poverty, social norms and beliefs, family issues, child marriage and menstruation push girls out of school while they are still young. By ensuring girls' access and completion of secondary education, their health and that of their families and communities are very positively impacted, as they have a deeper and improved knowledge on how to take care of themselves when sick or injured (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018). Conversely, lower educational attainment perpetuates the lack of knowledge about sexually transmitted diseases, increases child pregnancies, maternal mortality and morbidity, as well as poses high risks to nutrition, intimate partner violence and lessens women's ability to make their own healthcare decisions (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018).

4.2.2.1. Earnings and standards of living

Ensuring girls' primary and secondary education is vital to guarantee higher earning and living standards. Studies by the World Bank have shown that although women with primary education made 14 to 19% more than those with no education at all, those with secondary education earned twice as much, and those with tertiary education three times as much as those with no education at all (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018). To ensure their education, girls need all obstacles to their education removed, especially those concerning exclusively (or almost exclusively) them – sanitation facilities, availability and adequacy of menstrual products, sexual and reproductive health education.

Women with secondary and tertiary education are more likely to participate full-time in the labour force, report higher living standards, and are less likely to state they lack money to purchase food (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018). In fact, women with a lower educational level earn less money out of their jobs, leading to losses in human capital wealth. The World Bank estimates that, in 2018, the loss in human capital wealth resulting from women lacking secondary education (12 years of schooling) ranges between USD 15 and USD 30 trillion globally (World Bank, 2018a).

4.2.2.2. Pervasiveness of child marriage and early childbearing

Menarche, the onset of menstruation, is often seen as an indicator for marriage. Early marriage, as is argued in this study, affects girls' lives in multiple ways. Parents in many low-income countries arrange child marriages for their daughters when they are not in school, to avoid them engaging in sexual activities. Pregnancies outside of marriage result in the exclusion of the girl by the community, which is why child marriages, especially in those countries where the prevalence is high, are arranged by parents to protect their daughters. However, most of these marriages are arranged against the girls' will (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018).

In terms of educational attainment, early marriage involves being expelled from school, and husbands are uninterested in paying for their wives' education, particularly if it is private. Nevertheless, it not so much a matter of convincing parents to end child marriages, as it is of offering sustainable alternatives to early marriages, for girls and parents alike (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018). Alternatives such as compulsory secondary education and a minimum legal age for marriage of 18 not only reduce child marriages and ensure a higher level of education.

Studies have shown that each additional year of secondary education is vital to reduce child marriage by 18%. Child marriages could be virtually eliminated if all girls completed their secondary education (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018). Moreover, this study further states that, by enrolling girls in universal secondary education, teen pregnancies, early childbearing would decrease by 75%, as they go together with child marriage.

4.2.2.3. Fertility and population growth

As previously mentioned, girls who drop out of school early are more likely to marry as children, resulting in early childbearing and, therefore, have more children over their lifetime. The impact of secondary education attainment on total fertility is significant – a reduction to 1.25 child per woman on average in low-income countries, down by 22.3% (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018).

The benefits of improved education for girls, particularly in terms of sexual and reproductive health, extend to population growth, too, as the use of modern contraceptives increases. Higher fertility rates and population growth directly correlate with low levels of school for girls, which, in turn, decrease the levels of human capital wealth per person, particularly for low-income countries with high population growth. Therefore, the reduction of population growth could lead to a significant demographic dividend[7] and socioeconomic advancement, and even more so for countries that have not yet achieved the demographic transition (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018).

Poor health-related to sexual and reproductive health, particularly too many, too early and too frequent pregnancies, is the leading cause of death and disability among girls in women, especially in low-income countries (UN, 2017).

4.2.2.4. Agency and decision-making

Women's decision-making ability could increase by 10%, with the achievement of universal secondary education. In fact, women that completed secondary education are less likely to be satisfied with basic services than those with no education (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018), which could push for reforms to improve communities' living standards.

[7] Countries in which the population of working age is in good health, educated, employed and has a lower proportion of young dependents will have the greatest demographic opportunity for development. As fertility decreases, parents are able to allocate more resources per child, women are free to enter the labour force, and households can save for old age. This situation generates a considerable national economic payoff – a demographic dividend (UNFPA, 2020).

4.2.2.5. Social capital and institutions

Women with secondary education are more likely to state they rely on their friends when in need and show 10% more altruistic behaviours (volunteering, donating to charity…) than those with no education (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018). This is an area for further research, as it would be interesting to find out if higher living standards and education push women to be more altruistic, or they are more likely to volunteer and donate because they have the means to do so.

In other words, ensuring girls stay at school and complete their secondary education is crucial for their development and that of their communities and societies. Although there are many factors that keep girls out of school, such as early marriage and social norms, barriers to their education need to be broken down. A very effective way to do so would be investing in universal secondary level education to ensure girls acquire foundational cognitive and socio-emotional skills while in school (Wodon, Montenegro, Nguyen, & Onagoruwa, 2018).

4.2.3. Women and girls' achievement of education

There are a few MHM-related obstacles that impede women and girls' achievement of education. The first is the lack of adequate facilities in schools and other learning spaces. As will be argued later in the study, schoolgirls (and female staff in schools and universities) avoid using the school's sanitation facilities (if there are any) to change and wash their menstrual products. This situation forces most schoolgirls to stay at home, which results in high rates of absenteeism. A further issue related to inadequate (or non-existent) sanitation facilities is schoolgirls discomfort, shame, and embarrassment as well as fear of leakage, as they are not able to adequately change or wash their menstrual products during school hours. In some Ugandan communities, this first obstacle has been overcome by the introduction of menstrual cups to schoolgirls (Castensson, 2018). Although sanitation facilities remain inadequate to MHM, menstrual cups need only be changed every twelve hours. This allows schoolgirls to empty them out when they get back home and inserting it back in without having to deal with the discomfort of the school's inadequate sanitation facilities. Therefore, the use of the menstrual cup enables

them to achieve their capability of education. Other menstrual products, however, do not remove this obstacle.

The second obstacle to the achievement of education is the lack of menstrual products. Although some studies have shown that a few schools have "emergency kits" for their students, these are very rare and only used in emergencies. Teachers have found that those students who consistently ask for these emergency pads are unable to get them at home (Castensson, 2018). In order to achieve the capability of education, this obstacle could be removed by increasing the supply of menstrual products, ideally through local and regional companies, such as AFRIpads and Kasha.

The last obstacle women and girls need to be removed in terms of education is, again, the fear of leakage and staining uniforms. Although both the accessibility and availability of a large variety of menstrual products that meet women and girls' needs is vital to remove this obstacle, education, knowledge and awareness for both girls and boys are crucial to reduce fear, shame and stigmas. Only by approaching MHM in a more holistically will women be able to achieve their capabilities.

4.3. Impact on employment

The lack of an adequate Menstrual Health Management affects the work environment and working conditions of women in Africa very negatively. This is particularly significant when there is little or no medical care and education. As has been argued in this study, period poverty creates a large number of health-related issues, keeping women out of work. In fact, between 10% and 15% of South African women suffer from endometriosis and, as a result of the dysmenorrhea caused by this condition, they have to adapt their working times to their menstrual cycle (Roomaney & Kagee, 2015).

Although there is virtually no research of the impact of an inadequate MHM on employment and work environment in the East and Southern Africa region, there are interesting findings on other parts of the world that can easily mirror the situation in Africa. Studies in Bangladesh, for instance, showed that nearly 80% of female factory employees stayed out of work for six days every month as a result of a lack of menstrual products. However, when sanitary pads were provided, the proportion of these women

missing work plunged to 3% (WSSCC, 2013). In the Philippines, the lack of menstrual products and sanitation facilities keeps women out of work for one day a month, which translates into a loss of $13 million per year (World Bank, 2008). Nevertheless, research is very limited in this area, and even more heterogeneous, making it very difficult to draw conclusions and, potentially, make decisions and allocate resources (UNFPA, 2018).

4.3.1. Women and girls' achievement of work, employment and mobility

The issue of inadequate sanitation facilities is also challenging at work for menstruating employees. Although it has been previously argued that using a menstrual cup does, in fact, remove the obstacle of "inadequate sanitation facilities" and helps achieve the capability of work (Castensson, 2018), the obstacle remains for the rest of the menstrual products. Adequate sanitation facilities are still much needed to meet the different needs of menstruating women and enable them to expand this capability and develop.

Likewise, the obstacle of "fear of leakage" is also quite predominant in the work environment. This situation is particularly significant for women whose job requires physical activity, such as farmers. A study in Uganda has shown that a menstrual cup is much more suited to female farmers' needs, as it enables them to engage and "*successfully perform heavy and physically active work tasks*" (Castensson, 2018), such as digging, which they could not do with pads, cloths or cotton. Menstrual cups are also quite handy for women whose jobs do not require them to move so much, as it enables them to "*work more confidently without worrying about change her menstrual product*" (Castensson, 2018) or staining their clothes. In this case, menstrual cups removed the obstacle caused by inadequate menstrual products, thus enabling women to achieve the capability of work.

Furthermore, achieving the capability of mobility is fundamental to expand women's freedom. The inconvenience and discomfort caused by different barriers to adequate menstrual health restrict women's physical ability to move long distances as well as their choice of transportation (Castensson, 2018). Again, the menstrual cup seems the most appropriate menstrual product with which to manage menstruation. However, a product-based approach to menstruation remains very narrow (Amaya, Marcatili, & Bhavaraju, 2020).

It is important to remember that some obstacles are only removed by introducing a new product (the menstrual cup), which is unaffordable for most women and girls. Although it can be used for as long as ten years, a menstrual cup average price in Kenya region is 2,510 Kenyan shillings (around €21.36) (Kasha Kenya, n.d), and 70,000 Ugandan shillings (around €16.85) (Castensson, 2018). Most people in the East and Southern Africa region are unable to afford a menstrual cup, even though in the long run, they are cheaper than disposable pads (Castensson, 2018). The menstrual merely made some obstacles irrelevant, but those obstacles remained for the large majority of people.

Lastly, there is the issue of menstrual pain. No menstrual product is designed to stop dysmenorrhea, which is why puberty education from an early age, awareness and understanding is crucial to end taboos and stigmas and ensure women and girls seek medical help (UNFPA, 2019).

Improving MHM for women and girls, in the long term, has very positive effects on their health and wellbeing and, therefore, on their achieved capabilities, as well as on their role in their communities and societies (Castensson, 2018). Moreover, improving MHM helps mitigate negative attitudes towards menstruation, which in turn influences gender roles, transforms deeper societal structures and pushes for gender equality.

5. Barriers and Enablers for Menstrual Health Management

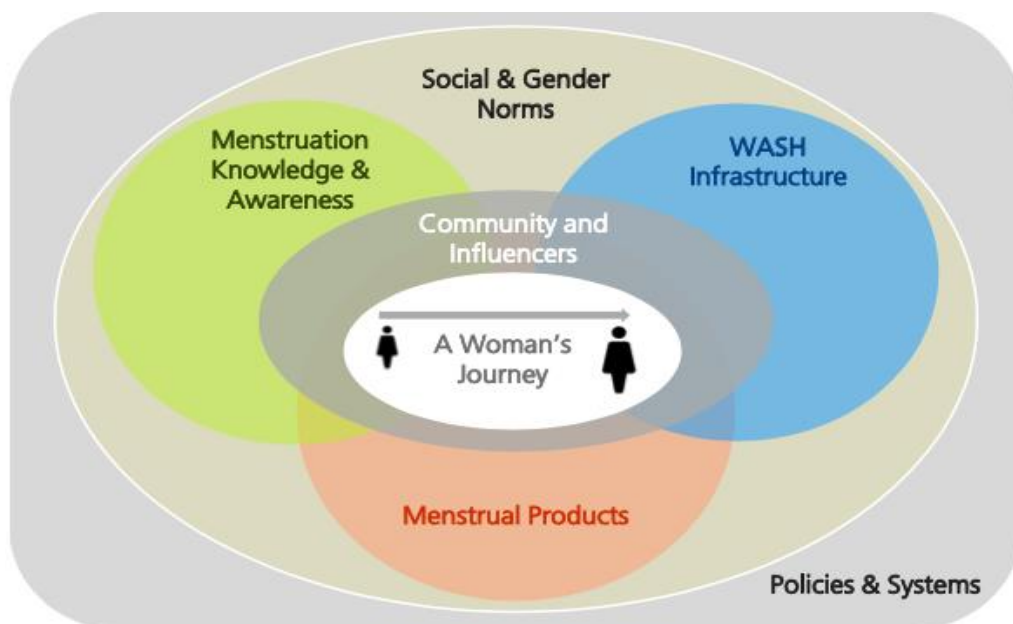
The challenge of Menstrual Health Management expands across different areas and factors that intersect and mutually reinforce each other, profoundly shaping a menstruator's experience. These areas and factors range from knowledge about menstruation, access (availability and affordability) to different menstrual materials, sanitation facilities that adequately meet a menstruator's needs, and a structure of social and gender norms to manage menstruation in women and girls' daily lives. These factors and areas can either limit or enhance women and girls' lives and overall wellbeing, particularly when experiencing menstruation.

An MHM Enabler is a factor that is indispensable to ensure adequate menstrual health: "*education; awareness; products; sanitation*" (Sommer M. , et al., 2016b), and "*policy*" (Geertz, Iyer, Kasen, Mazzola, & Peterson, An Opportunity to Address Menstrual Health

and Gender Equity, 2016a). On the contrary, an MHM barrier is the negative side of enablers, such as little or no knowledge, guidance and skills"; unsupportive and patriarchal attitudes and social norms around menstruation leading to stigma, myths and taboos; insufficient and/or inadequate access to affordable and appropriate menstrual materials; insufficient or inadequate access to basic WASH services and MHH-supportive systems (waste disposal…) in schools, households and health facilities; and a weak enabling environment: little or no political, policy framework and resource allocation (UNICEF, 2019).

The next sections will describe how these factors play a crucial role as barriers and enablers to MHM, the panorama of interventions in the ESA region and their effectiveness and, particularly, in girls and women's lives.

Figure 2: Women and girls in a wider menstrual health framework



Source: Amaya, Marcatili, & Bhavaraju, 2020.

5.1. Social and gender norms

Across cultures, gender inequity is reinforced by the negative perspective societies have of menstruation. Social and gender norms arise from deep-seated taboos and stigmas, which perpetuate the idea that menstruation should be hidden, as it is dirty and impure. These beliefs devaluate and "other" women all throughout their lives and generate very

negative behaviours and outcomes related to MHM (Amaya, Marcatili, & Bhavaraju, 2020).

Around the world, particularly in low- and middle-income countries, "*the sight of menstrual blood on used absorbents is believed to cause harm to those who see it or come into contact with it, and some fear that it may be used for black magic*" (Elledge, et al., 2018). In Zimbabwe, high proportions of women avoid engaging in social activities, school and work when menstruating (Zimbabwe National Statistics Agency; UNICEF, 2019). In other words, stigma, taboos, and social and gender norms around menstruation lead to women's societal and self-exclusion (Amaya, Marcatili, & Bhavaraju, 2020).

5.1.1. Broader systems: stigmas and taboos at the institutional level

Menstruation is conspicuous by its absence everywhere in society, from media and public discourse to government policy. As 70% of the leadership in the global health sector is male, MHM is consistently overlooked, and the challenges and issues that an inadequate MHM poses on women and girls are either ignored or misunderstood (Global Health 50/50, 2018).

However, education and awareness have been rapidly growing thanks to an increasing number of organisations, whose actions address menstruation stigma and menstrual health taboos. In 2019, a group of seven UN rights experts issued a call to break "*persistent harmful socio-cultural norms, stigma, misconceptions and taboos around menstruation*" in order to end disempowering discrimination of women's and girls' human rights (UN News, 2019). In that same year, Period. End of Sentence was awarded an Academy Award for Best Short Documentary (BBC News, 2019), and a grassroots campaign by South African activists amplified by Global Citizen, National Geographic, and Procter & Gamble and world-recognised celebrities resulted in the creation of a budget line item from sanitation products, as well as the preplacement of pit latrines in schools (National Geographic; Global Citizen, 2019).

5.1.2. Communities: beliefs about menstruation at the community level

Cultural, religious and social norms lead to communities believing harmful ideas about menstruation. Research has found that mothers and grandmothers are crucial community influencers to shape biases around MHM for boys and girls at the community level (Geertz, Iyer, Kasen, Mazzola, & Peterson, 2016a). Biases range from subconscious perceptions that menstruation is unclean and thus needs to be hidden away from both view and conversation, to extreme circumstances, in which women and girls can be severely harmed (Amaya, Marcatili, & Bhavaraju, 2020).

Importantly, boys and men play a significant role in supporting girls and women in their MHM, as they are key players in their communities (fathers, brothers, uncles, teachers, co-workers…). As heads of the households, men control a family's finances, which are key to ensure women and girls have access to menstrual products. Educating boys from their adolescence to respect girls, particularly when they are menstruating, is vital to significantly reduce the MHM-related challenges and issues that women and girls have to face every day (House, Mahon, & Cavill, 2012). Moreover, it helps them "*become more understanding and supportive husbands and fathers*" (House, Mahon, & Cavill, 2012). In doing so, men and boys help remove the obstacle of shame and stigma and push for the achievement of women and girls' capabilities.

5.1.3. Individuals: shame and self-stigma at the individual level

Shame and self-stigma around menstruation are continuously reinforced by external narratives, strongly conditioning women and girls' behaviours at home, school or work to keep their menstruation out of sight, particularly when in pain and discomfort (Amaya, Marcatili, & Bhavaraju, 2020). In Uganda, a study showed that deeply rooted cultural and religious structures are quite strong, despite providing training and education on the myth of the hymen and virginity, which questioned the cultural appropriateness of the menstrual cup (Castensson, 2018).

Menstruation is a natural process of the female body necessary to ensure the continued existence of humankind. Thus, menstruation should not result in exclusion, shame, or embarrassment. Social norms, taboos and stigma are at the core of a woman's experience

with MHM. They need to be addressed at these three different levels to normalise menstruation and encourage body literacy as a fundamental part of SRH. Shame, taboos and stigma are very strong barriers and obstacles that need to be removed to allow for the achievement of women and girls' capabilities and, thus, their freedom and development.

5.2. Education, knowledge and awareness

Menstrual education, knowledge, and awareness are crucial throughout all the different phases of a woman's life. Not only do they push for a greater agency for women to deal with their menstruation, but they also foster body literacy, increasing women and girls' understanding of the close relationship between their health and their menstrual cycles. As a result, menstrual education, knowledge and awareness allow them to achieve their capability and articulate and advocate for their needs (Amaya, Marcatili, & Bhavaraju, 2020).

Therefore, MHM is vital for women and girls' sexual and reproductive health (SRH). As a natural consequence, experts argue for the significance of integrating menstruation into the SRH field, as it is a vital component of a menstruator's lifecycle. In other words, "*Equipping women with knowledge about their cycle and the potential impacts of different contraceptive options can support greater body literacy and contraceptive uptake*" (Amaya, Marcatili, & Bhavaraju, 2020).

Puberty education before menarche is significant for MHM interventions to be effective. Comprehensive puberty education needs to go beyond biological elements to address gender norms associated with puberty. This education needs not only to be for schoolgirls but also for those girls out of school, boys and other family members that influence girls. Studies have shown that lower levels of menstruation-related knowledge perpetuate high levels of shame about periods, as well as fears and misconceptions about its purpose and origin of menstrual bleeding and how to adequately manage it (Chandra-Mouli & Patel, 2017).

Around the world, more and more women start using mobile platforms and smartphone apps to manage their menstrual cycles. In Kenya, Ghana and Nigeria, *Flo* and *Period Tracker* are amongst the countries' most downloaded apps. This clearly shows that

women and girls are beginning to look for information about their menstrual cycles, particularly when using contraceptives. Moreover, MHM education can help recognise broader health issues (Amaya, Marcatili, & Bhavaraju, 2020). Technology is a great way to remove obstacles in terms of lack of education and awareness around menstruation. Therefore, the availability, accessibility and affordability of technology for women is crucial to the achievement of their capabilities.

5.3. Menstrual methods/products and supplies

Menstrual products are increasingly viewed as a component of the solution, rather than MHM challenges' silver bullet. *Access* to adequate menstrual products helps surmount menstruation-related issues, avoids the disruption of livelihoods and education, and ensures the physical and mental wellbeing of women and girls during their periods (Amaya, Marcatili, & Bhavaraju, 2020). Furthermore, it is crucial to combine informed product choice with access. Menstrual products can be reusable or disposable materials that catch or absorb blood, such as pads, cloths, tampons or cups. However, additional menstrual products can also require the need for items like underwear, pain relief substances and body and laundry soap (Amaya, Marcatili, & Bhavaraju, 2020).

Despite recent progress, most women and girls in low- and middle-income countries are still incapable to access and acquire the high-quality, affordable products of their choice. This situation is further aggravated in rural areas: in Ethiopia, only one in four women uses sanitary pads, compared to over three in four in urban areas (PMA2020/Ethiopia, 2018); in Uganda, only 59% of women in rural areas use sanitary pads, compared with 84% of women in urban areas (PMA2020/Uganda, 2018) (PMA2020/Uganda, 2018). In Kenya, however, 83.2% of women in rural areas and 94.4% of those in urban areas use sanitary pads (PMA2020/Kenya, 2018). Access (affordability and availability) of menstrual products can be assessed through two perspectives: supply-side and demand-side.

5.3.1. Supply-side constraints

Supply-side constraints revolve around affordability and quality of the product. While more affordable products are more likely to be of less quality, high-quality products are

unaffordable for most girls and women. Supply-side constraints arise from barriers across a product's value chain (product innovation, raw materials, manufacturing, distribution, and retail) (Amaya, Marcatili, & Bhavaraju, 2020).

Large companies producing menstrual products have always served high-income markets. However, these have now reached saturation, pushing companies in the search for new customers, oftentimes in low- and middle-income countries. This ambition is toned down by these countries' lack of waste management and sanitation infrastructures, which could test companies' reputations. In low- and middle-income countries, social enterprises have prioritised last-mile distribution – most of the decentralised, grassroots manufacturers cannot operate at scale, but can effectively reach rural areas (Amaya, Marcatili, & Bhavaraju, 2020). Several local SMEs, such as AFRIpads, have actually reached sales volumes that allow for economies of scale in manufacturing. A further noteworthy company is Kasha, which distributes SRH products via direct delivery, therefore improving access to these products for women in Kenya and Rwanda.

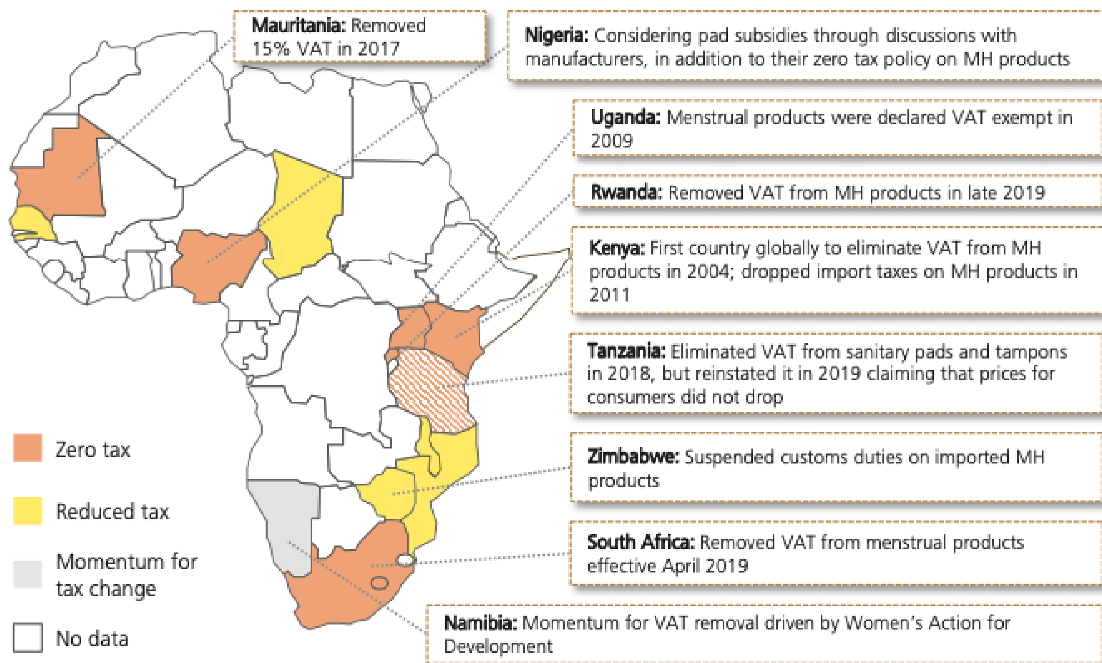
Government distribution programmes are intended to solve the affordability use by distributing pads to schoolgirls. In Uganda, 91% of girls are enrolled in primary school, compared to only 22% in secondary school, a figure that drops even further for those living in rural areas. In Uganda's Kamuli District, in which levels of gender disparity and education were quite high, Save the Children, UNESCO, WaterAid, and AFRIpads collaborated with SOAS University of London and Plan International Uganda to provide reusable sanitary pads and adolescent reproductive education to schoolgirls. By the end of the project, researchers stated that an improved MHM increased schoolgirls attendance by 17% (Dolan & Tofaris, 2018).

However, poor distribution and delivery and corruption have kept these programmes out of those communities that need them the most. In the slums of Dandora (Nairobi, Kenya), for instance, sanitary pads never reached the community because the government never actually implement its distribution programme. This was a result of governmental lack of transparency, accountability, monitoring and surveillance, as well as high levels of corruption, denying adequate social protection to girls in the slums, and further exacerbating their vulnerability to long-term poverty (Mire, 2020). Moreover, Kenyan

cartels have further aggravated the government's inefficacy by stealing over 300,000 expired pads to be repackaged and sold to other countries (Ambani, 2020).

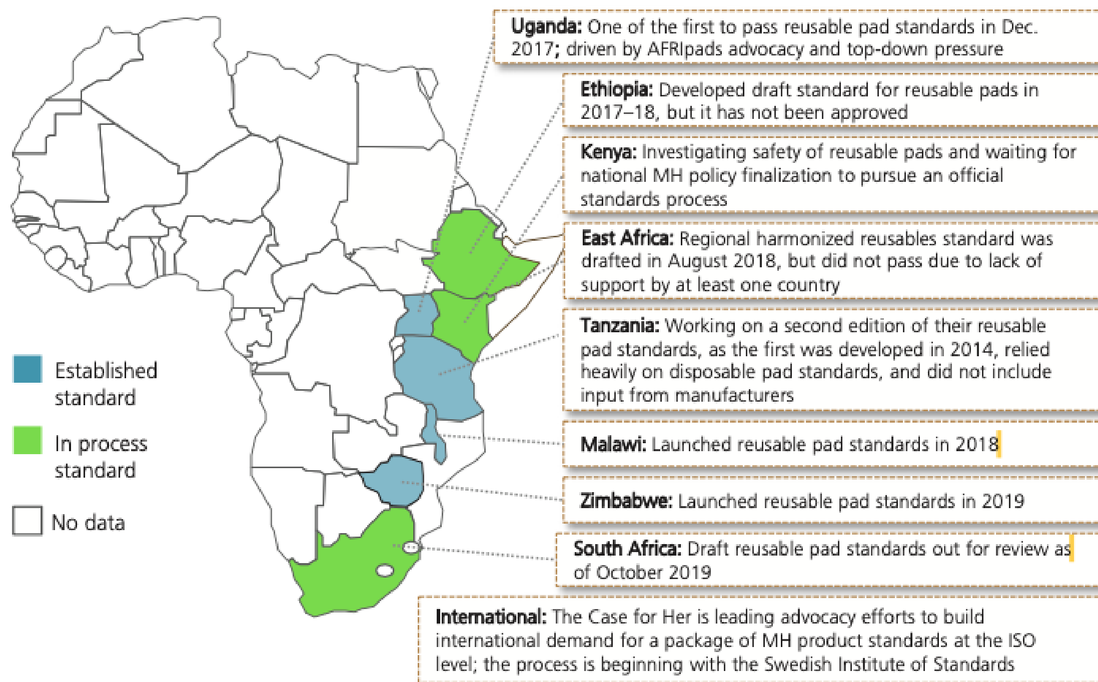
Waste management systems need to be set up to deal with disposable menstrual products, particularly if governments are going to implement free product provision programmes. Moreover, governments need to come together to establish product standards and taxes. In East Africa, a standard for reusable (washable) menstrual products is in progress and would then be implemented to all countries in the area. Taxation of menstrual products has also been an object of debate, and some countries of the Eastern and Southern Africa region have already been removed (WASH United, 2019). However, "*the impact of tax removal on product affordability may not be significant*", although it can be understood "*as an important signal to combat the stigma of menstruation and create momentum for additional change*" (Amaya, Marcatili, & Bhavaraju, 2020).

Figure 3: Menstrual product taxation in East and Southern Africa



Source: Amaya, Marcatili, & Bhavaraju, 2020.

Figure 4: Standards for menstrual products in East and Southern Africa.



Source: Amaya, Marcatili, & Bhavaraju, 2020.

5.3.2. Demand-side constraints

In addition to supply-side constraints, understanding demand-side limitations is crucial to improve MHM successfully. As has been previously discussed, adequate menstruation education, knowledge and awareness can help girls and women make informed decisions when choosing menstrual products. "*Anecdotal evidence suggests that concern about the use of insertable products such as tampons impacting virginity may keep certain individuals from using products that would otherwise suit their needs and lifestyle*" (Amaya, Marcatili, & Bhavaraju, 2020).

Girls and women's ability to purchase menstrual products is particularly impacted by product affordability, particularly for poor households – if too expensive, then menstrual products need to be left out of a household's budget. In fact, evidence suggests that "*individuals' willingness to pay is below current market prices in several regions*" (Amaya, Marcatili, & Bhavaraju, 2020). In Ethiopia, for instance, nearly three in ten women are not willing to pay the average market price for a normal pack of pads, although quality seems to be more important than price (PSI, 2018).

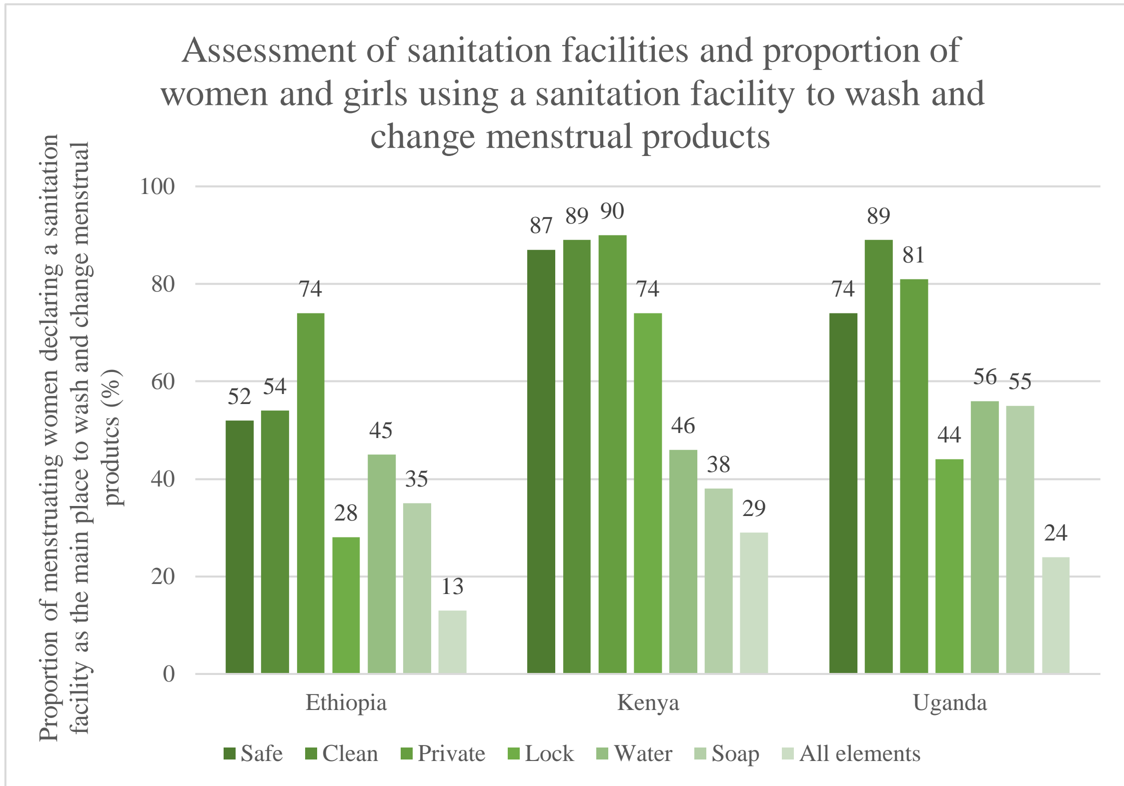
The lack of sanitation and waste management infrastructures further hinders women choice of favourite menstrual product. Inadequate waste disposal infrastructures may dissuade women from using disposable products, such as sanitary pads and tampons. Lack of access to clean water may discourage women from using reusable products, such as the menstrual cup. Likewise, lack of privacy can exacerbate the impact of stigmas and taboos around menstruation, preventing girls from using cloths and other reusable products for fear of shame of drying them in the open air (required for adequate sanitation) (Amaya, Marcatili, & Bhavaraju, 2020).

5.4.Sanitation facilities

Poor access to improved sanitation (clean water, sanitation systems and hygienic premises) is especially challenging to manage menstrual health. Currently, over two billion people still have no access to basic sanitation facilities (toilets, latrines), resulting in harmful health outcomes (WHO; UNICEF, 2019). Sanitation facilities regularly neglect the needs of girls and women while menstruating, as they lack clean water and soap, discouraging them from using reusable products, such as clothes, safely (Amaya, Marcatili, & Bhavaraju, 2020). It is important to keep in mind that gender-based inequalities in access to WASH services need to be overcome in order to achieve SDG 5: "Achieve gender equality and empower all women and girls" (see Figure 5). The lack of sanitation facilities, as has been previously argued, is a clear obstacle that undermines women and girls' human rights and the achievement or their capabilities.

Although noticeable progress has been made in school-based sanitation facilities, most menstruating girls and women typically wash and change their menstrual products at home (WHO; UNICEF, 2019). Home-based and public sanitation facilities are not sufficiently taken into account, stressing the need for privacy, access to clean water in the home, at school and at work, and in public spaces. Little or no access to sanitation facilities at the workplace can result in poor outcomes on the work productivity and retention of women (Czura, Menzel, & Miotto, 2019), leading to higher rates of absenteeism amongst menstruating women and lack of engagement and participation.

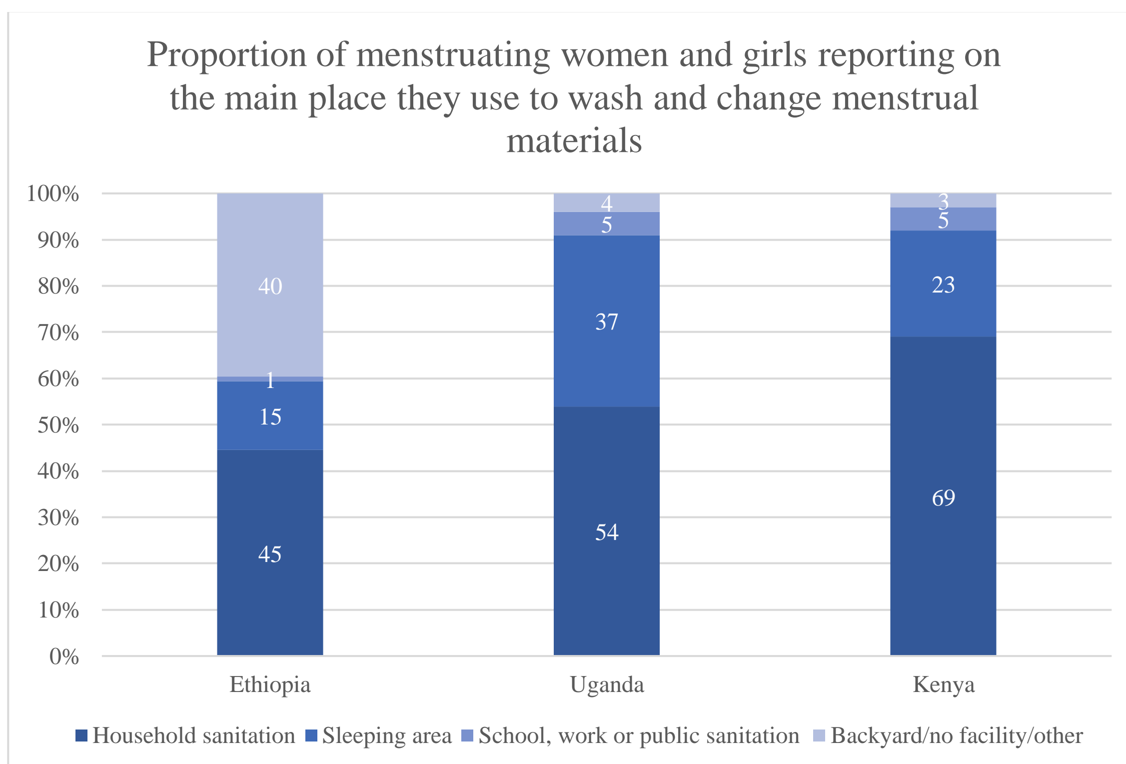
Figure 5: Proportion of menstruating women and girls using a sanitation facility to wash and change their menstrual products.



Source: Adapted from "Progress on household drinking water sanitation and hygiene 2000-2017: Special focus on inequalities (WHO; UNICEF, 2019) and "Advancing Gender Equity by Improving Menstrual Health" (Amaya, Marcatili, & Bhavaraju, 2020), using data from PMA2020 survey data (PMA2020/Ethiopia, 2018; PMA2020/Kenya, 2018; PMA2020/Uganda, 2018).

Poor sanitation facilities (or the lack of access to them) has a very strong influence on the choice of menstrual materials, as menstruating women and girls may be discouraged to use reusable menstrual products, such as reusable pads and menstrual cups, as a result of lack of clean water to wash products in a private space, as can be seen in Figure 6 (Amaya, Marcatili, & Bhavaraju, 2020).

Figure 6: Proportion of menstruating women and girls aged 15-49, by place they typically use to wash and change their menstrual materials.



Source: Adapted from WHO; UNICEF (2019) and data from PMA2020 survey data (PMA2020/Ethiopia, 2018; PMA2020/Kenya, 2018; PMA2020/Uganda, 2018).

Furthermore, sanitation facilities are crucial to managing menstrual disposal (both the blood and the materials). Because stigma and taboo around menstruation are so deeply entrenched in societies, an inadequate waste management infrastructure prevents menstruating girls and women from consistently using sanitation facilities, for fear of mockery and alienation following the disposal of menstrual waste. In fact, women in Kenya avoid using improved in-home toilets that are weekly emptied for fear and embarrassment that toilet servicing staff sees menstrual products and blood, and instead continue using unsafe public pit latrines (Bill & Melinda Gates Foundation, 2018).

Waste management infrastructures risk failing when not taking into account menstruation into WASH systems. In Eastern Kenya, 40% of the material cleared from blocked sewers were menstrual pads; in Dar-es-Salaam (Tanzania), menstrual waste is a common reason for the monthly average of 150 sewer blockages; and in Durban (South Africa), menstrual material in latrines are a large part of the reason why frequent blockages of the suction hoses used for pit emptying are frequent (Elledge, et al., 2018).

Although innovations have been crucial to deal with waste management issues, particularly the use of incinerators in some countries, most low- and middle-income countries still worry about the impact that free sanitary product provision programmes can have on their waste management infrastructures (Amaya, Marcatili, & Bhavaraju, 2020).

A more holistic approach to WASH that addresses education, social and gender norms, infrastructure and product components is much needed. In order to adequately introduce menstruation into WASH programmes, leading institutions have created training guides and toolkits for development practitioners to incorporate MHM throughout the WASH value chain. Examples of such are the training guide by the Sanitation and Hygiene Applied Research for Equity (SHARE) consortium and WaterAid (Mahon & Cavill, 2012), which specifically addresses the needs of people with disabilities, and that by the International Rescue Committee (Sommer, Schmitt, & Clatworthy, 2017).

5.5. Policies on Menstrual Health Management in ESA Region

In the past few years, MHM has started to be envisioned as a systemic problem that needs to be improved for women and girls. As implementing an adequate MHM entails the involvement and engagement of different actors across different sectors and disciplines, the task is quite complicated. In fact, the field of MHM is currently divided, hindering donors' funding, as they lack clarity on how and what to fund, as well as actors' intervention since the MHM landscape is unclear. This latter situation has led to doubling and gaps of efforts in different areas. Funding is also scarce for research, which prevents the solidification of evidence, which in turns discourages donors from funding and implementers to initiate their programmes (Amaya, Marcatili, & Bhavaraju, 2020).

5.5.1. National governments

National governments implication is crucial to improve MHM. Not only are they responsible for both product and tax policy, they are also in charge of programmes in schools. Collaboration across ministries is key but to implement a multi-pronged approach in terms of policing and integrated programmes (Amaya, Marcatili, & Bhavaraju, 2020).

In 2017 in Kenya, for example, the government launched a plan that allocated $4.6 million-worth free sanitary pads as well as disposal systems to girls in public schools, which required the close collaboration of different government departments, particularly the State Department for Gender Affairs and the Ministries of Health and Education (Ombuor, 2018). Likewise, in 2017, the government of Zambia published MHM Guidelines (Zambian Ministry of General Education, 2016) and passed a law allowing women to take time off work due to painful menstrual periods (Pattani, 2017).

Moreover, researchers have called for governments to develop clear and specific policies on the provision of menstrual products and sanitation facilities for schoolgirls. They further recommend governments to "*set aside an adequate budgetary allocation to provide schools with sanitary facilities*" (Njue & Muthaa, 2015), in order to increase secondary school enrolment and retention among schoolgirls.

In other words, multi-ministerial coordination is vital to successfully design and implement MHM programmes, although a large number of countries still lack the resources to adopt national guidelines (Amaya, Marcatili, & Bhavaraju, 2020).

5.5.2. Global funders and donors

Funding for MHM is both inconsistent and insufficient. Private foundations have decreased their funding to MHM, although increasingly more donors fund MHM-intersecting projects (Amaya, Marcatili, & Bhavaraju, 2020). An example of such is the Bill & Melinda Gates Foundation has funded MHM-based efforts, such as those taking into account menstruation in the design of sanitation facilities (Bill & Melinda Gates Foundation, 2019a), programmes and toolkits that integrate comprehensive sexuality education in family planning programming (Bill & Melinda Gates Foundation, 2019b), as well as the 2020 Global Grand Challenge, which is focused on menstrual products innovations (Bill & Melinda Gates Foundation, 2020).

Further funders invest and donate their money bilaterally. For instance, US AID funds programmes aimed at sanitation, family planning, and education, in which MHM is included. This focus is also shared by multilateral organisations, such as UNICEF and

UNFPA (Amaya, Marcatili, & Bhavaraju, 2020). Newer funders like The Case for Her take greater risks through a more innovative and flexible investment strategy, based on convertible debt, equity investments and grants (The Case for Her, 2017).

Unfortunately, private funding remains a minor part of MHM funding. Field actors such as advocacy organisations, NGOs and social entrepreneurs are trying to raise awareness and funds to fill the significant resource gap that is left (Amaya, Marcatili, & Bhavaraju, 2020).

5.5.3. Grassroots coalitions

In the past few years, grassroots coalitions have grown and unified around MHM. This phenomenon can be seen at the national, regional, and global levels to push for further resource development, advocacy and evidence (Amaya, Marcatili, & Bhavaraju, 2020).

At the national level, the WASH Alliance Kenya seeks to improve access to Water, Sanitation and Hygiene for everyone. With financial support from the Dutch government since 2011, WASH Alliance Kenya enhances connection and strategic partnership between state and non-state WASH actors to adequate their response towards Kenya's poor's WASH needs. WASH Alliance Kenya brings together communities, the private sector, NGOs, the national government and local governments, as well as international organisations to bring about change and local, sustainable WASH solutions (WASH Alliance Kenya, 2018).

At the regional level, we can find the African Coalition for Menstrual Health Management. Funded by the UNFPA since 2018, it works throughout the East and Southern Africa region and focuses on the coordination of actors, knowledge sharing, dialogue. It also enhances partnerships among grassroots practitioners, corporations, social entrepreneurs, regional development bodies, and national governments (Menstrual Hygiene Day, 2019).

At the global level, the Global Menstrual Health and Hygiene Collective (MHHC) connects international actors, such as NGOs, UN agencies, academic institutions, private sector organisations and networks, with six voluntary action groups focused on the

organisation's strategy, mobilising narrative, investment, advocacy, definitions and evidence. This coalition is supported by the Water Supply and Sanitation Collaborative Council (WSSCC) and WaterAid (WaterAid, 2020).

Most coalitions depend on their staff's voluntary time and rely on very scarce resources, which complicates organisation among different actors and hinders the building of comprehensive approaches to menstruation, thus impeding MHM improvement (Amaya, Marcatili, & Bhavaraju, 2020).

6. International Actors and MHM

Adolescent girls and women's freedom to manage their menstrual health in a hygienic, practical and dignified fashion enables them to enjoy human rights such as the rights to health, water and sanitation, and education (HRW, 2017).

6.1. MHM Sustainable Development Goals

Since the beginning of the millennium, UN agencies, together with Member States' governments, have developed goals and standards at global, regional and national levels. In 2000, the UN Millennium Declaration committed nations to the reduction of extreme poverty by 2015 by setting the Millennium Development Goals (MDGs), eight time-bound targets (UNDP, 2017).

In 2015, the 193 Member States of the UN adopted the 2030 Development Agenda "*Transforming our world: the 2030 Agenda for Sustainable Development*" (UN, 2020), which set 17 Sustainable Development Goals (SDGs) to "*free humanity from poverty, secure a healthy planet for future generations, and build peaceful, inclusive societies as a foundation for ensuring lives of dignity for all*" (UN, 2017).

While both the MDGs and the SDGs include the dimensions of gender equality and women empowerment to a certain extent, neither set of goals directly targets menstruation – an issue that affects *"slightly more than 25% of the total population*" (UNFPA, 2018). Achieving adequate levels of MHM is fundamental to ensure the respect of girls' and women's human rights, a crucial objective of the SDGs.

Guaranteeing menstruators' access to MHM is fundamental to the accomplishing other SDGs. As previously mentioned, the lack of basic knowledge about sexual and reproductive health and puberty leads to early and unwanted pregnancy. Mental health is very negatively impacted by shame, taboos, stigma and stress surrounding menstruation. Unhygienic sanitation products can generate reproductive tract infections. These issues are interrelated with Good Health and Wellbeing (SDG 3).

In previous sections of this research, the dramatic effect inadequate MHM has on girls schooling, and education has been discussed. The lack of WASH facilities and/or support from the school staff and students impacts girls' and women's education (SDG 4), work (SDG 5), and economic opportunities and professional development (SDG 8). Therefore, the achievement of SDG 5 (Gender Equality) is very deeply compromised by the adequacy of girls' and women's MHM, particularly when social practices, taboos, and stigmas bar them from fully participating in society and public life (SDG 5.5).

By incapacitating girls and women to be part of the community, taboos, shame and stigma, and an inadequate MHM hinder gender equality and development (UNFPA, 2018). Girls' and women's participation in public life is crucial to the development of markets for quality, available, affordable, and sustainable menstrual supplies. The issue of menstruation is indirectly present under six SDGs:

- *Goal 3*: Good Health and Wellbeing. Target 7 mentions the need for access to sexual and reproductive health services;
- *Goal 4*: Quality Education. Indicator 4.a.1 mentions "single-sex sanitation facilities" (UN, 2020), which could be interpreted as an indirect reference to MHM. Target 1 further stresses the importance of equal access to primary, secondary and tertiary education;
- *Goal 5*: Gender Equality. Target 6 particularly focuses on SRHR, which could also be an indirect reference to MHM;
- *Goal 6*: Clean Water and Sanitation. Target 2: "*By 2030, achieve access to adequate and equitable sanitation and hygiene*" further stresses the pressing necessity of taking into account the "*needs of women and girls*" (UN, 2020), which could be accepted as an indirect reference to MHM (UNFPA, 2018).
- *Goal 8*: Decent Work and Economic Growth.
- *Goal 12*: Responsible Consumption and Production.

As can be deduced from this analysis, girls' and women's human rights are violated by the lack of adequate MHM, such as the right to education, health, work, water and sanitation (HRW, 2017).

6.2.The African Union 2063 Agenda: "the Africa we want"

In the African Union, Agenda 2063: The Africa we want, MHM is not explicitly mentioned. However, in Aspiration 6: "*An Africa whose development is people-driven, relying on the potential of African people, especially its women and youth, and caring for children*" (African Union, 2015), a strong emphasis is put on the necessary leadership of African women and Africa's youth in order to ensure a sustainable development driven by the citizens of the continent.

Moreover, in paragraphs 50 and 51, the empowerment of the African woman in all spheres of life is put forward, as are her "*equal social, political and economic rights, including the rights to own and inherit property, sign contracts, register and manage businesses*" (African Union, 2015). The document further insists on the importance of rural women being able to access productive assets to ensure their development and autonomy, as well as a means to end "*all forms of gender-based violence and discrimination (social, economic, political) against women and girls*" and ensure they "*fully enjoy all their human rights*" (African Union, 2015).

Interestingly, in paragraph 51, the African Union states that all harmful social practices towards women, particularly female genital mutilation (FGM) and child marriages, will not exist anymore (African Union, 2015). Having considered all the harmful practices that women and girls have to face related to MHM, improving MHM could be a way to increase body literacy to put an end to both FGM and child marriages.

Furthermore, in paragraph 52, the African Union states that, by 2063, the continent will enjoy "*full gender parity, with women occupying at least 50% of elected public offices at all levels and half of managerial positions in the public and the private sectors*" (African Union, 2015). Although no explicit mention is made towards MHM, it would be hard to imagine full gender parity without making sure that every girl and every woman has adequate and safe access to manage her menstrual health with dignity and in the way she

chooses to do. Paragraph 52 can be understood as a call to end every barrier that girls and women have to face to shatter the glass ceiling, and MHM challengers are surely an obstacle to that.

In paragraph 56, the African Union explains that, by 2063, "*all forms of systemic inequalities, exploitation, marginalisation and discrimination of young people will be eliminated and youth issues mainstreamed in all development agendas*" (African Union, 2015). This commitment can also be understood as a call to end all related MHM issues and challenges faced by girls ("youth"). It could further be interpreted as a call to provide sexual and reproductive health education to young people, particularly to end inequalities, marginalisation and discrimination.

Lastly, it is important and interesting to mention that these commitments were part of the Agenda 2063 Call to Action to speed up specific actions in order to achieve gender parity and equality in the continent.

6.3.UN Agencies

Until recent years, issues surrounding MHM and its impacts on the dignity and wellbeing of girls and women have been largely overlooked all over the world. Today, international interest and action are rapidly growing, in global fora, human rights conferences and society. International and national actors and NGOs work together to break down taboos and strengthen the response to MHM issues.

International actors first started to pay attention to MHM from both the education and the water, sanitation and hygiene (WASH) sectors (Sommer, Hirsch, Nathanson, & Parker, 2015). In 2012, the UN Special Rapporteur on the right to safe water and sanitation presented MHM as a human rights issue (De Alburquerque, 12 September 2012).

6.3.1. UNICEF

UNICEF fights for a world in which every girl is able to learn, play, and take care of her health without having to deal with stress, shame, barriers to information and lack of

sanitation facilities and menstrual products while menstruating. In this sense, UNICEF believes that education, health and gender equality will be benefitted as a by-product of improving MHM. Therefore, UNICEF works to develop positive policies and programmes, pushes for social change, builds self-efficacy and increases access to menstrual products and sanitation facilities (UNICEF, 2019).

To do so, UNICEF has developed toolkits and programmes to support MHM in order to ameliorate girls' and women's education, health, and gender equality. These programmes address factors UNICEF considers crucial for girls and women to "*have the knowledge and skills to manage their menstruation safely, using appropriate materials and facilities, at home and away from the household*" (UNICEF, 2019).

In UNICEF's Gender Action Plan 2018-21, MHM is one of the five interlinked priorities to empower adolescent girls and ensure their wellbeing: A "*dignified menstrual health and hygiene*" is UNICEF's fourth priority and it is built on the organisation's broader Strategic Plan for 2018-21, under the fourth goal "*Every child lives in a safe and clean environment*" (UNICEF, 2017).

UNICEF's framework for menstrual health and hygiene programmes is designed for governments to implement at a subnational scale. Programmes address four pillars: social support, knowledge and skills, facilities and services, and materials. UNICEF recommends implementing these programmes through an existing sector programme as the most efficient way of reaching scale, sustainability, and equality (UNICEF, 2019). Within WASH programmes in schools, UNICEF argues that a well-designed menstrual health and hygiene intervention would target the issue through sexual and reproductive health and rights and adolescent nutrition and participation.

Before the end of 2020, UNICEF will publish a framework for practitioners to measure MHM interventions' outcomes, as well as an operational guide with curated indicators and recommendations for data collection (Amaya, Marcatili, & Bhavaraju, 2020).

6.3.2. Water, sanitation and hygiene (WASH)

Water, Sanitation and Hygiene (WASH) are three interdependent core issues that represent a growing sector. Although they can be studied separately, the presence of one

depends on that of the other (UNICEF, 2016). In other words, "*without toilets, water sources become contaminated; without clean water, basic hygiene practices are not possible*" (UNICEF, 2016).

In 2016, UNICEF's Joint Monitoring Programme estimated that over 335 million girls globally in primary and secondary schools did not have access to a basic hygiene service in their schools and had either little or no handwashing facilities at their schools to clean their hands and wash or change their menstrual materials (UNICEF; WHO, 2018). Moreover, this study also shows the significance WASH services have for girls in schools, as the lack thereof disproportionately impact menstruating girls, as it limits their capacity to manage their menstrual health. As a result, access the three elements of WASH (water, sanitation and hygiene) is crucial to improve MHM and allow girls to ensure their education and the development of their capabilities with confidence and dignity (UNICEF; WHO, 2018). In other words, WASH-appropriate sanitation facilities in schools are crucial to provide a safe and healthy learning environment (UNESCO, 2000).

In the past few years, Menstrual Health Management has been gradually introduced in WASH programmes in many countries, among which can be found Ethiopia, Uganda, South Sudan, Kenya, Tanzania, Malawi, Zambia, Zimbabwe, and Madagascar (Chatterley & Thomas, 2013). Most of these programmes are aimed at improving WASH in schools, but they also offer MHM training and education and the possibility to improve the schools' sanitation facilities (UNFPA, 2018). In fact, since 2002, the not-for-profit company Water and Sanitation for the Urban Poor (WSUP) and the British Department for International Development (DFID) partnered to ameliorate sanitation and hygiene in 1,800 Madagascan primary schools, with a specific focus on MHM (Adams, Franceys, & Luff, 2016).

From 2014 to 2017, the project WASH in Schools for Girls (WinS4Girls): Advocacy and Capacity Building for MHM through WASH in Schools was implemented in fourteen countries around the world, one of which was Zambia. The goal of this project was to reinforce MHM action and advocacy in LMIC, which would result in a more MHM-supportive school environment for adolescent girls. In doing so, social and physical barriers to an adequate MHM would decrease schoolgirls' absenteeism at both the

primary and the secondary levels (WinS4Girls, 2018). The study in Zambia found that schoolgirls in rural Zambia have to face important challenges to manage their menstrual health. As a result, there is a very urgent need to create MHM-appropriate environments for schoolgirls at the community, school, and regional levels (UNICEF Zambia, 2017).

However, WASH programmes outside the school settings are still quite limited. A specific example of such WASH programmes would a pilot project in informal settlements in Kampala (Uganda), focused on the amelioration of menstrual products disposal and waste management systems, in a sustainable way (Sommer, Cherenack, Blake, Sahin, & Buergers, 2015). Outside of the school setting, UNICEF's Gender Action Plan further explains that the lack of sanitation and hygiene facilities both at home and in public spaces disproportionately harms women and girls. However, they are rarely taken into account when designing and managing WASH facilities (UNICEF, 2017). This pressing issue needs to be addressed urgently to achieve both the Sustainable Development Goals and the African Union's 2063 Agenda's commitments.

6.3.3. Other UN agencies

Further UN agencies and UN-associated international organisations have come together to elaborate toolkits and guidelines for researchers and practitioners. In 2014, UNESCO published sexuality education booklet, which included a large part dedicated to MHM (UNESCO, 2014), which was later updated, adding much more attention to MHM (UNESCO, 2016). Moreover, in 2019, the World Health Organisation, for instance, made a detailed reference to MHM in its WASH guidelines for schools (WHO, 2019).

Furthermore, the Water Supply and Sanitation Collaborative Council (WSSCC) created Africa country-specific case studies in collaboration with UN Women (WSSCC; UN Women, 2014).

In a humanitarian emergency, managing menstruation becomes even more complicated, as women and girls completely lose their privacy and safety typically associated with life in an emergency context, as well as displacement (Sommer, Schmitt, & Clatworthy, 2017). Unfortunately, in the East and Southern Africa region, several countries have major issues in terms of forced displacement: Tanzania hosts over 250,000 refugees and

Uganda around a million. Women and girls living in these conditions are put at risk of lack of menstrual products and access to them, as well as little or no access to clean and wash themselves and their menstrual materials in safety and with privacy (Sommer, 2012; Sommer, et al., 2016b; Obrecht, 2016; Atuyambe, Ediau, Orach, Musenero, & Bazeyo, 2011). Moreover, in a humanitarian situation, health problems mentioned in section 4 above can easily increase, such as irregularity due to stress, anxiety and loss (Samari, 2017; Li, et al., 2010).

In humanitarian emergencies in the East and Southern Africa region, several organisations have provided MHM products through hygiene or dignity kits (Tellier & Hyttel, 2017). In Angola, the UNFPA distributed dignity kits, which comprised sanitary pads, soap and several other vital hygiene supplies to refugees (UNFPA ESARO, 2018). In South Sudan, Oxfam provided feminine hygiene kits in the refugee camps of Jamam and Gendrassa, and in the transit camp of Jamam, which contained new clothes so that the women's older ones could be used to make menstrual products (Featherstone, 2012). UNICEF Burundi pre-positioned reusable menstrual hygiene kits for 10,000 women and girls (UNICEF, 2015), which turned out to be a critical aspect of effective relief work (Sommer, Cherenack, Blake, Sahin, & Burgers, 2015). In the Democratic Republic of Congo (DRC), WASH facilities were constructed and "intimate hygiene kits" were distributed to displaced women (WASH Cluster, 2014).

In the Bwagiriza refugee camp (Burundi), the International Federation of Red Cross and Red Crescent Societies (IFRC) distributed hygiene kits with both disposable and reusable pads. Refugee women were more satisfied with the reusable pads, as they were economical, and younger girls reported less discomfort while menstruating, which allowed them to do their normal activities, such as keep attending their classes (IFRC, 2013). Indeed, distributing menstrual kits proved to be successful in the amelioration of women's hygiene, health, knowledge and dignity in Uganda, Burundi and Madagascar, where the women reported they were less worried about leaking. In Uganda and Burundi, adequate MHM sanitation infrastructures proved to be successful, too (IFRC, 2016). In these three countries, however, barriers to the implementation of MHM programmes were encountered, mainly cultural beliefs and religious views of MHM, sanitation and access to water (UNICEF, 2015; IFRC, 2016; Obrecht, 2016), suggesting that dignity kits should

be “culturally appropriate”, although this could significantly lower the response time (Abbott, et al., 2011).

Overall, in humanitarian contexts, there is an evident lack of consensus on how MHM is best included in MHM responses across WASH, health, education and so forth. Therefore, improved technical guidance and documentation are vital to be able to effectively implement and evaluate different responses (Sommer M., et al., 2016b). In this sense, a quite pervasive problem in humanitarian assistance is how complicated it is to pair humanitarian assistance with longer-term sustainable develop approaches (Raudel & Morrinson-Métois, 2017).

7. Menstrual health management and the COVID-19 pandemic

As was stated previously in this study’s Introduction, strong health systems are vital to respond to health crises, particularly for women and other marginalised and vulnerable groups (Kikbusch & Gitahi, 2020). For menstruating women and girls, this translates into being capable of managing menstruation safely, hygienically and with dignity is vital for women and girls around the world, as it directly impacts their human rights, health, education, and economic development – in other words, gender equality (WASH United; Menstrual Hygiene Day, 2020).

7.1. Exacerbation of MHM-related issues and challenges

Before the COVID-19 pandemic even started, already half a billion women and girls around the world lack what they required to deal with their menstruation (Geertz, Iyer, Kasen, Mazzola, & Peterson, 2016a). The pandemic now underlines and further exacerbates the MHM issues and challenges that many women and girls have to face once a month around the world, but particularly in low- and middle-income countries. To avoid spreading the virus, most economic and social activities have been either cancelled or put on hold all around the world. This has affected vulnerable populations in every country, particularly in low- and middle-income countries, whose MHM-related services have been discontinued, leaving thousands of people uncovered and at risk.

The current pandemic has forced the closing of schools, community centres and other safe spaces in which girls and women usually have access to information about sexual and reproductive health, as well as menstruation. Although digital information could be an option, men obstruct women's "*ability to seek information on menstruation through digital channels during lockdown*" (WASH United; Menstrual Hygiene Day, 2020) The disruption of access to information is further aggravated by the discontinuation of routine health services (WASH United; Menstrual Hygiene Day, 2020). Moreover, the lack of information together with lockdowns intensify household levels of taboos and stigmas around menstruation, hindering MHM and increasing shame, discomfort, and the probability of women being confined in separate spaces (WASH United; Menstrual Hygiene Day, 2020).

The pandemic has further disrupted access to products, as a large number of subsidised supply programmes of menstrual materials in schools and health services have been suspended. In this situation, the dire economic situation in which the current pandemic has left many households, makes many women and girls prioritise other basic needs over adequate menstrual products. The disruption of menstrual products sharply increases prices of menstrual products, making them even more attainable than before (WASH United; Menstrual Hygiene Day, 2020).

7.2. Response needed

Menstruation does not stop for pandemics – or for anything at all. MHM needs to be included in COVID-19 emergency response interventions and stay at the forefront of policies related to gender, WASH, health education, and sexual and reproductive health and rights.

During the pandemic, as well as in other emergencies, it is vital for women and girls to have access to safe water, menstrual products, and adequate sanitation facilities to manage their menstruation with dignity. Moreover, levels of investment in MHM during the pandemic need to be preserved to ensure women and girls' human rights are respected (WASH United; Menstrual Hygiene Day, 2020). This is particularly important when considering that over 70% of the world's health workforce are women, thus more likely to find themselves at the front-line of emergencies. An inadequate MHM not only impacts

their health and dignity in a very negative way, but it also compromises health systems' capacity to deliver (UNICEF, 2020).

As explained in the previous section, the current pandemic has exacerbated the limits imposed on menstruating women and girls to participate in society fully, which further undermines their status and self-esteem – two crucial components of one's identity that deeply suffer in emergencies (Colliard, Bizouerne, Corna, ACF Mental Health, & Care Practices, 2014).

8. Conclusion and further areas of research

8.1. General conclusion

As menstrual hygiene management (or the lack thereof) is not perceived a life-threatening issue, MHM has been largely overlooked by nearly everyone in the development sector, from politicians and institutions to researchers, practitioners and implementers. The topic has been somewhat addressed in sexual and reproductive health education, though here the focus is placed on girls above 15 years old, who are more at risk of STDs and unwanted pregnancy than of school dropout – most have dropped out by then anyway. The topic of menstrual hygiene management has been all the more taboo and uninteresting to the development field because it is characterised by both taboos and sexism (Sommer, Hirsch, Nathanson, & Parker, 2015), as MHM mostly involves girls and women and their own bodies, not bringing another being into the world, which is perceived as the main function of the female body by our patriarchal societies.

Although in 2014 the UN Office of the High Commissioner for Human Rights underlined the significance of MHM to reach a large variety of economic, social, and cultural rights (Sanghera, J., 2014), women and girls' human rights and needs in the East and Southern Africa region are continuously undermined during menstruation. The right to human dignity is hampered when women and girls cannot access safe sanitation facilities adapted to meet their needs and, therefore, cannot manage their menstrual health in a dignified way. Women and girls' human right to dignity is also damaged when they are teased and bullied for their menstruation (UNFPA, 2019). Moreover, their human right to an adequate standard of health and wellbeing is harmed when they experience negative

health consequences from the lack of menstrual supplies and facilities to manage their menstruation. As has been previously argued, women and girls' health and wellbeing is further damaged by stigma, since it keeps women "*from seeking treatment for menstruation-related disorders or pain, adversely affecting their health and wellbeing*" (UNFPA, 2019), which further exacerbates school and work low performance and high absenteeism.

In this context, women and girls' basic human rights to education and work are undermined by the lack of a safe space to manage their menstruation and menstrual products reliable enough to actually be able to leave their homes. This results in higher rates of school absenteeism, very low education and work performance and outcomes, and barriers to job opportunities. Finally, all these challenges amount to hamper the basic human right to non-discrimination and gender equality (UNFPA, 2019). Overall, in the East and Southern Africa region, menstruation is a gigantic obstacle for the achievement of capabilities for women and girls.

In the past few years, attention to MHM has grown in different fora, but there is still a strong need for consolidation at the policy level, as well as an overall coordination strategy among the various clusters that impact the field of MHM (UNFPA, 2018). As has been shown in this thesis, there is a growing number of small-scale projects that are being undertaken in different parts of the East and Southern Africa region. Together with scaling the issue at the policy level, the translation of these projects into sustainable and scalable solutions remains a challenge, particularly when combining "hardware" solutions (menstrual products, adequate sanitation facilities, clean and safe water…) with "software" ones (knowledge, education…) (UNFPA, 2018).

In terms of means to manage menstruation, some experts have highlighted the need for informed choices based on accessibility (availability + affordability) to the widest possible range of safe, effective and acceptable facilities and products. Thus, access to true, valuable and fact-based information is instrumental in making an adequate choice of menstrual product and means of managing menstrual health: "*Choice is not choice unless it is informed*" (Siri Tellier in *First East and Southern Africa Regional Symposium on Improving Menstrual Health Management for Adolescent Girls and Women*). Informed choices help remove the obstacles to the achievement of women and girls'

capabilities. Informed choices, increased body literacy and adequate means to manage menstrual health empower women and make room for gender equality to flourish, from the community level to the international normative framework.

8.2. Lack of unified data to track MHM

Menstruation is a vital physiological process that strongly shapes women's daily experiences at different phases of their lives. However, a large number of relations between menstruation and other traits of women's lives remain fundamentally uncharted. The field of menstrual health management still lacks unified metrics to allow for data comparison on menstruation and the experience of it. To plan for measures and monitor progress, the challenge of MHM needs to be fully understood and tracked, which is why a global, cohesive dataset is crucial (Amaya, Marcatili, & Bhavaraju, 2020). In fact, there is no universal agreement on what an "adequate" level of MHM is, although the PMA 2020 reports used for this thesis give adequacy estimates at the country level.

The past few years have seen large-scale surveys take off, such as the [Performance Monitoring and Accountability 2020 (PMA2020)](), [UNICEF's Multiple Indicator Cluster Surveys (MICS)]() o the [Demographic and Health Survey (DHS)](). Moreover, guidelines and recommendations were suggested in 2019 by the Water Supply and Sanitation Collaborative Council (WSSCC) and Columbia University to validate, integrate, and share MHM metrics (UNICEF/WASH, 2018). The emerging metrics for MHM are:

- *Main location used for MHM*: home, school, work…
- *Safety, cleanliness, and privacy of MHM location*: availability of soap and/or water, general cleanliness, private, gender-segregated location, locks on toilet compartments, reliable water source in or near the toilet…
- *Menstrual hygiene materials used*: cloths/reusable sanitary pads, disposable sanitary pads, tampons, menstrual cup, toilet paper, underwear alone…
- *Disposal location or reuse of said products*: disposal mechanisms for menstrual hygiene waste at home/school/work, a place to wash/throw away rags or napkins…
- *Lack of engagement in social activities, school or work (due to menstruation)*: attending school, paid work, cooking food, eating with others, bathing in regular place, participating in social activities…
- *Awareness about menstruation prior to menarche*:

- *Knowledge about particulars of menstruation*
- *Feelings regarding menstruation*
- *Self-efficacy of confidence* (UNICEF/WASH, 2018; Amaya, Marcatili, & Bhavaraju, 2020).

In 2016, MHM evidence-based research started growing. For education, researchers now aim to investigate inadequate MHM effects beyond school absenteeism, focusing in the creation of a scale to quantify engagement, self-efficacy and stress in school. Comprehensive sexual education (CSE) programmes' links to reproductive health outcomes are being researched to measure the impact of improved knowledge and awareness in SRHR (including menstruation). Moreover, digital tools are increasingly used to obtain cohesive evidence on MHM, such as period tracking apps, which collect information from millions of users. Grassroots coalitions have taken advantage of this momentum to aggregate existing evidence. Initiatives such as the Global Menstrual Health and Hygiene Collective or the Menstrual Health Hub work to consolidate and synthesise information to share with researchers, academics, and global funders. With the emergence of these efforts, researchers and practitioners have called for a cohesive and unified guide that implementers can work with to successfully incorporate different facets of MHM in their programmes (Amaya, Marcatili, & Bhavaraju, 2020).

However, significant struggles remain. When elaborating MHM metrics, women and girls have been chosen as the unit of change, leaving behind data on their environment, including their community's behaviour, which profoundly shape their experience of menstruation. This has been highly criticised by some researches, as the data available fails to capture the evolution of MHM at the family, the community, and the broader system levels. The main discussion currently is focused on the short-term impacts of improving MHM. Therefore, long-term studies are needed to assess this impact (Amaya, Marcatili, & Bhavaraju, 2020).

8.3. Further areas of research

Further areas of research are those involving women and girls with disabilities, homeless, imprisoned or out of school/employment, as well as transgender men (Tellier & Hyttel, 2017).

In the field of WASH, further research is required to understand better how inadequate sanitation impacts MHM and girls and women's safety and empowerment, as the absence of attention to menstruation in present sanitation solutions perpetuate critical gaps in how the field addresses this issue (Amaya, Marcatili, & Bhavaraju, 2020). In the East and Southern Africa region, WASH programming does not include MHM, and when it is, the scale is too limited (Tellier & Hyttel, 2017). For instance, in Ethiopia, MHM is included in very few WASH programmes (Geertz, Iyer, Kasen, Mazzola, & Peterson, 2016b), which can be assumed is the case for many other countries in the region (Tellier & Hyttel, 2017). Kenya's MHM focus of WASH programmes in schools is quite strong, and government policies provide schools with disposal bins for menstrual products, but the country's waste management systems, particularly in terms of menstrual waste, is an ignored and neglected challenge in most schools (Sommer, et al., 2016a). Integrating MHM into WASH programmes is quite likely to remain a challenge in the upcoming years, despite the significance the WASH sector has for MHM (Tellier & Hyttel, 2017).

As has been stated in section 8.2, MHM concepts need to be harmonised, particularly in terms of WASH indicators to monitor WASH in schools and public spaces. This harmonisation will be extremely useful when comparing countries and assessing cultural specificities (UNICEF, 2016).

The time availability for this thesis did not allow for an in-depth analysis of the situation of other groups of interest and the significance of harmonised data and indicators in the MHM field. However, it seems clear that more context-specific research is crucial to adequate provision, distribution, implementation and monitoring of the projects implemented.

8.4.Last words

Regular menstruation is a key sign of overall health and is vital to the survival of the human species. As a natural human body trait, menstruation should not be considered immoral or sinful. Shame is extremely harmful to self-esteem, mental and physical health and overall wellbeing (Menstrual Matters, 2018). Therefore, shaming an entire gender is extremely harmful to society, as it can generate inequality, violence, lower living

standards and difficult interpersonal relationships. Menstruation is only a hygiene issue if there are no sanitation facilities to wash period products or the body. However, the issue here lies in poverty, not menstruation.

In the long-term, the improvement of MHM for menstruators will have very positive effects on their health and wellbeing and, therefore, on their achieved capabilities as well as on their role in their communities and societies. This increased freedom and development has a clear, positive impact on attitudes towards menstruation, which in turn influences gender roles, transforms deeper societal structures and pushes for gender equality and human development.

BIBLIOGRAPHY

Abbott, L., Bailey, B., Karasawa, Y., Louis, D., McNab, S., Patel, D., . . . Vaval, L. (2011). *Evaluation of UNFPA's Provision of Dignity Kits in Humanitarian and PostCrisis Settings.* New York: School of International and Public Affairs Columbia University. Retrieved from https://reliefweb.int/sites/reliefweb.int/files/resources/dignity_kit_report_9may11.pdf

Action Aid UK. (2020). *Period Poverty.* Retrieved from Action Aid UK: https://www.actionaid.org.uk/about-us/what-we-do/womens-economic-empowerment/period-poverty

Adams, J., Franceys, R., & Luff, R. (2016). *FINAL REPORT for Evaluation of Water & Sanitation for the Urban Poor's DFID-Funded Programme 2012-2015.* Oxford. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/546087/Water-Sanitation-Urban-Poor.pdf

African Union. (2015). *Agenda 2063. Popular version.* Addis Ababa: African Union Commission. Retrieved from https://au.int/sites/default/files/documents/36204-doc-agenda2063_popular_version_en.pdf

Amaya, L., Marcatili, J., & Bhavaraju, N. (2020). *Advancing Gender Equity by Improving Menstrual Health. Opportunities in Menstrual Health and Hygiene.* FSG. Retrieved from https://www.fsg.org/publications/advancing-gender-equity-improving-menstrual-health

Ambani, S. (2020, January 17). *Crooks caught repackaging 300,000 expired GoK sanitary towels for sale – VIDEO*. Retrieved from Nairobi News: https://nairobinews.nation.co.ke/editors-picks/police-seize-300000-expired-sanitary-towels

Atuyambe, L. M., Ediau, M., Orach, C. G., Musenero, M., & Bazeyo, W. (2011, May 14). Land slide disaster in eastern Uganda: rapid assessment of water, sanitation and hygiene situation in Bulucheke camp, Bududa district. *Environmental Health, 10*(38). Retrieved from https://doi.org/10.1186/1476-069X-10-38

BBC News. (2019, February 25). *OSCARS 2019 | Period. End of Sentence: "No puedo creer que un documental sobre la menstruación acaba de ganar un Oscar*.

Retrieved from BBC News Mundo : https://www.bbc.com/mundo/noticias-47363013

Bezruki, A., von Euler Cheplin, M. C., & Tellier, S. (2016). *Does Menstruation Keep Girls out of School?* Retrieved from WoMena: http://womena.dk/wp-content/uploads/2019/07/Does-Menstruation-Keep-Girls-out-of-School-1.pdf

Bill & Melinda Gates Foundation. (2018). *CASE STUDIES IN GENDER INTEGRATION: Sanitation Product and Service Delivery in Kenya.* Case Study, Bill & Melinda Gates Foundation, Water, Sanitation & Hygiene. Retrieved from https://www.gatesgenderequalitytoolbox.org/wp-content/uploads/Gender-Case-Study-Sanitation-Product-Service-Delivery-May-2018.pdf

Bill & Melinda Gates Foundation. (2019a). *Water, Sanitation & Hygiene - Strategy Overview*. Retrieved from Bill & Melinda Gates Foundation: https://www.gatesfoundation.org/What-We-Do/Global-Growth-and-Opportunity/Water-Sanitation-and-Hygiene#AreasofFocus

Bill & Melinda Gates Foundation. (2019b). *Family Planning - Strategy Overview*. Retrieved from Bill & Melinda Gates Foundation: https://www.gatesfoundation.org/What-We-Do/Global-Development/Family-Planning

Bill & Melinda Gates Foundation. (2020). *Innovations in Materials Science for a Transformative Menstrual Health and Hygiene Product (Round 25)*. Retrieved from Global Grand Challenges: https://gcgh.grandchallenges.org/challenge/innovations-materials-science-transformative-menstrual-health-and-hygiene-product-round-25

Castensson, A. (2018). *The Capability of Cups. A comparative field study in Uganda investigating the impact of menstrual cups on women and girls' achieved capabilities.* Uppsala, Sweden. Retrieved from https://www.diva-portal.org/smash/get/diva2:1214444/FULLTEXT01.pdf

Chandra-Mouli, V., & Patel, S. V. (2017). Mapping the knowledge and understanding of menarche, menstrual hygiene and menstrual health among adolescent girls in low- and middle-income countries. *Reproductive Health, 14*(30). Retrieved from https://doi.org/10.1186/s12978-017-0293-6

Chatham House. (2011). Meeting Summary: Centre on Global Health Security. *Global Health Diplomacy: A Way Forward in International Affairs Inaugural conference of the Global Health Diplomacy Network.* London: Chatham House. Retrieved

from https://www.chathamhouse.org/sites/default/files/public/Research/Global%20Health/280611summary.pdf

Chatham House. (2012). *Health: an issue in global politics and international affairs.* The Chatham House, Centre on Global Health Security. London: The Royal Institute of International Affairs Chatham House. Retrieved from https://www.chathamhouse.org/sites/default/files/media_wysiwyg/Centre%20for%20Global%20Health%20Security%20Prospectus.pdf

Chatterley, C., & Thomas, A. (2013). *Snapshot of WASH in Schools in Eastern & Southern Africa: A review of data, evidence and inequities in the region.* UNICEF. Nairobi: UNICEF Eastern and Southern Africa Regional Officce. Retrieved from https://www.unicef.org/wash/schools/files/Snapshot_of_WASH_in_Schools_in_Eastern_and_Southern_Africa(1).pdf

Chikulo, B. C. (2015). An Exploratory Study into Menstrual Hygiene Management amongst Rural High School for Girls in the North West Province, South Africa. *African Population Studies, 29*(2), pp. 1971-1987.

Colliard, C., Bizouerne, C., Corna, F., ACF Mental Health, & Care Practices. (2014). *The Psychosocial Impact of Humanitarian Crises* . Action Against Hunger, Paris. Retrieved from https://www.actionagainsthunger.org/sites/default/files/publications/ACF_Psychosocial_Impact.pdf

Czura, K., Menzel, A., & Miotto, M. (2019). *Menstrual Health, Worker Productivity and Wellbeing among Female Bangladeshi Garment Workers.* Discussion Paper, Rationality and Competition, Collaborative Research Center Transregio 190. Retrieved from https://rationality-and-competition.de/wp-content/uploads/2019/11/203.pdf

Dars, S., Sayed, K., & Yousufzai, Z. (2014). Relationship of menstrual irregularities to BMI and nutritional status in adolescent girls. *Pakistan Journal of Medical Sciences, 30*(1), pp. 140-144. Retrieved from http://pjms.com.pk/index.php/pjms/article/view/3949/2142

Das, P., Kelly K., B., Dutta, A., Swain, T., Sahoo, S., Panda, B., . . . Torondel, B. (2015). *Menstrual Hygiene Practices, WASH Access and the Risk of Urogenital Infection in Women from Odisha, India.* Retrieved from PLOS ONE: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0130777

Dasgupta, A., & Sarkar, M. (2008). Menstrual Hygiene: How hygienic is the adolescent girl? *Indian Journal of community medicine: official publicatio of Indian Association of Preventive & Social Medicine, 2*(33), 77.

De Alburquerque, C. (12 September 2012). Special Rapporteur on the human right to safe drinking water and sanitation, Responses to questions from Interactive Dialogue. *Human Rights Council, 21st session.* Geneva.

De Sanctis, V., Soliman, A. T., Elsedfy, H., Soliman, N. A., Soliman, R., & El Kholy, M. (2016, January 16). Dysmenorrhea in adolescents and young adults: a review in different country. *Acta Bio Medica Atenei Parmensis, 3*(87), pp. 223-246.

Dolan, C., & Tofaris, E. (2018). *Keeping African girls in school with better sanitary care, ESRC-DFID Research Impac.* SOAS University of London. Cambridge: REAL Centre at the University of Cambridge and The Impact Initiative. Retrieved from https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/13575

Downing, J., & Bellis, M. (2009, December 3). Early pubertal onset and its relationship with sexual risk taking, substance use and anti-social behaviour: a preliminary corss-sectional study. *BMC Public Health, 9*(446). Retrieved from https://doi.org/10.1186/1471-2458-9-446

Elledge, M. F., Muralidharan, A., Parker, A., Ravndal, K. T., Siddiqui, M., Toolaram, A. P., & Woodward, K. P. (2018, November 15). Menstrual Hygiene Management and Waste Disposal in Low and Middle Income Countries—A Review of the Literature. *International Journal of Environmental Research and Public Health, 15*(11), p. 2562. Retrieved from https://doi.org/10.3390/ijerph15112562

FAO; UN-OHRLLS; UNDESA. (2017). *Global Action Programme on Food Security and Nutrition in Small Island Developing States.* FAO. Obtenido de http://www.fao.org/3/a-i7297e.pdf

Featherstone, A. (2012). *Evaluation of Oxfam's South Sudan Humanitarian Response. Using Oxfam's Global Humanitarian Indicator Tool.* Retrieved from https://oxfamilibrary.openrepository.com/bitstream/handle/10546/312691/er-conflict-response-south-sudan-effectiveness-review-260214-en.pdf?sequence=4&isAllowed=y

Fukuda-Parr, S. (2003, February). The Human Development Paradigm: Operationalizing Sen's Ideas on Capabilities. *Feminist Economics, 9*(2.3), pp. 301-317. Retrieved from https://doi.org/10.1080/1354570022000077980

Gade, A., & Hytti, L. (2017). *Menstrual health in Rhino Camp refugee settlement, West Nile, Uganda. Pilot project intervention report.* Retrieved from WoMena Uganda and ZOA: https://www.susana.org/en/knowledge-hub/resources-and-publications/library/details/3506

Geertz, A., Iyer, L., Kasen, P., Mazzola, F., & Peterson, K. (2016a). *An Opportunity to Address Menstrual Health and Gender Equity.* FSG. FSG. Retrieved from https://www.fsg.org/publications/opportunity-address-menstrual-health-and-gender-equity

Geertz, A., Iyer, L., Kasen, P., Mazzola, F., & Peterson, K. (2016b). *Menstrual Health in Ethiopia. Country Landscape Analysis.* FSG. Retrieved from https://menstrualhygieneday.org/wp-content/uploads/2016/04/FSG-Menstrual-Health-Landscape_Ethiopia.pdf

Global Health 50/50. (2018). *The Global Health 50/50 Report 2020: Power, Privilege and Priorities.* London, UK. Retrieved from https://globalhealth5050.org/wp-content/uploads/2020/03/Power-Privilege-and-Priorities-2020-Global-Health-5050-Report.pdf

Global Health 50/50. (2020). *The Global Health 50/50 Report 2020: Power, Privilege and Priorities.* London, UK. Retrieved from https://globalhealth5050.org/wp-content/uploads/2020/03/Power-Privilege-and-Priorities-2020-Global-Health-5050-Report.pdf

Global Health Diplomacy Network. (2019). *Who are we?* Retrieved from Global Health Diplomacy Network: http://www.ghd-net.org/who-are-we

Grant, M. J., Lloyd, C. B., & Mensch, B. S. (2013, May). Menstruation and School Absenteeism: Evidence from Rural Malawi. *Comparative Education Review, 57*(2), pp. 260-284. Retrieved from https://doi.org/10.1086/669121

Haq, M. u. (1995). *Reflections on Human Development.* New York: Oxford University Press.

Hargreaves, J. R., Bonell, C. P., Boler, T., Boccia, D., Birdthistle, I., Fletcher, A., . . . Glynn, J. R. (2008a). Systematic review exploring time trends in the association between educational attainment and risk of HIV infection in sub-Saharan Africa. *AIDS, 22*(3), pp. 403-414. Retrieved from https://doi.org/10.1097/QAD.0b013e3282f2aac3

Hargreaves, J. R., Morison, L. A., Kim, J. C., Bonell, C. P., Porter, J. D., Watts, C., . . . Pronyk, P. M. (2008b). The association between school attendance, HIV infection

and sexual behaviour among young people in rural South Africa. *Journal of Epidemiology & Community Health, 63*, pp. 113-119. Retrieved from https://jech.bmj.com/content/62/2/113

Hennegan, J., & Montgomery, P. (2016, February 10). Do Menstrual Hygiene Management Interventions Improve Education and Psychosocial Outcomes for Women and Girls in Low and Middle Income Countries? A Systematic Review. *PLoS ONE, 11*(2), pp. 1-21. Retrieved from https://doi.org/10.1371/journal.pone.0146985

Hennegan, J., Dolan, C., Wu, M., Scott, L., & Montgomery, P. (2016). Measuring the prevalence and impact of poor menstrual hygiene management: a quantitative survey of schoolgirls in rural Uganda. *BMJ Open, 12*(6), p. e012596. Retrieved from https://bmjopen.bmj.com/content/bmjopen/6/12/e012596.full.pdf

House, S., Mahon, T., & Cavill, S. (2012). *Menstrual hygiene matters: A resource for improving menstrual hygiene around the world.* Retrieved from WaterAid: https://menstrualhygieneday.org/wp-content/uploads/2016/12/Menstrual-hygiene-matters-low-resolution.pdf

HRW. (2017). *Menstrual Hygiene a Human Rights Issue: A Simple Guide to Ending Discrimination, Abuse.* Retrieved from Human Rights Watch: https://www.hrw.org/news/2017/08/27/menstrual-hygiene-human-rights-issue

Hyttel, M., Rasanthan, J. J., Tellier, M., & Taremwa, W. (2012). Use of injectable hormonal contraceptives: diverging perspectives of women and men, service providers and policymakers in Uganda. *Reproductive Health Matters, 20*(40), pp. 148-157. Retrieved from https://doi.org/10.1016/S0968-8080(12)40654-1

Ibitoye, M., Choi, C., Tai, H., Lee, G., & Sommer, M. (2017, June 7). Early menarche: A systematic review of its effect on sexual and reproductive health in low- and middle-income countries. *PloS one*. Retrieved from https://doi.org/10.1371/journal.pone.0178884

IFRC. (2013). *Menstrual Hygiene: What's the fuss? Piloting menstrual hygiene management (MHM) kits for emergencies in Bwagiriza refugee camp, Burundi* . Burundi. Retrieved from https://ifrcwatsanmissionassistant.files.wordpress.com/2018/10/ifrc_mhm-kits-for-emergencies_case-study_final.pdf

IFRC. (2016). *Menstrual Hygiene Management (MHM) in Emergencies: Consolidated Report.* Retrieved from

https://ifrcwatsanmissionassistant.files.wordpress.com/2018/10/menstrual-hygiene-management-in-emergencies_-consolidated-report-2016.pdf

Jukes, M., Simmons, S., & Bundy, D. (2008, December 22). Education and vulnerability: the role of schools in protecting young women and girls from HIV in southern Africa. *AIDS, 22*(4), pp. S41-S56. Retrieved from https://journals.lww.com/aidsonline/Fulltext/2008/12004/Education_and_vulnerability__the_role_of_schools.5.aspx

Kasha Kenya. (n.d). *Menstrual Cups*. Retrieved from Kasha Kenya: https://kasha.co.ke/product-category/menstrual-care/menstrual-cups/

Kikbusch, I., & Gitahi, D. (2020, April 29). *COVID-19 (coronavirus): Universal health coverage in times of crisis*. Retrieved from World Bank Blogs: https://blogs.worldbank.org/health/covid-19-coronavirus-universal-health-coverage-times-crisis

Li, X.-H., Qin, L., Hu, H., Luo, S., Li, L., Fan, W., . . . Li, S.-W. (2010, November 02). Influence of the Wenchuan Earthquake on Self-Reported Irregular Menstrual Cycles in Surviving Women. *Gynecological Endocrinology, 27*(9), pp. 706-710. Retrieved from https://doi.org/10.3109/09513590.2010.526663

Mahon, T., & Cavill, S. (2012). *Menstrual Hygiene Matters - Training Guide for Practitioners.* Retrieved from https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/MHM%20training%20guide_0.pdf

Mason, L., Laserson, K. F., Orujo, K., Nyothach, E., Alexander, K. T., Odhiambo, F. O., . . . Phillips-Howard, P. A. (2015, January). Adolescent schoolgirls' experiences of menstrual cups and pads in rural western Kenya: a qualitative study. *Waterlines, 34*(1), pp. 15-30. Retrieved from https://doi.org/10.3362/1756-3488.2015.003

Mason, L., Nyothach, E., Alexander, K., Odhiambo, F. O., Eleveld, A., Vulule, J., . . . Philips-Howard, P. A. (2013, 2013). *'We Keep It Secret So No One Should Know' – A Qualitative Study to Explore Young Schoolgirls Attitudes and Experiences with Menstruation in Rural Western Kenya.* Retrieved from PLOS ONE: https://doi.org/10.1371/journal.pone.0079132

McMahon, S. A., Winch, P. J., Caruso, B. A., Obure, A. F., Ogutu, E. A., Ochari, I. A., & Rheingans, R. D. (2011, June 16). *'The girl with her period is the one to hang her head' Reflections on menstrual management among schoolgirls in rural*

Kenya. Retrieved from https://bmcinthealthhumrights.biomedcentral.com/articles/10.1186/1472-698X-11-7

Menstrual Hygiene Day. (2019). *African Coalition for MHM – MH Day 2019 Summary Report*. Retrieved from Menstrual Hygiene Day: https://menstrualhygieneday.org/african-coalition-for-mhm-mh-day-2019-summary-report/

Menstrual Matters. (2018). *TOP 10 MENSTRUATION MYTHS!* Retrieved from Menstrual Matters: https://www.menstrual-matters.com/blog/top-10-period-myths/

Miiro, G., Rutakumwa, R., Nakiyingi-Miiro, J., Nakuya, K., Musoke, S., Namakula, J., . . . Weiss, H. A. (2018, January 3). Menstrual health and school absenteeism among adolescent girls in Uganda (MENISCUS): a feasability study. *BMC Women's Health, 1*(18), p. 4. Retrieved from BMC WOmen's Health: https://doi.org/10.1186/s12905-017-0502-z

Ministers of Foreign Affairs of Brazil; France, Indonesia, Norway, Senegal, South Africa and Thailand. (2007, April 21). Oslo Ministerial Declaration—global health: a pressing foreign policy issue of our time. *The Lancet, 369*(9570), pp. 1373-1378. Retrieved from https://doi.org/10.1016/S0140-6736(07)60498-X

Mire, A. (2020, February 24). *'I wish I was a boy': The Kenyan girls fighting period poverty*. Retrieved from Al Jazeera: https://www.aljazeera.com/indepth/features/boy-kenyan-girls-fighting-period-poverty-200219081838036.html

Mohite, R., Mohite, V., Kumbhar, S., & Ganganahalli, P. (2013, January). Common Menstrual Problems among Slum Adolescent Girls of Western Maharashtra, India. *Journal of Krishna Institute of Medical Sciences University, 2*(1), pp. 89-97. Retrieved from https://www.researchgate.net/publication/283247399

Montgomery, P., Hennegan, J., Dolan, C., Wu, M., Steinfield, L., & Scott, L. (2016). Menstruation and the Cycle of Poverty: A Cluster Quasi-Randomised Control Trial of Sanitary Pad and Puberty Education Provision in Uganda. *PloS one, 11*(12), p. e0166122. Retrieved from https://doi.org/10.1371/journal.pone.0166122

Montgomery, P., Ryus, C. R., Dolan, C. S., Dopson, S., & Scott, L. M. (2012, October 31). Sanitary Pad Interventions for Girls' Education in Ghana: A Pilot Study. *PLoS*

ONE, 7(10), pp. 1-7. Retrieved from https://doi.org/10.1371/journal.pone.0048274

Morabia, A., Costanza, M., & Contraceptives", ". C. (1998, December 15). International variability in ages at menarche, first livebirth, and menopause. *American Journal of Epidemiology, 148*(12), pp. 1195-1205. Retrieved from https://doi.org/10.1093/oxfordjournals.aje.a009609

Mucherah, W., & Thomas, K. (2017). Reducing barriers to primary school education for girls in rural Kenya: reusable pads' intervention. *International Journal of Adolescent Medicine and Health, 31*(3). Retrieved from https://doi.org/10.1515/ijamh-2017-0005

National Geographic; Global Citizen. (2019, September 26). *KEEPING GIRLS IN SCHOOL.* Retrieved from National Geographic: https://www.nationalgeographic.com/activate/keeping-girls-in-school/

Ndlovu, E., & Bhala, E. (2016). Menstrual hygiene – A salient hazard in rural schools: A case of Masvingo district of Zimbabwe. *Jàmbá - Journal of disaster risks, 8*(2). Retrieved from https://doi.org/10.4102/jamba.v8i2.204

NICHD. (2017). *Amenorrhea.* Retrieved from Eunice Kennedy Shriver National Institue of Child Health and Human Development: https://www.nichd.nih.gov/health/topics/amenorrhea/conditioninfo

NICHD. (2017). *What are menstrual irregularities?* Retrieved 2020, from Eunice Kennedy Shriver National Institute of Child Health and Human Development: https://www.nichd.nih.gov/health/topics/menstruation/conditioninfo/irregularities

NICHD. (2017). *What are menstrual irregularities?* Retrieved from Eunice Kennedy Shriver National Institute of Child Health and Human Development: https://www.nichd.nih.gov/health/topics/menstruation/conditioninfo/irregularities#f8

NIH. (2020). *Premenstrual dysphoric disorder.* Retrieved from Medline Plus: https://medlineplus.gov/ency/article/007193.htm

Njue, E. K., & Muthaa, G. M. (2015). Influence of Availability of Sanitary Facilities on the Participation of the Girl-Child in Public Primary Schools in Garissa County, Kenya. *Open Journal of Social Sciences, 3*, pp. 162-169. Retrieved from http://dx.doi.org/10.4236/jss.2015.38018

Nussbaum, M. (2011). *Creating Capabilities: The Human Development Approach.* Cambridge, Massachussetts, and London, England: The Belknap Press of Harvard University Press. Retrieved from https://books.google.es/books?hl=es&lr=&id=Gg7Q2V8fi8gC&oi=fnd&pg=PR7&dq=Nussbaum,+M.+(2011).+Creating+Capabilities:+The+Human+Development+Approach,+Belknap+Press+of+Harvard+University+Press.&ots=l20wh7SUad&sig=gg6n_vmzrtNXcJ2TGTKHdRwR7M4#v=onepage&q&f=fa

Nyakanyanga, S. (2017). *Free Sanitary Pads to Fight School Dropout, Child Marriage in Zimbabwe.* Retrieved from Women and Girls: https://www.newsdeeply.com/womenandgirls/articles/2017/11/09/free-sanitary-pads-to-fight-school-dropout-child-marriage-in-zimbabwe

Obrecht, A. (2016). *Understanding the performance of emergency feeding programmes: Save the Children's CMAM Report.* London: ODI/ALNAP. Retrieved from https://www.alnap.org/system/files/content/resource/files/main/alnap-cmam-programming-case-study-2016.pdf

OECD. (2019). *Interactive summary charts for total DAC, DAC members* . Retrieved from OECD: https://public.tableau.com/views/AidAtAGlance/DACmembers?:embed=y&:display_count=no?&:showVizHome=no#1

OHCHR. (2008). *The Right to Health.* United Nations, Office of the United Nations High Commissioner for Human Rights. Geneva: United Nations. Retrieved from https://www.ohchr.org/Documents/Publications/Factsheet31.pdf

Ombuor, R. (2018, June 20). *Kenya Hands Out Free Sanitary Products to Help Keep Girls in School*. Retrieved from Global Citizen: https://www.globalcitizen.org/en/content/kenya-boost-girls-education-sanitary-products/

Pattani, A. (2017, July 24). In Some Countries, Women Get Days Off for Period Pain. *The New York Times*. Retrieved from https://www.nytimes.com/2017/07/24/health/period-pain-paid-time-off-policy.html

Peuranpää, P., Heliövaara-Peippo, S., Fraser, I., Paavonen, J., & Hurskainen, R. (2014, July). Effects of anemia and iron deficiency on quality of life in women with heavy menstrual bleeding. *Acta obstetricia et gynecologica Scandinavica, 7*(93),

pp. 654-660. Retrieved from https://obgyn.onlinelibrary.wiley.com/doi/full/10.1111/aogs.12394

Philips-Howard, P. A., Otieno, G., Burmen, B., Otieno, F., Odongo, F., Odour, C., . . . Zeh, C. (2015). Menstrual needs and associations with sexual and reproductive risks in rural Kenyan females: a cross-sectional behavioral survey linked with HIV prevalence. *Journal of women's health, 10*(24), 801-811.

Phillips-Howards, P. A., Nyothach, E., O ter Kuile, F., Omoto, J., Wang, D., Zeh, C., . . . Tudor Edwards, R. (2016). Menstrual cups and sanitary pads to reduce school attrition, and sexually transmitted and reproductive tract infections: a cluster randomised controlled feasibility study in rural Western Kenya. *BMJ Open, 6*(11), p. e013229. Retrieved from https://bmjopen.bmj.com/content/6/11/e013229.info

PMA2020/Ethiopia. (2018). *Menstrual Hygiene Management - Ethiophia, 2017.* Selected Briefs, Performance Moitoriing and Accountability 2020; Johns Hopkins Bloomberg School of Public Health; Bill & Melinda Gates Institute for Population and Reproductive Health., Department of Population, Family and Reproductive Health. Retrieved from https://www.pma2020.org/sites/default/files/MHM_Brief_Ethiopia_050918-Final.pdf

PMA2020/Kenya. (2018). *Menstrual Hygiene Management - Kenya 2017.* Selected Briefs, Performance Moitoriing and Accountability 2020; Johns Hopkins Bloomberg School of Public Health; Bill & Melinda Gates Institute for Population and Reproductive Health. Retrieved from https://www.pma2020.org/sites/default/files/MHM_Brief_Kenya_050818-Final.pdf

PMA2020/Uganda. (2018). *Menstrual Hygiene Management - Uganda 2017.* Selected Briefs, Performance Moitoriing and Accountability 2020; Johns Hopkins Bloomberg School of Public Health; Bill & Melinda Gates Institute for Population and Reproductive Health., Department of Population, Family and Reproductive Health. Retrieved from https://www.pma2020.org/sites/default/files/MHM_Brief_Uganda_050818-Final.pdf

PSI. (2018). *Expanding Access to Menstrual Hygiene Products for Adolescent Girls and Young Women in Ethiopia.* Reports and Breifs, PSI, SANITATION | WATER, SANITATION & HYGIENE, Washington DC. Retrieved from

https://www.psi.org/wp-content/uploads/2020/02/Expanding-Access-to-MHM-Products-in-Ethiopia-2018-1.pdf

Puffer, E. S., Meade, C. S., Broverman, S. A., Ogwang-Odhiambo, R. A., Sikkema, K. J., & Drabkin, A. S. (2011, August). Individual- and family-level psychosocial correlates of HIV risk behavior among youth in rural Kenya. *AIDS and Behavior*(15), pp. 1264–1274. Retrieved from https://doi.org/10.1007/s10461-010-9823-8

Raudel, H., & Morrinson-Métois, S. (2017). *Responding to Refugee Crises in Developing Countries: What Can We Learn From Evaluations?* OECD. Retrieved from https://www.oecd.org/dac/evaluation/responding%20to%20refugee%20crisis%20booklet.pdf

Robeyns, I. (2003). Sen's Capability Approach and Gender Inequality: Selecting Relevant Capabilities. *Feminist Economics, 9*(2-3), pp. 61-92. Retrieved from https://s3.amazonaws.com/academia.edu.documents/30797172/SelectingRelevantCapabilities.pdf?response-content-disposition=inline%3B%20filename%3DSens_capability_approach_and_gender_ineq.pdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=ASIATUSBJ6BAODL4R

Robeyns, I. (2005). The Capability Approach: a theoretical survey. *Journal of Human Development, 6*(1), pp. 93-117. Retrieved from https://doi.org/10.1080/146498805200034266

Roomaney, R., & Kagee, A. (2015). Coping strategies employed by women with endometriosis in a public health-care setting. *Journal of Health Psychology, 21*(10), pp. 2259-2268. Retrieved from https://doi.org/10.1177/1359105315573447

Sahoo, K. C., Hulland, K. R., Caruso, B. A., Swain, R., Freeman, M. C., Panigrahi, P., & Dreibelbis, R. (2015). Sanitation-related psychosocial stress: a grounded theory study of women across the life-course in Odisha, India. *Social Science & Medicine, 139*, pp. 80-89. Retrieved from https://doi.org/10.1016/j.socscimed.2015.06.031

Samari, G. (2017). Syrian Refugee Women's Health in Lebanon, Turkey, and Jordan and Recommendations for Improved Practice. *World Med Health Poloicy, 9*(2), pp. 255-274. Retrieved from doi:10.1002/wmh3.231

Sanghera, J. (2014). UN OHCHR Every woman's right to water, sanitation and hygiene. *World Menstrual Hygiene Day.* Kabulonga Girls Secondary School (Lusaka, Zambia) 28 May 2014.

Sedgh, G., Ashford, L. S., & Hussain, R. (2016). *Unmet Need for Contraception in Developing Countries: Examining Women's Reasons for Not Using a Method.* Retrieved from Guttmacher Institute: https://www.guttmacher.org/sites/default/files/report_pdf/unmet-need-for-contraception-in-developing-countries-report.pdf

Sen, A. (1999). *Development as Freedom* . New York: Oxford University Press.

Sheetal, B., Sheela, U., & Seeta, D. (2015). Influence of body mass index on menstrual irregularities in adolescent girls. *Internatioanl Journal of Medical and Health Sciences,, 4*(2), pp. 213-216. Retrieved from https://www.biocoreopen.org/articles/Do-nutritional-deficiencies-lead-to-menstrual-irregularities.pdf

Sida. (2016). *Brief: Menstrual Hygiene Management.* Retrieved from https://www.sida.se/contentassets/2d05faf3aebc4092a0ef96439c026262/18565.pdf

Sommer, M. (2012, January 1). Menstrual hygiene management in humanitarian emergencies: Gaps and recommendations. *Waterlines, 31*(1), pp. 83-104. Retrieved from https://doi.org/10.3362/1756-3488.2012.008

Sommer, M., Caruso, B. A., Sahin, M., Calderon, T., Cavill, S., Mahon, T., & Phillips-Howard, P. A. (2016a, February 23). A Time for Global Action: Addressing Girls' Menstrual Hygiene Management Needs in Schools. *PLoS Medicine, 13*(2), pp. 1-9. Retrieved from https://doi.org/10.1371/journal.pmed.1001962

Sommer, M., Cherenack, E., Blake, S., Sahin, M., & Buergers, L. (2015). *WASH in Schools Empowers Girls' Education Proceedings of the Menstrual Hygiene Management in Schools Virtual Conference 2014.* New York: United Nations Children's Fund and columbia University. Retrieved from https://www.unicef.org/wash/schools/files/MHM_vConf_2014.pdf

Sommer, M., Cherenack, E., Blake, S., Sahin, M., & Burgers, L. (2015). *WASH in Schools Empowers Girls' Education: Proceedings of the Menstrual Hygiene Management in Schools Virtual Conference 2014.* New York: United Nations Children's Fund and Columbia University. Retrieved from https://www.unicef.org/wash/schools/files/MHM_vConf_2014.pdf

Sommer, M., Hirsch, J., Nathanson, C., & Parker, R. (2015, July 1). Comfortably, safely, and without shame: defining menstrual hygiene management as a public health issue. *American Journal of Public Health, 105*(7), pp. 1302-1311. Retrieved from https://doi.org/10.2105/AJPH.2014.302525

Sommer, M., Phillips-Howard, P. A., Mahon, T., Zients, S., Jones, M., & Caruso, B. A. (2017). Beyond menstrual hygiene: addressing vaginal bleeding throughout the life course in low and middle-income countries. *BMJ Global Health, 2*(2), p. e000405. Retrieved from https://gh.bmj.com/content/bmjgh/2/2/e000405.full.pdf

Sommer, M., Schmitt, M. L., Clatworthy, D., Bramucci, G., Wheeler, E., & Ratnayake, R. (2016b, July 1). What is the scope for addressing menstrual hygiene management in complex humanitarian emergencies? A Global Review. *Waterlines, 35*(3), pp. 245-264. Retrieved from https://doi.org/10.3362/1756-3488.2016.024

Sommer, M., Schmitt, M. L., Ogello, T., Mathenge, P., Mark, M., Clatworthy, D., . . . Ratnayake, R. (2018, May 3). Pilot testing and evaluation of a toolkit for menstrual hygiene management in emergencies in three refugee camps in Northwest Tanzania. *Journal of International Humanitarian Action, 3*(6). Retrieved from https://doi.org/10.1186/s41018-018-0034-7

Sommer, M., Schmitt, M., & Clatworthy, D. (2017). *A toolkit for integrating Menstrual Hygiene Management (MHM) into humanitarian response (first edit).* New York: Columbia University, Mailman School of Public Health and International Rescue Committee. Retrieved from https://www.rescue.org/sites/default/files/document/2113/themhminemergencies toolkitfullguide.pdf

Sumpter, C., & Torondel, B. (2013). A systematic review of the health and social effects of menstrual hygiene management. *PloS one, 8*(4), p. e62004. Retrieved from https://doi.org/10.1371/journal.pone.0062004

Tegegne, T. K., & Sisay, M. M. (2014, October 29). Menstrual hygiene management and school absenteeism among female adolescent students in Northeast Ethiopia. *BMS Public Health, 14*(1118). Retrieved from https://doi.org/10.1186/1471-2458-14-1118

Tellier, S., & Hyttel, M. (2017). *Menstrual Health Management in East and Southern Africa: a Review Paper.* UNFPA, Menstrual Health Management Symposium. Johannesburg: UNFPA East and Southern Africa Regional Office.

The Case foor Her. (2017). *What We Do*. Retrieved from The Case for Her: http://www.thecaseforher.com/what-2/

Thomson, S. (2015). *1 in 10 girls in Africa will drop out of school for this reason.* Retrieved from World Economic Forum: https://www.weforum.org/agenda/2015/12/1-in-10-girls-in-africa-will-drop-out-of-school-for-this-reason/

Tolley, E., Kafafi, L., Loza, S., & Cummings, S. (2005, April 1). The Impact of Menstrual Side Effects on Contraceptive Discontinuation: Findings from a Longitudinal Study in Cairo, Egypt. *International Perspectives on Sexual and Reproductive Health, 31*(1), pp. 15-23.

Uganda, M., UNICEF, WHO, UNAIDS, Women, U., & UNFPA. (2016). *Adolescent Health Risk Behaviors in Uganda: A National Cross-sectional Survey.* Ministry of Health Uganda. Retrieved from MINISTRY OF HEALTH KNOWLEDGE MANAGEMENT PORTAL: http://library.health.go.ug/sites/default/files/resources/Adolescent%20Health%20%20Risk%20Behaviour%20Study%20%20in%20Uganda-September%202017.pdf

UN. (2017). *Speakers Stress Link between Sexual Health Rights, Socioeconomic Growth, as Commission on Population and Development Concludes General Debate.* Retrieved from United Nations Meetings Coverage and Press Releases: https://www.un.org/press/en/2017/pop1059.doc.htm

UN. (2017). *The Sustainable Development Goals Report.* Retrieved from United Nations: https://unstats.un.org/sdgs/report/2017/

UN. (2020). *The Sustainable Development Agenda* . Retrieved from Sustainable Development Goals: https://www.un.org/sustainabledevelopment/development-agenda/

UN News. (2019, March 5). *Break taboo around menstruation, act to end 'disempowering' discrimination, say UN experts*. Retrieved from UN News Women: https://news.un.org/en/story/2019/03/1034131

UNAIDS. (2018). *Transactional sex and HIV risk: from analysis to action.* Retrieved from UNAIDS: https://www.unaids.org/sites/default/files/media_asset/transactional-sex-and-hiv-risk_en.pdf

UNDP. (2016). *About Human Development* . Retrieved from United Nations Development Programme - Human Development Reports: http://hdr.undp.org/en/humandev

UNDP. (2017). *Millennium Development Goals* . Retrieved from United Nations Development Programme: https://www.undp.org/content/undp/en/home/sdgoverview/mdg_goals.html

UNESCO. (2000). *The Dakar Framework for Action: Education for all: Meeting our collective commitments,*. Paris: United Nations Educational, Scientific and Cultural Organization. Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000121147

UNESCO. (2014). *Puberty Education & Menstrual Hygiene Management.* Paris: United Nations Educational, Scientific and Cultural Organization.

UNESCO. (2016). *Puberty education & menstrual hygiene management*. Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000247401

UNFPA. (2018). *Period shame, misinformation linked to serious human rights concerns.* Retrieved from UNFPA News: https://www.unfpa.org/news/period-shame-misinformation-linked-serious-human-rights-concerns

UNFPA. (2019). *Menstruation and human rights - Frequently asked questions*. Retrieved from UNFPA: https://www.unfpa.org/menstruationfaq#menstruation%20and%20human%20rights

UNFPA. (2020). *Demographic dividend.* Retrieved from United Nations Population Fund: https://www.unfpa.org/demographic-dividend

UNFPA ESARO. (2017). *Barriers And Motivations For Contraceptive Use In East And Southern Africa: Regional Operational Research To Identify Strategies For Accelerating Contraceptive Uptake.* Retrieved from UNFPA ESARO: https://esaro.unfpa.org/sites/default/files/pub-pdf/Research%20Summary%20-%20Barriers%20to%20and%20motivation%20for%20modern%20contraceptives%20use%20in%20ESA%20final.pdf

UNFPA ESARO. (2018, June 12). *News - Period shame, misinformation linked to serious human rights concerns*. Retrieved from UNFPA East and Southern Africa: https://esaro.unfpa.org/en/news/period-shame-misinformation-linked-serious-human-rights-concerns

UNFPA ESARO; MHM Symposium. (2018). *First East and Southern Africa Regional Symposium. Improving Menstrual Health Management for Adolescent Girls and Women.* Retrieved from Menstrual Hygiene Day: https://menstrualhygieneday.org/wp-content/uploads/2018/10/MHM-Symposium-Report-final.pdf

UNFPA; Department of Women in the Presidency of the Republic of South Africa. (2018). Final Report. *First East and Southern Africa Regional Symposium Improving Menstrual Health Management for Adolescent Girls and Women.* Johannesburg: UNFPA and the Department of Women in the Presidency of the Republic of South Africa.

UNICEF. (2015). *UNICEF Annual Report - Burundi* . Retrieved from https://www.unicef.org/about/annualreport/files/Burundi_2015_COAR.pdf

UNICEF. (2016, April 10). *Water, Sanitation and Hygiene- About WASH.* Retrieved from UNICEF: https://www.unicef.org/wash/3942_3952.html

UNICEF. (2017). *Gender Action Plan 2018-21.* Retrieved from UNICEF: https://www.unicef.org/gender-equality/gender-action-plan-2018-2021

UNICEF. (2018). *FAST FACTS: Nine things you didn't know about menstruation.* Retrieved from UNICEF: https://www.unicef.org/press-releases/fast-facts-nine-things-you-didnt-know-about-menstruation

UNICEF. (2019). *Guidance on Menstrual Health and Hygiene.* Retrieved from UNICEF: https://www.unicef.org/wash/files/UNICEF-Guidance-menstrual-health-hygiene-2019.pdf

UNICEF. (2019). *Guidance on Menstrual Health and Hygiene.* Manual and Guideline, UNICEF, Programme Division/WASH, New York. Retrieved from https://www.unicef.org/wash/files/UNICEF-Guidance-menstrual-health-hygiene-2019.pdf

UNICEF. (2020). *Mitigating the Impacts of COVID-19 on Menstrual Health and Hygiene.* Retrieved from https://www.unicef.org/documents/mitigating-impacts-covid-19-menstrual-health-and-hygiene

UNICEF Zambia. (2017). *Advancing Girls' Education through WASH Programs in Schools A Formative Study on Menstrual Hygiene Management in Mumbwa and Rufunsa Districts, Zambia.* Retrieved from http://www.wins4girls.org/resources/2017%20Zambia%20MHM%20Qualitative%20Formative%20Research%20MHM%20Barriers%20Report.pdf

UNICEF/WASH. (2018). *Availability of MHM data for global WASH in schools monitoring.* Retrieved from MHM Virtual Conference: https://www.dropbox.com/sh/u6sqaefyn4ukquw/AABazb1DAnHagbVqy8onmSK_a?dl=0&preview=8.+Availability+of+MHM+data+for+global+WASH+in+schools+monitoring.pdf

UNICEF; WHO. (2018). *Drinking water, sanitation and hygiene in schools: global baseline report 2018.* New York: United Nations Children's Fund (UNICEF) and World Health Organization. Retrieved from https://www.unicef.org/media/47671/file/JMP-WASH-in-Schools-ENG.pdf

United Nations. (2015). *The Millennium Development Goals Report 2015.* United Nations, Statistics Division of the United Nations Department of Economic and Social Affairs., New York. Retrieved from United Nations: https://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf

Wamoyi, J., Stobeanau, K., Bobtova, N., Abramsky, T., & Watts, C. (2016, November 2). Transactional sex and risk for HIV infection in sub-Saharan Africa: a systematic review and meta-analysis. *Journal of the International AIDS Society*. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.7448/IAS.19.1.20992

Wamoyi, J., Wight, D., Plummer, M., Mshana, G. H., & Ross, D. (2010). *Transactional sex amongst young people in rural northern Tanzania: an ethnography of young women's motivations and negotiation.* Retrieved from Reproductive Health: https://doi.org/10.1186/1742-4755-7-2

WASH Alliance Kenya. (2018). *The WASH Alliance Kenya Story*. Retrieved from WASH Alliance Kenya: https://washalliancekenya.org/who-we-are/

WASH Cluster. (2014). *Normes et Standards Pour les interventions d'urgence en Eau, Hygiène et Assainissement en République Démocratique du Congo.* Retrieved from https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/Standards%20-%20cluster%20WASH%20RDC%202014%20Mai%202014.pdf.

WASH United. (2019). *POLICY LANDSCAPE FOR MENSTRUAL HYGIENE & HEALTH.* Retrieved from Menstrual Hygiene DAy: https://menstrualhygieneday.org/wp-content/uploads/2019/08/MHM-Policy-Overview_WASHUnited_MHDay.pdf

WASH United; Menstrual Hygiene Day. (2020). *PERIODS DON'T STOP FOR PANDEMICS.* Retrieved from Menstrual Hygiene Day: https://menstrualhygieneday.org/wp-content/uploads/2020/05/mhday2020-covid19-and-periods-logo.pdf

WaterAid. (2020). *Global Menstrual Health and Hygiene Collective's statement for the Commission on the Status of Women*. Retrieved from WaterAid: https://washmatters.wateraid.org/publications/global-menstrual-health-and-hygiene-collectives-statement

WHO. (1948). Preamble to the Constitution of WHO as adopted by the International Health Conference. *Preamble to the Constitution of WHO*. New York.

WHO. (2019). *Improving health and learning through better water, sanitation and hygiene in schools. An information package for school staff.* Copenhagen Regional Office: World Health Organisation . Retrieved from https://apps.who.int/iris/bitstream/handle/10665/329531/9789289054508-eng.pdf?sequence=1&isAllowed=y

WHO; UNICEF. (2013). *Progress on Sanitation and Drinking Water - 2013 Update.* Geneva: WHO Press. Retrieved from https://apps.who.int/iris/bitstream/handle/10665/81245/9789241505390_eng.pdf;jsessionid=5469A63B24BE76F996053BEEEC8A9BBC?sequence=1

WHO; UNICEF. (2019). *Progress on household drinking water, sanitation and hygiene 2000 - 2017. Special focus on inequalities.* New York: United Nations Children's Fund (UNICEF) and World Health Organization (WHO). Retrieved from https://www.who.int/water_sanitation_health/publications/jmp-2019-full-report.pdf

WinS4Girls. (2018). *WinS4Girls Compendium*. Retrieved from WinS4Girls Compendium: http://www.wins4girls.org/

Wodon, Q., Montenegro, C., Nguyen, H., & Onagoruwa, A. (2018, July 11). *Missed Opportunities: The High Cost of Not Educating Girls. The Cost of Not Educating Girls Notes Series.* The World Bank, Education Global (HEDGE). Washington D.C.: The World Bank. Retrieved from http://documents.worldbank.org/curated/en/775261531234655903/pdf/128171-replacement-HighCostOfNotEducatingGirls-Web.pdf

WoMena. (2017). *Menstrual Health in Rhino Camp Refugee Settlement West Nile, Uganda. Pilot Intervention Report.* Retrieved from http://womena.dk/wp-

content/uploads/2017/12/WoMena-ZOA-Rhino-Camp-Refugee-Settlement-MHM-Pilot-Intervention-Report.pdf

World Bank. (2005). *Toolkit on Hygiene Sanitation and Water in Schools.* Retrieved from The World Bank Group: http://documents.worldbank.org/curated/en/339381468315534731/pdf/410300PAPER0Hygiene0toolkit01PUBLIC1.pdf

World Bank. (2008). *Economic impacts of sanitation in Southeast Asia : a four-country study conducted in Cambodia, Indonesia, the Philippines and Vietnam under the Economics of Sanitation Initiative (ESI).* Jakarta: The World Bank Group. Retrieved from World Bank: http://documents.worldbank.org/curated/en/246121468231556842/pdf/463510WSP0Box31n1Impact1Synthesis12.pdf

World Bank. (2018a). *Unrealized Potential: The High Cost of Gender Inequality in Earnings.* Retrieved from The Wolrd Bank Group: https://www.worldbank.org/en/topic/gender/publication/unrealized-potential-the-high-cost-of-gender-inequality-in-earnings

WSSCC. (2013). *WASH and Health for Menstrual Hygiene Management Training of Trainers Manual.* Retrieved from Water Supply and Sanitation Collaborative Council: https://www.wsscc.org/wp-content/uploads/2016/07/Training-of-Trainers-Manual-WASH-and-Health-for-Menstrual-Hygiene-Management.pdf

WSSCC; UN Women. (2014). *Menstrual Hygiene Management: Behaviour and Practices in the Louga Region, Senegal.* London: WSSCC and UN Women. Retrieved from https://www.wsscc.org/wp-content/uploads/2016/04/Study-%E2%80%93-Menstrual-Hygiene-Management-Behaviour-and-Practices-in-the-Louga-Region-Senegal-WSSCC-UN-Women.pdf

Yamada, K., & Kamagata, E. (2017). Reduction of quality-adjusted life years (QALYs) in patients with premenstrual dysphoric disorder (PMDD). *Quality of Life Research, 26*, pp. 3069–3073. Retrieved from https://link.springer.com/article/10.1007/s11136-017-1642-1

Zambian Ministry of General Education. (2016). *Menstrual Hygiene Matters. National Guidelines.* National Guidelines, Ministry of General Education of Zambia , Lusaka, Zambia. Retrieved from https://menstrualhygieneday.org/wp-content/uploads/2017/09/MHM-Guidelines_Final-Version_20160831_With-foreword.pdf

Zarkin-Scott, S., von Euler-Chelpin, M., & Tellier, S. (2017). *WoMena.* Retrieved from Reproductive Tract Infections Associated with Various MHM Methods: A Systematic Review.: http://womena.dk/wp-content/uploads/2019/07/Reproductive-Tract-Infections-Associated-with-Various-MHM-Methods-A-Systematic-Review-1.pdf

Zimbabwe National Statistics Agency; UNICEF. (2019). *Zimbabwe Multiple Indicator Cluster Survey 2019, Snapshots of Key Findings.* Harare, Zimbabwe: ZIMSTAT and UNICEF. Retrieved from https://mics-surveys-prod.s3.amazonaws.com/MICS6/Eastern%20and%20Southern%20Africa/Zimbabwe/2019/Snapshots/Zimbabwe%202019%20MICS%20Snapshots%20of%20Key%20Findings_English.pdf