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MOVING TOWARD A HOLISTIC MENSTRUAL HYGIENE MANAGEMENT:  
AN ANTHROPOLOGICAL ANALYSIS OF MENSTRUATION AND PRACTICES IN  
WESTERN AND NON-WESTERN SOCIETIES

By

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Thesis

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Moving Toward a Holistic Menstrual Hygiene Management: An Anthropological Analysis of Menstruation and Practices in Western and Non-Western Societies

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Educating girls is not only their human right, but also proposed as one of the best investments for improving quality of life in developing countries (Montgomery et al. 2016, 2). Although menstruation is a universal, biological process, it is fraught with cultural stigmas and taboos throughout Western and non-Western societies. Menstrual-related absenteeism is believed to be a primary cause of missed attendance and early dropout rates, so the developing field of menstrual hygiene management (MHM) is seeking to understand and evaluate what factors are contributing to these findings. After the analyzation of the current literature, a more holistic, nine-pronged approach to menstrual hygiene management is proposed for interventions in the Global South through girls' access to sanitary products, clean toilets, hand washing facilities, puberty education, pain mitigation, a head woman teacher, inclusion of boys and men, improving support at home, and destigmatization. Because of the country's rich recent history of international attention and aid, Uganda will be utilized as a backdrop to understand what menstrual hygiene management research is currently being conducted, positive and negative conclusions from the studies, and to uncover gaps for future research.

## **Abbreviations List**

CMA- Critical Medical Anthropology  
CRECCOM- Creative Center for Community Mobilization  
DFID- Department for International Development  
GBV- Gender Based Violence  
GNP- Gross National Product  
HIPC- Highly-Indebted Poor Country  
IMR- Infant Mortality Rate  
INGO- International Non-Governmental Organization  
LMIC- Low and Middle-Income Countries  
MDGs- Millennium Development Goals  
MHM- Menstrual Hygiene Management  
MHP- Menstrual Hygiene Product  
MMR- Maternal Mortality Rate  
NDP- National Development Plan  
NGO- Non-Governmental Organization  
SAP- Structural Adjustment Program  
SBCC- Social and Behavior Change Communication  
SDGs- Sustainable Development Goals  
SES- Socioeconomic Status  
UNICEF- United Nations Children’s Fund  
WASH- Water, Sanitation, Hygiene  
WHO- World Health Organization  
WSSCC- Water Supply & Sanitation Collaborative Council

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## **CHAPTER ONE: THE ANTHROPOLOGY OF MENSTRUATION**

### **Menstruation is Normal**

Menstruation is a biological experience that transcends race, ethnicity, time period, socioeconomic status (SES), and culture. The beginning of a young girl's first menstrual cycle is a monumental moment and is a key indicator in a young woman's transition into womanhood (Boosey et al. 2014, 2). With as many as 300 million girls and women menstruating worldwide every day, this issue affects a significant portion of the world's population at an immense scale (WSSCC 2013, 3). If menstruation is biological, why isn't there more dialogue about it? Why is it taboo to have an unused sanitary product visible to not only boys and men, but to other women and girls as well? Why must the wrapped tampon be hidden in a boot or sleeve to go change it in the restroom? Why is it taboo for a girl or woman discuss her menstrual cycle with her partner or anyone else (Freidenfelds 2010, 14)? Upon delving into the literature on menstruation in Western and non-Western cultures it is clear that menstruation typically carries significant stigmas that negatively impact women and their views of their body. The Water Supply & Sanitation Collaborative Council, a UN council based out of Geneva, wrote that "menstruation is a taboo handed down over time to be dealt with privately by women and girls and not shared in public." This taboo is institutionalized at home, in school, and even on a governmental level, all of which teach girls and women that they should be secretive, private, and ashamed of their bodies (WSSCC 2013, 2). This secrecy has significant effects on how girls see womanhood, their bodies, and themselves. Literature on menstruation across contexts such as rural, urban, poor, and in places like the United States and developing countries, address stigma and taboo, whether

it is spoken about directly or used contextually. For instance, a Uganda study analyzing schoolgirls from a rural poor context remarked, “...their nervous laughs, avoidance of eye contact, and the fact that they often turned their faces towards the floor when speaking,” is a common example of how the ingrained taboo and stigma are expressed (Boosey et al. 2014, 4). The WSSCC (2013) suggests that “...one truth is usually universal: women and girls are supposed to cope with menstruation silently and invisibly. They are not supposed to talk about it outside private conversations between women and girls.” It is not only taboo to discuss menstruation with boys and men, but often taboo to discuss with friends or family, including between mothers and daughters (6). Due to this crippling stigma, many girls have no menstruation education of any level before their first menses occurs (see throughout Alam et al. 2017; Adinma and Adinma 2008; Pillitteri 2011; Montgomery et al. 2016; Boosey et al. 2014; Hennegan et al. 2016; Furth and Ch’en 1992). This stigma creates a culture of insecurity and fear in girls, causing not only the physical symptoms of menstruation but psychological ones as well. Regardless of the girl’s or her community’s reaction to menarche, the same process is occurring with the shedding of the uterine lining. Although this seems like it is a simple, physical experience shared women globally, these immense taboos that accompany menstruation in many Western and Non-Western cultures are taking a toll on the physical, psychological, and social well-being of girls and their futures (again, see throughout Alam et al. 2017; Adinma and Adinma 2008; Pillitteri 2011; Montgomery et al. 2016; Boosey et al. 2014; Hennegan et al. 2016; Furth and Ch’en 1992; Limoncelli 2010; WSSCC 2013; WaterAid 2013).

This paper will first delve into why analyzing menstruation from an applied and medical anthropological toolkit is beneficial and then will discuss why using Critical Medical Anthropology theory is an ideal theoretical lens to deconstruct the topic. In chapter two,

menstruation practices, attitudes, perceptions, and management strategies in both Western and non-Western societies will be analyzed in relation to positive and negative beliefs surrounding the actual process, as well as how people in different cultures handle puberty and menstruation through a variety of case studies. Uganda will then be used as a country case study in chapter three due to its recent development emphasis and the volume of attention it has gotten in the international development realm. Chapter four includes a call for a more holistic approach to Menstrual Hygiene Management (MHM) and will detail how the literature supports these claims. Chapter four will also detail the ethics of working in MHM, followed by how to apply the holistic approach and why addressing these issues are imperative.

The current literature surrounding MHM is underdeveloped and strategies for implementation are still being debated. The most accepted definition of menstrual hygiene management, as defined by the Joint Monitoring Program by WHO and UNICEF in 2012, is as follows:

Women and adolescent girls using a clean menstrual management material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials'. This captures aspects of the physical requirements for hygienic, effective management of menstrual bleeding. Use of the term has proliferated; however, operationalization has been inconsistent. (Hennegan et al. 2016, 2)



Qualitative and quantitative studies of MHM typically only address one or a selection of the above-mentioned aspects of absorption, privacy, soap and water, and disposal facilities, and there needs to be significant research to understand these factors. Hennegan et al. (2013) write, “Overextension of the term [MHM] has also occurred with studies reporting a lack of knowledge about menstruation or cultural taboos as aspects of MHM, rather than contributors to MHM.” These factors suggested by the Joint Monitoring Program are indeed contributors to MHM; however, both categories of “contributors” and “factors” of MHM from Hennegan et al. (2013) should be addressed in a study looking to include a holistic approach to MHM (2). An examination of the literature of menstruation and MHM (included in the References section) has revealed a need for a more holistic and destigmatized way for girls to manage menstruation, specifically in developing contexts. Through the implemented research in case studies included in the References section and gaps in this research suggested by these authors, I have developed a multi-faceted approach to MHM aimed at locations in the Global South that contains the following nine components:

1. Sanitary hygiene materials
2. Clean toilets
3. Hand washing
4. Puberty education
5. Pain mitigation
6. Head woman teacher
7. Inclusion of boys and men
8. Support at home
9. Destigmatization

What Hennegan et al. describe as “aspects of MHM” will also be referred to in this paper as ‘visible’ indicators of holistic MHM (clean toilets, hand washing facilities, puberty education, pain mitigation, and access to sanitary products). The “contributors to MHM” may also be referred to in this paper as ‘invisible’ indicators (head woman teacher, destigmatization, inclusion of boys and men, and improving support at home). Although Hennegan et al. (2016) believe that this is an “over extension of the term...,” a review of the literature reveals that their traditional definition of menstrual hygiene management only serves as a band-aid for the menstruation challenges faced and does not address the underlying issues of menstrual stigma (2). The proposed view of MHM can not only provide girls with the dignity to manage their own menstruation, but will address issues that perpetuate menstruation as negative. It aims to create a menstruation-positive network of not just girls and women, but boys and men. Only when girls are able to access the appropriate tools to manage female only biological process, but when they are allowed to access their own fundamental human rights to dignity, health, and education, will MHM be successful. This paper calls on development professionals in all sub-disciplines to use a holistic approach to properly tackle MHM in low resource settings in low-middle income countries (LMICs), instead of selecting a few factors to target. If all aspects are not addressed, holistic MHM may be unachievable and unsuccessful.

### **Medical Anthropology and Menstruation**

Medical anthropology provides an excellent toolkit to deconstruct and analyze the realities of menstruation as well as the methods to reconstruct it and create solutions to better current practices. Medical anthropology is one of anthropology’s newest fields, even being called a “...baby boomer of sorts” (Singer and Erickson 2011, 1). Although the exact origin of ‘medical

anthropology' has not been universally agreed upon, there is no doubt that culture and health have been intertwined for hundreds of years. The work of a medical anthropologist has been oriented around pressing health concerns and current medical issues across the globe that require both an understanding of the issue at hand and action for change (Singer 2004, 1). The medical anthropologist uses a bio-sociocultural approach to the human condition and the social origins of disease (Singer and Baer 2011, 7-11). Because medical anthropology has this approach, many medical anthropologists work in the applied realm. As quoted by a Haitian patient, "don't just study our suffering- do something to allay it" (Farmer 2006, xvi). Fragmentation has occurred in the field of medical anthropology as the subject matter is so comprehensive that sub-fields have formed and theories and methods have sprouted from them as well (Saillant and Genest 2007, xviii). For instance, medical anthropology can take shape in the form of MHM, ethnomedicine, disease disruption, political economy of health care, behavior change surrounding phenomena such as open-defecation, and the experiences of illness just to name a few ("What is Medical Anthropology?" 2017, under "... such issues as:"). This vast variety divides the field, but also defines it as it truly reflects the diversity of the human condition. Traditionally in the United States, the academic subject of anthropology is broken down into four parts: social and cultural anthropology, biological anthropology, archeology, and linguistics; however, in other countries it is often either just social and cultural anthropology focused or a general combination of all subsets. Some argue that medical anthropology should be a fifth subdiscipline, and others argue that it is a mixture of social and cultural with biological anthropology as it incorporates a bio-sociocultural approach to the topic of health. Additionally, others argue that it is between traditional theoretical anthropology and applied anthropology (Singer and Baer 2011, 18). Although the four common subdisciplines of anthropology are often believed to be exclusive of

each other, and often academic departments treat them as such, biology, culture, language, and history are often intimately intertwined. If anthropologists discontinued using their red tape to mark what is included and excluded in their subdisciplines, a more holistic approach to anthropology in general could be achieved. This paper will analyze menstruation management practices and menstruation-related development programs through an applied, medical anthropological lens, but will also draw upon perspectives from cultural anthropology, sociology, gender studies, communication, international development, and psychology.

The concept of social suffering allows anthropologists to reshape the medico-centric constructions of illness and disease to include cultural constructs into health (Saillant and Genest 2007, xxvii). Furthermore, this model provides researchers with a tool to understand the experiences of suffering “...by redefining the boundaries of the political, corporeal, and subjective.” This permits illness and disease to be interpreted as a cultural phenomenon (Saillant and Genest 2007, xxvii). Social theories of the body have become so essential in social science research that Shilling (2005) claims that “no study can lay claim to being comprehensive unless it takes at least some account of the embodied preconditions of agency and the physical effects of social structures” (1). For this reason, medical anthropology aims to construct the social, mental, and physical to assemble a holistic understanding of health (Womack 2010, 2). Menstruation, therefore, is a form of social suffering. Menstruation has a history of literature in theoretical anthropology, but applied and medical anthropologists have only recently taken action. In the theoretical literature there is a common theme of ‘polluted or unpolluted’ when depicting how cultures view menstruation. The theme refers to either menstrual blood or girls and women being polluted or unpolluted. Gottlieb (1982) points out that “...if [women] are not considered polluting, it is taken as a sign of sex-role egalitarianism; conversely, [if] they are considered

polluting, it is taken as a sign of women's lower status vis-i-vis men and/or of the potential danger or threat that women represent to men” (34). Furth and Ch'en (1992) comment on this dichotomy of polluted vs. sacred by remarking that these beliefs have been viewed “...as marking male fears of women in social structures where female power is viewed ambiguously” (27). Therefore, menstruation is often viewed as a type of symbolic anthropology that utilizes women, menstruation, and the rituals surrounding them as symbolic of their culture. The social and cultural meanings behind every menstrual practice are significant and symbolic of how the culture views biology as well as women and girls. Because of the immense menstrual symbolism, regardless of its positive or negative inferences, it is vital to understand the social meaning behind the stigmas and practices. A deep understanding of cultural practices and their origins are essential for behavior change.

Although menstruation and the stigmas, myths, and taboos surrounding it have a presence in the anthropological literature, menstrual hygiene management has a scarce amount. MHM is a broad topic that is a relatively new field in development, so using an anthropological lens is a beneficial tool to understand the scope and to use applied anthropological methods to unearth the situational realities of the young women in order to assist in finding solutions. Using a medical anthropological perspective, the study of menstruation has traditionally been understood in purely symbolic ways. As Gottlieb (1984) addresses, “menstrual blood has proved a popular subject for discussion in the anthropological literature but, surprisingly, only a single theme has emerged: societies either do or not consider menstrual blood and menstruating women to be polluting.” She continues that if the menstrual cycle is not seen as a pollutant than it is interpreted as “sex-role egalitarianism” (Gottlieb 1982, 34). Although the dichotomy of polluted or not is a more traditional viewpoint in anthropology, it is important to understand why it is seen

as something other than biological. Many women in non-Western societies may have additional challenges due to being in low-income settings. Although there is validity that low-resource settings increase the challenges presented to girls and women, there are also hidden stigmas, taboos, and challenges in Western cultures.

### **Using Critical Medical Anthropology to Critically Understand Menstruation and MHM**

*“Critical medical anthropology can be defined as a theoretical and practical effort to understand and respond to issues and problems of health, illness, and treatment in terms of the interaction between the macro level of political economy, the national level of political and class structure, the institutional level of the healthcare system, the community level of popular and folk beliefs and actions, the micro level of illness experience, behavior, and meaning, human psychology, and environmental factors” (Singer 1995, 81).*

Critical medical anthropology (CMA), a dominant theory within the field, combines both medical and applied anthropology to “...understand health issues within the context of political and economic forces” (Baer et al. 2012, 242). Critical medical anthropology merges anthropological theory and ethnographic action to provide the toolkit for a medical anthropologist to approach a field site. This theory incorporates social approaches into a medically-focused field. Shaped in part by the ideas of Marx, Engels and C. Wright Mills, this theory is “...concerned with the ways power differences shape social processes, including research in medical anthropology” (Baer, Singer, and Johnsen 1986, 95). Many critical medical anthropologists believe that “...the dominant ideological and social patterns in medical care are intimately related to hegemonic ideologies and patterns outside of medicine” (Baer, Singer, and

Johnsen 1986, 95). The control over biomedicine and access to health are of great concern to a critically applied medical anthropologist and the implications of that are what critical medical anthropologists want to understand (Baer et al. 2012, 243). CMA encourages the analyzation of power structures and their impact on the not just health systems, but the delivery of health services, the allocation of economic resources, social class systems, the effects of discrimination and stratification of gender, and the global political economy “in societies as diverse as developed capitalist, developing capitalist, socialist-oriented, or post-revolutionary ones” (Baer et al. 2012, 243; Winkelman 2009, 302). Critical medical anthropology is a theory, but one that is dedicated to social action. “Critical medical anthropologists seek to place their experiences at the disposal of labor unions, peace organizations, environmental groups, ethnic community agencies, women’s health collectives, health efforts, national liberation struggles, and other bodies or initiatives that seek to liberate people from oppressive health and social conditions” (Baer et al. 2012, 243). With a “...multidimensional view of health and disease,” an applied medical anthropologist must ask themselves “how can this situation be improved?” (Singer 1995, 82; McElroy and Townsend 2009, 1). The goal of a critical medical anthropologist is to concentrate their efforts on understanding the “...dominant cultural constructions on health...” using a bottom-up approach (Singer and Baer 2007, 33).

Critical medical anthropology’s strengths greatly outweigh any remaining concerns. There are many facets to the discipline of medical anthropology that critical medical anthropology also includes: health, disease, syndemics, medicalization, sufferer experience, medical hegemony, and medical pluralism. As Singer (2004) wrote, “Consequently, within CMA health is defined as access to and control over the basic material and nonmaterial resources that sustain and promote life at a high level of satisfaction. Health is not some absolute state of being

but an elastic concept that must be evaluated in a larger sociocultural context” (1). As a medical anthropologist, the question of control of healthcare (biomedical, traditional, etc.) is of high value because that then defines the role of power and will provide insightful information on those being researched (Baer, Singer, and Johnsen 1986, 95). Who has the power? How is it delegated? How is it expressed socially? What are the consequences? What are the issues presented? (96). Baer and his associates believe that attention to the influence of class-interests on official understandings, as well as to the workings of power in large-scale organizations is vital for a truly critical medical anthropology. An approach that is sensitive to these issues will not cater to the furtherance ‘medical cultural hegemony’ of the capitalist world system, but will help create a new medical system. This new system will not promote the narrow interests of a small, privileged sector of society. Its creation requires a radical transformation of existing social and economic relationships” (Baer, Singer, and Johnsen 1986, 97). As Baer (1990) wrote, “Critical medical anthropologists ultimately aspire to merge theory and praxis in their desire to promote experiential health as opposed to the functional health associated with contemporary political economics around the world” (1011). CMA places people's reliance on folk and heterodox healing systems within the broader context of the expansion of capitalism and a biomedicine often unavailable to the poorer classes (Donahue 1998, 258). The theory is based upon empirical research and is ideally able to balance social science’s unbiased capabilities with the mindfulness of the root of an issue (Singer 1995, 81).

Many medical anthropologists have utilized the critical medical anthropology approach. Nichter and Nichter believe the theory can provide an “...emphasis on cultural aspects of medicine and their links to larger social contexts and concrete applicability of the anthropological endeavor [through]...critical examination of health initiatives and medicinal



practices” (Nichter and Nichter 1996, vii-xvi). In his book *Aids and the Health Crisis of the U.S. Urban Poor; the Perspective of Critical Medical Anthropology*, Singer (1994) proposes that to restructure the view on AIDS in America, according to a critical medical anthropologist perspective, one must bear in mind the “social dimensions of AIDS, its: social construction, social transmission, and social location” (941). There is also a strong theme in these ethnographies and articles that shows how the critical medical anthropologist is able to utilize a very grassroots, bottom-up approach during their fieldwork by “...giving voice to the submerged, fragmented, and largely muted subcultures of the sick” (Scheper-Hughes 1990, 189). McMullin (2009) felt similarly to Scheper-Hughes when quoted as saying the following: “Inasmuch as it is profoundly important for Native Hawaiians to remember and practice the forms of knowledge that they believe to be necessary and practical for the contemporary era, a CMA approach moves toward the integration of historical and political economic perspectives with cultural knowledge of health and illness” (14). The goal is to receive unbiased information that is able to make a difference in the lives of those whom the researcher is studying. The best way to go about this from the point of view of a critical medical anthropologist is to “...unearth prevailing concepts of medicine using in-depth interviews, medicinal samples, material culture, linguistics data, and historical and archeological sources” (Konadu 2007, xxx). A direct example of such a concept is the following: “Biomedical approaches blame patients for problems, such as drinking, rather than recognizing their causes in social conditions (low salaries, no health benefits), and political decisions about funding public health and medical care services” (Winkelman 2009, 296). Essentially, critical medical anthropologists are branded as academic consultants for non-academics in the global health sector.

CMA theory allows the medical anthropologist to analyze the topic of menstrual hygiene management in a bottom-up way, focusing on the experience of the young women and uncovering the actual reasons girls are facing such important issues such as crippling stigma, school dropout rates, and early pregnancy. By taking a cultural view of medicine, the development professional can better understand the underlying societal issues surround MHM, instead of just understanding biological issues. For instance, it is common in the literature on MHM to see a single-pronged approach where access to sanitary products is the only focus. Access to menstrual hygiene products (MHPs) is imperative; however, using it as a sole focus excludes the important social issues surrounding menstrual hygiene management. First of all, are the products disposable or reusable and why was that chosen? Is it actually a sustainable solution for this community or the individual? Are there social stigmas against that particular product, such as tampons or other objects inserted into the vagina? In some places these items may be believed to take your virginity. Even if the girl now has access to this product, what will she do about washing up if she doesn't have access to clean, private facilities or water to maintain her dignity? Simply providing sanitary products is a band-aid solution that many aid organizations have used to attempt to address MHM. Using the CMA theory, the medical anthropologist would look at menstrual hygiene management and see a much bigger and more complicated picture. The proposed holistic approach to MHM through CMA and applied medical anthropology will address the topic of menstruation from looking at a micro level to a macro one.

## **CHAPTER TWO: MENSTRUATION IN WESTERN AND NON-WESTERN CULTURES**

### **Menstruation in the United States**

Because the onset of menarche can have cultural significance, both Western and non-Western cultures have specific guidelines for proper and improper practices. Western cultures may appear to have good menstrual hygiene management practices; however, there are still immense stigmas and poor views of menstruation that negatively impact women, commonly beginning during puberty and menarche. The beginning of this section will have a primary focus on the United States and Canada with anecdotes and research from other Western contexts to follow.

During an open discussion I conducted as I was guest-teaching a course at The University of Montana in fall 2017, I conversed about menstruation and personal experiences with a group of approximately 15-20 male and female undergraduate students. This conversation highlighted that this entire group of diverse students felt their experiences and education about menstruation were flawed, and the below summary of our conversations showed that there is significant room for improvement within American culture. Menstrual hygiene management cannot simply involve “the other,” as every culture could improve their underlying cultural stigmas with an increased holistic approach to MHM. As I have learned in my two and a half years studying menstruation, it is often a very uncomfortable topic to discuss publicly for those outside of academic or medical fields. This conversation needed to be casual and comfortable for the participants in order to have them open up about their personal and general experiences with menstruation. When we started our conversation my first question to the students was, “Tell me about a time or times where you have felt menstruation was a taboo in your own life.” An

awkward silence fell. I then shared my personal experiences with menstrual taboos, in particular that my own thirty-two-year-old brother cannot hear the words “period, menstruation, or cycle,” without cringing and getting acutely squeamish. First, a few women began with nodding and adding their own stories of partners, fathers, siblings, or male friends reacting in similar ways. One woman recalled her sexual education and began to trace her feeling of inherent taboo and secrecy back to those moments. At her school, the boys and girls were separated and each taught exclusively about their own body’s transformations and only about the female body in terms of sexual intercourse. She was told that girls will reach menarche, but that it should be dealt with discretely and privately away from boys. Other women shared this experience and men recalled receiving either a miniscule amount of information about periods or no mention of them. One man who went to an all-boys school during puberty, realized that his education excluded all discussion on women, except when describing sex. This presents a notion that 1) women should solely discuss their menstruation with other women and be secretive about it around men, and 2) that, for men, women’s puberty is only discussed in terms of sexual intercourse. Both of these concepts are highly problematic for not just menstruation, but for the perception of women by both men *and* women.

If sexual education is even taught in school, seventh grade is often the only time that the topic is addressed. However, each state in the U.S. has different regulations and “...is frequently either avoided in the public education system or taught with significant bias and a lack of information.” In fact, only 22 of the 50 states incorporate sex education curriculum and in 13 of those 22, it is not obligatory to report scientifically proven information (“The Untruths Surrounding Sex” 2015, 1). This lack of universal and mandated education promotes misconceptions not only about sex, but about basic bodily functions as well. In this group

discussion, nearly every person had a dissimilar experience during their sexual education. This aspect of the conversation unearthed the realization in the class that in the U.S., our knowledge of sex, puberty, and menstruation is often built upon a seventh grader's level of sex education. However, the puberty education that is received has almost become too science-based in contemporary Western programming, eliminating the space for prepubescent girls who are more impacted by understanding the emotional and psychological experience of menses (Rice 2014, 190). The women in Rice's (2014) study in Canada divulged their experiences with puberty education and the lack of education on what to do when you get your first period (190-191). Although they received formal puberty and sex education, the women felt unprepared to manage their menstruation or other puberty changes. They were concerned that their bodies didn't match the anatomical drawings they were shown in class, and therefore increasing their "...discomfort, anxiety, and fear" about menstruation (191). "My years of sex education didn't sink in," explained one woman recalling her trauma of her first period (192). Multiple women discuss knowing what sanitary pads were, but once the moment hit they realized that they had never actually practiced and felt completely unprepared for the application of their knowledge (Rice 2014, 191). One resource that gave some of the women comfort during the preparation for and experience of menarche was the book *Are You There God? It's Me, Margaret* by Judy Blume. The book used a female perspective of the actual experience of menstruation to convey details that are not traditionally discussed in strictly science-based programs. One woman recalls:

I remember reading it, "Oh, that's what my period's going to look like." I felt prepared. It told me what the colour would look like because they talk about blood coming out and you think, bright red. It's not. And the wet feeling, I knew

what to expect. When Margaret in the book gets it, she's so excited, so I was excited when I got it. It was good. (Rice 2014, 193)

These girls felt that their school's education did not ready them to experience menarche as it focused only on the medical terminology and images of the processes. In some Western medical textbooks, menstruation is defined as a "failure to conceive" using "not-neutral" verbiage such as "degenerate," "decline," "weakened," "dying," "losing," and "deteriorate" throughout, indicating that "...unacknowledged cultural attitudes can seep into scientific writing through evaluative words." Thus metaphorically, menstruation biologically and socially means that a woman is not only weak, but that she has failed (Martin 2010, 371). Although science-based puberty courses are essential for girls and boys to understand their upcoming and current bodily processes, experiential preparation and advice accompanied by positive word choice can assist girls by not only be educated about positive puberty and menarche, but to truly comprehend how they are going to feel physically, mentally, and emotionally.

### **A History of Taboos and Secrecy**

Even in ancient mythology, menstruation was either seen as gift or punishment from the gods. Norse mythology tells the story of "...the god *Thor* [who] reached the magic land of enlightenment and eternal life by bathing in a river filled with the menstrual blood of 'Giantesses' or Primal Matriarchs, the 'Powerful Ones.'" Greek mythology told of gods being "dependent on the miraculous power of menstrual blood. It was euphemistically called the 'supernatural red wine' given to the gods by *Mother Hera*." In Hinduism's oldest scriptures called the *Vedas*, menstruation is told through the story of a sin committed by the God *Indra* who

divided this burden to trees, water, fire, and women to regain his freedom. Thus, menstruation in these ancient Hindu scriptures shows that women are ‘punished’ for the sins of a male God (Tan, Haththotuwa, and Fraser 2017, 122). Menstruation and social constructs of women can be analyzed back into the works of Aristotle and Hippocrates. Hippocrates wrote that girls were seen similarly to boys until menarche. The Hippocratic texts symbolically connected menses to internal blood creation as well as traditional Greek animal sacrifice. If the blood of the animal clotted quickly, then good health was present and it heralded the community’s good health. Menstruation was prescribed as a symbolic indicator to a healthy girl (Dammery 2016, 2). Women were to shed blood during menses, childbirth, and “defloration” as men were to shed blood in battle (4). Aristotle believed that women carried “the imperfect seed” that could not be developed into a human without the heroic male sperm, “...for it alone contains the germ of sensitive life... the potentiality of the soul.” He believed that if the sperm was “warm and vigorous” the child would be male, but if the sperm was “cold and therefore less physically vital,” the child would be female (Borysenko 1996, 12). Soranus was a physician who wrote about gynecology after his studies in Alexandria and practice in Rome in the early second century CE who believed that menstruation was an “...excessive matter...” as the role of menstrual blood was “...for childbearing only...” (Dammery 2016, 5). These ancient views of women and menstruation have been argued to persist into contemporary beliefs and cultures around the world (Tan, Haththotuwa, and Fraser 2017, 122).

In the early twentieth century in America, the management of menstruation in America was extremely underdeveloped comparative to modern Western menstruation practices. A culture of myths, rituals, and superstitions surrounding menstruation is particularly deeply embedded in this era of Western menstruation literature. Such myths as, “...warnings to avoid

swimming, over-exertion, and ‘mental shock...’ were common and sex during menstruation was believed to be “unhealthy, unpleasant, and even immoral” (Freidenfelds 2010, 13). Because menstruation was such a taboo topic, girls were often not told about it until after menarche and it came as “...a rude surprise” (Scrimshaw 1978, 43-44). This often led to feelings of fear and hurt that they were not informed before the event occurred. In an interview conducted by Freidenfelds (2010), one woman, the daughter of a homemaker and a Boston shipyard welder, recalls her first period during the early 1950s. One day she saw blood in her underwear and ran to her mother thinking that something was very wrong, only to be met with her mother telling her about menstruation. When asking her mother why she never mentioned this to her before, her mother responded, “I just didn’t know what to tell you. I just don’t know what to say to you” (14). Many girls who did know about menstruation before menarche learned from their classmates, or books such as the previously mentioned Judy Blume’s *Are You There God? It’s Me, Margaret*, rather than their mothers (Rice 2014, 192-193). One woman who reached menarche in the segregated, rural South, remembers keeping it a secret from her mother until she desperately needed assistance managing her cycle. “It took [her] a while to even realize that her mother also menstruated. ‘She always hid her things. She never shared that this happened to her... I didn’t think this was something that moms did’” (Freidenfelds 2010, 15). In Dammery’s (2016) interviews, she found that Italian immigrants to the U.S. had rarely informed their daughters of menstruation at all due to the common cultural beliefs placed on “...female virtue and purity...” which has also been seen in Jewish mothers (33). Often, menarche is accompanied by shock and a common phrase of or similar to ‘what’s wrong with me?’ (228-31). For some girls the experience of menarche is uneventful; however, for many girls, the onset of menses is a



confusing and difficult or often traumatic transition as she attempts to navigate through the adjustment to her daunting new normal (26).

Boys' and men's knowledge of menstruation was even scarcer, primarily being gathered from other boys and men, during sexual encounters, or in marriage- all disorganized forms of communication. Once their first menses occurred, girls had no option but to find out about menstruation, while boys did not have the same biological deadline for information. Even in schools where formal puberty and sex education was present, often boys were not included in the conversation and girls and women took extreme care to keep it from them (Freidenfelds 2010, 17). A man named John Graves, who grew up in the 1940s rural South, was interviewed and discussed how he found out about menstruation:

[He] believed that he first had some idea about the existence of menstruation because he 'heard rumors at school.' He also recalled asking his mother, a teacher, about blood he found in the toilet. His mother explained briefly that a visitor "was probably menstruation. She didn't go into too much detail... She just said, 'She shouldn't have been careless, not flushing the toilet properly.' He learned a lot more, later on, from boys at school. "People would say, 'She's on her period,' you know, if a girl was excitable that day... some of the boys might mention that,' though only to other boys, not directly to girls. He also learned about the pitfalls of having sex with a menstruating girl from his friends, who he guessed were largely making excuses for not being able to convince girls to have sex with them. (Freidenfelds 2010, 17)

He was also told by friends that sex during menstruation was “unsanitary” and that if you did try to have sex with a girl during her period, you could “...[run] into some real difficulty sometimes” because a girl might be “emotional” or “scratch him.” Most of the male language pertaining to menstruation surrounds sexual availability, and Freidenfelds found that this was true in her interviews with men growing up throughout different parts of the century. Women in this study often spoke to their husbands about their menstrual cycles when the topic of sexual availability was discussed and felt that it was appropriate for a husband to know about their menstrual cycle, but not men generally speaking (Freidenfelds 2010, 17).

Among those interviewed, some women discussed their experiences with secrecy from boys and men. The topic was an absolute, unspoken taboo, an embarrassing and shameful experience that should only be shared between close female friends when support was required. Often the girls were told ““Don’t go around the boys. Be careful. Don’t let them know that your period is going on. Don’t discuss it in front of boys”” (Freidenfelds 2010, 18). Confused, the girls were never told why it was such a secret or so dangerous. As a woman in Dammary’s (2016) study recalls, “It’s like she enters a danger zone in a way” (37). Women in this study also did not suddenly self-identify as a sexual being the moment menarche occurred, but their new sexuality was often made clear very quickly with remarks or insinuations by close relatives. These sexuality warnings increased in cultures that valued virginity and purity until marriage (38). Simply, menstruation is meant for women and women only. The secrecy of womanhood was used as a protection of her from dangers as well as the protection of others from her. In Freidenfeld’s (2010) study, women discussed how they would get together with their girlfriends in dark corners and confide in one another, also discussing what boys would say to them about menstruation. One woman explains that the boys would make comments like, ““Oh, she’s

wearing the rag' ... They would just say it... behind the back... you could hear them... And it doesn't have to be *you*, you know.... [Also] boys always would go, "Mmm, something smells bad in here.' Or, 'Something smells fishy.' ... the last thing I wanted to be was to smell fishy" (19). These interactions can increase the shame and fear surrounding the menstrual cycle and these fear are frequent menstruation literature. The common practices of the early twentieth century, and as far back as the Middle Ages in Western culture, were often ones of secrecy and shame, where there was little access to knowledge, discussion, or normalcy surrounding menstruation (20). In the early twentieth century in Australia the question of "What should girls be permitted to know about menstruation?" was common, as the knowledge of their newly sexualized bodies could be dangerous (Dammery 2016, 140). In the twentieth century alone, however, countries such as the U.S. have made immense changes to the way menstruation is seen and handled through intensive social behavior change conducted through 'Progressive' social reform. Some changes included switching from reusable cloth napkins to disposable one for convenience sake as well as introducing a more progressive sexual and menstruation education, arguably triggered by an economically, politically, and socially changing society (Freidenfelds 2010, 1-2). Freidenfelds refers to this period of transformation as American's applying "Progressive values" (2).

The shift in an entire society's beliefs and practices is not something to analyze lightly. This push of "modernizing" menstruation was only possible through a social pressure to adjust personal behavior. In the U.S. case, much of that was pushed by "'...experts' of the Progressive era..." such as doctors, menstrual product companies such as Kotex, and sex educators through advertising and a large increase of availability and access to the products (Freidenfelds 2010, 5). By the 1950s, attitudes had completely changed regarding menstruation and continued to hold

strong through the rest of the century (6). Though generally widely adapted and supported, controversies still arose surrounding this taboo topic. Some included a resistance of older generations to these new practices and mentality, while women of different social classes struggled with the adaptation of tampons. There was generally an agreed notion of convenience, however the use of tampons was traditionally associated with the middle class, urban population and women of upper classes battled with its use and the Progressive beliefs behind them (8).

Over the last 100 years in the United States, there has been a menstrual revolution of sorts. Although important steps have been made to reduce menstrual taboos and increase menstrual hygiene management strategies, sanitary product companies have shaped the modern American's practices to incorporate a dependence on buying their products. Additionally, the sexual and menstrual education tools such as pamphlets, videos, and books "...are too often produced by those with a vested interest in selling certain menstrual products" (Freidenfelds 2010, 10). Additionally these materials often promote "'...openness' about menstruation, [but] contradict themselves by emphasizing the various methods that can be used to most effectively hide bleeding, odor, and other evidence of menstruation" (10-11). Through the modernized technologies "...that would not leak, smell, hurt, cause anxiety, appear unfashionable, or lose efficiency (productive or reproductive) at inopportune moments," companies were able to manufacture products that would give women comfort during their menstruation- something that every woman and girl is searching for during their cycle. These new products were designed to not only make the menstrual blood invisible, but menstruation and women using them invisible as well (2). The social movement surrounding menstruation in U.S. during the twentieth century created both positive and negative outcomes for women. On one hand, women now were able to function in their daily lives through modern technology, and menstruation was finally being

addressed and discussed at governmental, societal, and educational levels. This allowed women to regain some amount of power and function with less fear surrounding their cycle in their daily lives. However, this process also made menstruation nearly invisible in modern U.S. culture.

Although the awareness, access, and education experiences surrounding menstruation in the U.S. were made more “Progressive” during the twentieth century, the stigmas and invisibility of menstruation are still deeply embedded in American culture (Freidenfelds 2010, 5). Bailey’s (1993) study examines teaching menstruation to college students. She asked the students to use the Likert scale and rate their comfort with purchasing specific items at a grocery store such as milk, lettuce, razors, cookies, hemorrhoid medicine, sanitary pads, and tampons. Surprisingly, not only men, but women in her class did not feel comfortable purchasing these sanitary products. When asked if they felt menstruation was a positive, negative, or neutral event, these students concluded that “menstruation is a negative event which should be hidden and not discussed.” Additionally, in the 1981 study conducted by the Tampax Corporation 58% of the respondents believed that women were more emotional while menstruating, 35% believed that menstruation affected the ability of a women to think, and 26% thought that women cannot function as well at work when menstruating (Bailey 1993, 123).

Bailey’s teaching process attempted to destroy taboos surrounding menstruation and create an open dialogue between men and women, teacher and pupil. Her observations showed that the taboo was so strong that student would become “visibly upset” when she would open the products in front them and stick a sanitary pad on her hand or deploy a tampon in between her fingers, but the students would relax when they saw that “...nothing bad happens as a result of making these products public.” Bailey would also leave the sanitary products sitting on her desk during her lectures, periodically touching them as if they were any other classroom object in

order to show her students that these are normal objects and that they do not themselves carry the stigma. Sanitary products are objects that “...are merely technological devices, no more imbued with shame than a pencil or water glass” (Bailey 1993, 126). The reason that Bailey chose to use the topic of menstruation was because it is “...ideally suited as an example of women’s experience because what appears to be a biological process is imbued with a great deal of social meaning” (128). Women who participated in this study regained a form of freedom, as they were suddenly able to discuss menstruation and products to manage it as well as “...reclaiming the biological differences that historically have been used against women” (127, 122).

Across the social sciences, the topics of gender and menstruation are often dominated by the male perspective or, on the completely opposite end, excludes men’s perspective entirely from the conversation. To ensure a balanced and inclusive narrative, a “...complementary but equal...” stance should be taken (Bailey 1993, 121). This method includes men in the conversation of menstruation by including their experiences too and reducing the amount of misconceptions and increasing the availability of information and conversation. Creating a safe space for both women and men to discuss menstruation together allows the opportunity for women to share their experiences and men to understand them, creating a reduction in stigma and an increase of positive experiences surrounding menstruation. Bailey’s body-positive and stigma-reducing techniques can be easily modelled in most settings globally. Destigmatizing the products that are used to manage menstruation assists significantly in destigmatizing the actual biological process. Menstruation is a reoccurring event that happens to most women for a significant portion of their lives; however, it additionally represents “...an example of diversity because it varies historically and cross-culturally in its social *and* physical manifestations” (122).

## **Views of Menstruation in the UK and Beyond**

Thurén (1994) stated that it was a “fact” within European culture that “...menstruation is *not* celebrated or even talked about...” In the Mediterranean, “...menstruation has above all been interpreted as the opposite of purity...” and a woman must entirely conceal her menstrual status. Thurén also argues that in the Mediterranean, and particularly in Spain, menstruation is traditionally seen as the ability to enter motherhood. Even in 1994 when the article was written, Thurén argued that “Spanish women ha[d] more power and prestige as mothers than in any other social role.” This presents a conflicting cultural dichotomy: motherhood as power and menstruation as shameful, themes that may still be present today (217). In a contemporary UK context, Plan International discovered “...that 64% of women in the UK would feel uncomfortable discussing their period with their male friends.” Because of menstrual stigma and poor menstruation education, UK women are likely to delay “...seeking help for gynecological care, such as for fibroids and endometriosis” (“Time to talk” 2017, 2264). Plan International (2017) also discovered that 44% of women felt uncomfortable as girls discussing menstruation with female teachers and 75% felt uncomfortable discussing it with male teachers (see under “But we’re shying away from talking about periods”). In a study in the Lothian region of Scotland by Santer, Wyke, and Warner (2008), women’s menstruation management and symptoms were analyzed with a primary focus on heavy menstruation and menstrual pain. The pervasiveness of heavy menstrual bleeding has been measured between 35%-52% of reproductive-aged women. Menstrual-related pain has been reported at different prevalence levels. A study in New Zealand found that 53% of women aged 16-54 experienced menstrual pain and 12% of women reported menstrual-related absenteeism from school or work due to pain. Thirty nine percent of women in Scotland aged 25-44 reported either experiencing heavy

menstrual cycles or severe menstrual pain. Santer, Wyke, and Warner found that although women had spoken to other women about their personal menstruation, almost exclusively about changes or pain management and seldom included discussions of increased blood loss. Women only sought formal health assistance to manage or understand their menstrual symptoms if their attempts to manage it themselves had failed or if they happened to be seeing a health practitioner for another purpose. Their research observed that women saw menstruation, “...even when problematic, as ‘part and parcel’ of female life and not a legitimate reason for adopting illness behavior.” This can be detrimental to a woman’s health as the research suggested that even women who experienced debilitating symptoms do not have access to education, advice, or treatments. Santer, Wyke, and Warner propose an educational strategy to disseminate information through “...women’s magazines, health-related web-sites and information leaflets...” to promote self-care and healthy symptom management behaviors (276). An Australian study noted that although attitudes towards menstruation have progressed from feelings of trauma, it is still important to understand the menarcheal experience psychologically and culturally even if reactions are less intense. The researcher explains that this decrease in the experience of menarcheal trauma is likely due to better education prior to a girl’s first menses (Moore 1995, 88). However, studies have shown that even if girls are receiving more information about menstruation, their education might be limited or incorrect. Many girls learn about menstruation from their mothers, who may not have enough or correct information. This process perpetuates menstrual lore and myths that may be detrimental to perceptions of menstruation. (89). My proposed nine components to a holistic MHM are primarily geared for low and middle-income countries (LMIC) and settings in the Global South. However, the above section highlights that there is room for holistic improvement in Western contexts as well.



## **Menstruation in Non-Western Societies: Sacred or Stigmatized**

Menstruation in non-Western cultures is predominantly viewed in two ways: either a positive or negative light, both with a plethora of cultural variety. This section will first explore some cultures who believe menstruation is sacred, and subsequently examine cultures who view menstruation as a “polluted” state of being, a topic the renowned anthropologist Mary Douglas (1969) found interest in during her African fieldwork. Douglas posed menstruation as an anomaly for a woman who is not sick or injured but who bleeds in good health (Douglas 1969, throughout). In *Anthropology and Menstruation*, Kennaway (1957) describes Bernard Lelong and Jean-Luc Javal’s fieldwork in Bolivia and Peru where “...the extreme limits of indifference and of abhorrence” were observed. Their male interpreter strongly avoided answering questions on menstruation, showing that they “...had touched on a subject that offended his delicacy.” When they were finally able to ask the women about their menstruation and how they manage it, they discovered that the women simply let the blood run down their legs and wiped it with their skirts. Kennaway also writes of the orthodox Jewish ceremony where women are required to cut their nails before their bath (*Mikveh*), where she must also ensure the burning of the nail scraps as to not inflict danger on her husband or another man (Kennaway 1957, 645).

Contrastingly, in some cultures such as the Cherokee, the Beng, the Plains Oglala, and the Yurok, menstruation has been recorded to be venerated in either the entire culture, in sub-communities, or by either men or women within the culture. For example, the Beng women of the Ivory Coast must not step into the forest during their menstrual cycle unless to defecate. She cannot work the fields, collect water, chop down wood for the fire, or touch a corpse, and men are forbidden from eating food prepared by a menstruating woman. Now this may appear as a

ritual performed due to woman's "uncleanliness" during her period, but upon further investigation Gottlieb discovered that they viewed menses in a positive light. A Master of the Earth told her that there is power in menstrual blood as it carries a potential human being. "It works like a tree. Before bearing fruit, a tree must first bear flowers. Menstrual blood is like the flower: it must emerge before the fruit- the baby- can be born. Childbirth is like a tree finally bearing its fruit, which the woman then gathers" (Gottlieb 1982, 36). The Apache of North America traditionally partake in an elaborate ceremony for girls once they reach menarche, where the wider community gather to acknowledge the sacred transition to womanhood. The girl adorns symbolic items such as two eagle feathers to represent strength are fastened to her hair, strands of black and white beads draped around her neck representing womanhood, and pollen painted on her face to represent life and renewal (Dammery 2016, ix). The girl then participates in four days and four nights of rituals that guide her into womanhood through the acquisition of knowledge and power, balancing her duality of both powers of healing and destruction (ix-x). The community and the girl celebrate her biological achievement of reaching the status of a woman (x).

In Sri Lanka the Buddhists and Catholics have different responses to menstruation. The Buddhists believe that "...menarche and menstruation are held to evidence women's' *threat* to cosmic purity and, hence, to society." Opposingly, the Catholics of Sri Lanka believe that "...they are sign of women's' *vulnerability* to threats posed by cosmos and society." They also point out that their rituals are very similar culturally to one another, but the symbolism is very different which suggests different social status distinctions. Buckley and Gottlieb (1988) go on to suggest a distinction that must be made: "We need to ask, for instance, if a taboo is violated, will

the menstruating woman harm someone else or herself? If the former, a danger to others is indicated; if the latter, the *vulnerability* of the woman” (10).

### **Menstrual Huts and Chaupadi**

Another common theme across anthropological literature surrounding menstruation is the practice of menstrual isolation, commonly called menstrual huts. These huts or areas of isolation are traditionally ritualized worldwide and are commonly seen by non-practitioners as oppressive and inhumane. In Nepal, this event is referred to as chaupadi and has received global attention for its negative view of women during their cycle. Originally it is believed that centuries ago in Nepal, chaupadi was created to alleviate women of their daily labor and household chores and to allow them a break (Rustad 2013, 1). In contemporary Nepal, this is not typically the case. Although outlawed by the Nepalese government in 2005, communities in remote, mountainous regions of the Himalayas continue the practice ("Chaupadi in The Far-West" 2011, 3). In the Accham district alone, 95% of women practice chaupadi. Due to menstrual lore, Hindu women of all castes in western Nepal are required to practice the monthly ritual that forbids them to enter into homes, kitchens, and places of worship, touching other people, livestock, plants, most food, and dairy animals or, according to the practice, menstruating women are also forbidden to consume the milk of livestock during their entire cycle. During this time they must also reside in separate quarters, often in cow sheds, caves, or mud huts, and must use a different water tap for bathing, washing, and as to not “contaminate” the communal one or cause it to dry up out of superstition ("Chaupadi in The Far-West" 2011, 1; Rustad 2013, 1). Additionally, they are not permitted to be involved in religious or cultural ceremonies or festivals during menstruation ("Chaupadi in The Far-West" 2011, 1). One festival women are supposed to observe is *Rishi*

*Panchami* that occurs annually, requiring women to “...fast and pray in order to purify themselves or to compensate for any inappropriate behavior during menstruation” (2). Women often willingly participate in chaupadi and the associated practices because of their spiritual and cultural beliefs, in fear that violating these regulations will bring them, and even their family or entire community, harm.

Chaupadi can create cultural, social, and psychological impacts on women. Because the regions where the custom is practiced are some of the most remote regions in the world and because chaupadi is technically illegal, it is challenging or impossible to obtain significant statistics. What *is* known, however, is that women die every year during the practice from a variety of factors such as exposure to the elements, snake bites, scorpion stings, or animal attacks all while in the chaupadi sheds. Often, women reside in the cattle sheds, or a *chaupadi goth* during menstruation which are often unsanitary and unsafe from exposure. They are banished from consuming milk or ghee, and are frequently permitted to eat only flatbread with salt. The lack of nutrition caused by their poor diet combined with the physical labor of collecting firewood and grasses as well as digging, can create dangerous physical health problems and leave them vulnerable to diarrhea, pneumonia, and respiratory diseases. In January of 2010, an eleven year old from the Accham district of Nepal died during chaupadi due to dehydration and diarrhea when her family refused, out of fear of touching her during her menstrual cycle, to bring her to a medical facility ("Chaupadi in The Far-West" 2011, 2). This type of death is not uncommon in western Nepal.

Chaupadi huts are also traditionally utilized during and after childbirth, as 89% of Nepali mothers deliver their children at home ("Chaupadi in The Far-West" 2011, 2). In Nepal the infant mortality rate (IMR) is high, with the country's statistic being 48 deaths out of every 1,000

children (Ramesh and Sawangdee 2011, 1). These rates are even higher in illiterate women with an IMR of 56/1,000 as well as women not involved in health care decisions with an IMR of 54/1,000. To put this statistic in perspective, in the same year, 2011, the United States averaged 6.05 infant deaths per 1,000 births (MacDorman et al. 2013, 1). Furthermore, Ramesh and Sawangdee's (2011) study showed that children from illiterate women who had a 32% higher chance of dying in infancy than literate women, and that women who did not have a say about healthcare decision-making experienced a 25% higher infant mortality rate compared to ones who were involved (1). Nepal's maternal mortality rate (MMR) is also high compared to other developing countries, and women who participate in chaupadi are put at a higher risk of experiencing both maternal and infant morbidity. Shockingly, in Nepal nearly 60% of women give birth while there is either only family members present or while alone, which likely contributes to Nepal's IMR and MMR ("Chaupadi in The Far-West" 2011, 2).

Health and exposure are not the only issues that affect women during chaupadi. It is common for women and girls to be verbally or sexually harassed during chaupadi by men and boys (Rustad 2013, 1). An NGO worker in Dadeldhura reported that drunk men were entering the chaupadi sheds and abusing the women, but that intense stigma prevented women from reporting the abuse to anyone. In some regions, there is a belief that *Sarswoti*, the Goddess of Education, will anger if girls or women participate in educational practices such as reading, writing, and touching books during menstruation. Obviously, this prevents girls from attending school during their cycle and "...has the potential to increase the gap between girls and boys in education and increase discrimination over the long term" ("Chaupadi in The Far-West" 2011, 2). Psychologically, chaupadi can cause damage to girls' beliefs of themselves and women generally. Girls grow up believing that if they do not strictly follow the guidelines of chaupadi,

they could cause their entire community harm. If crops die, someone falls ill, or something negative happens in the community, the women and girls are often looked at as the culprits. Girls are essentially taught that they are polluted and dangerous, resulting in insecurity, guilt, humiliation, sadness, and depression.

Presently, chaupadi is seeing somewhat of a transformation. Because of the banishment of the practice by the government and having development professionals, NGOs, and Non Profits increasingly active in these regions, the practice is becoming milder in some locations (Rustad 2013, 1). Positive statistics surrounding the harshest aspects of chaupadi are increasing. Girls are increasingly attending school during their menses. The changes are still conservative and cautious, as women still hesitate to participate in religious ceremonies or rituals or to cook and prepare food in fear of religious backlash from the gods and goddesses. In 2008 the Nepalese government took further action to eradicate chaupadi by setting guidelines that each of the districts were supposed to address and deploy, but unfortunately the required committees have not been created in many of the districts. The Nepalese government has addressed the practice of chaupadi at the governmental level and the Interim Constitution of Nepal 2007 addresses the serious concerns of bringing an end to gender based violence (GBV), equality and social justice as a human right, and the defense against caste discrimination ("Chaupadi In The Far-West" 2011, 3). In some areas women now have improved shelters, heat, and sources of nutrition (4).

Although some women who are required to practice this ritual in their own cultures find it to be inhumane, menstrual huts are sometimes seen neutrally or positively. The Saramaka of Surinam "...mildly resent their mandatory seclusion yet maintain the practice, although others [in] nearby [communities] abandoned it, because they also find this ritual contribution to communal welfare somehow fulfilling." Mogmog Islanders are reported to greatly enjoy their

miniature vacations that give the women time away from their duties and responsibilities, and where they can have time to weave. This hut is seen as their own “community center for women” (Buckley and Gottlieb 1988, 12). Many menstruation huts in communities globally, however, can be less than sanitary and have made women feel oppressed and fearful, or even feel that their lives are threatened by taking part. Because chaupadi often conflicts with the Millennium Development Goals (MDG) as well as the Sustainable Development Goals (SDG), chaupadi, and menstrual hygiene management in general, are topics of great importance. However, the total abolishment of the practice is challenging. This ritual is practiced in very religious Hindu communities in remote areas who have been participating for centuries (Rustad 2013, 1). If the practice is simply abolished without a holistic menstrual hygiene management program instituted, the stigmas surrounding women during menstruation and childbirth will likely still remain and could be socially and psychologically detrimental to the women. There is also significant resistance from older generations of Hindu Nepalese in these regions to rid their communities of chaupadi, as they believe it puts their family and community at risk of contamination. Chaupadi and menstrual huts are complicated and stigma-rich practices that are often an extreme example of ways non-Western cultures handle menstruation, but it is imperative that it be included in a literature review of menstrual hygiene management.

### **Menstruation in Contemporary Taiwan**

In Furth and Ch'en's (1992) publication, they discuss the complexities of menstruation in Taiwan using three frameworks: biomedicine, Buddhism, and traditional Chinese medicine (27). The respondents in this survey were from two age groups: 26 women between the ages of 18-25 who were unmarried, and 28 women from 45 years old to the mid-70s who were past

childbearing age. Taiwan is interestingly dualistic in terms of modernity and traditional beliefs and practices as well as the belief of menstruation as a polluted state and the biomedical model of menstruation. The use of traditional Chinese medicine, in this case typically herbal tonics, are used to manage menstruation. Although this study cannot make substantive, general claims for Taiwan's population due to its 54 interview sample size, it gives an insightful perspective into the personal experiences of women in this uniquely situated, medically pluralistic culture. The experiences and realities of these women are presented as an example of scholarship from this region regarding the perceptions and practices of menstruation in one Taiwanese community. Often, their beliefs and practices showed that these women could utilize aspects of each medical framework to coexist in their daily lives. In one sense both the Western biomedical framework and the traditional Chinese medical believe that menstruation is a crucial aspect to a women's health. However, these Taiwanese women demonstrated a culture of menstruation as polluted, even using the terms "dirt" and "poison" referring to menstrual blood. Interestingly, there is also a notion that menstruation is positive as it allows women to bare children while also being a "...female bodily weakness" (28). The primary Chinese belief is seeing "all body refuse as being dirty because it was rejected by the body and ejected from the body by natural and normal systems" (Tan, Haththotuwa, and Fraser 2017, 124).

Traditional texts from both the Ming and Ch'ing periods of 1368-1911 in China teach that each human is born with "primal *ch'i*" that is bestowed upon the infant at birth. This *ch'i* gathers in the human body until puberty and is then released during ejaculation for men and menstruation, childbirth, and lactation in women. The way to restore your primal *ch'i* is by bettering your wellbeing through "...metabolic processes... [such as] eating, breathing, activity, and rest," and the cyclical process begins again (Furth and Ch'en 1992, 29). In this belief, women



represent the *yin* blood and men represent the *yang* essence (Dammery 2016, 8). Women also are at a disadvantage as the loss of their primal *ch'i* is exacerbated through these bodily processes of menstruation, lactation, and childbirth and can be challenging to revive. Traditional Chinese medicine further assess the qualities of menstrual blood to understand the health of a women. Anything out of the ordinary such as irregular cycle lengths as well as the consistency, color, or amount of the blood indicates disruption and dis-ease within the female body (Furth and Ch'en 1992, 30). Irregular menstruation has also been linked to higher likelihoods of hay fever and asthma in a study conducted northern European countries ("Independent Nurse" 2005). A similar study found that overweight women under 45 years old with irregular cycles in northern Europe had a 61% increased risk of developing asthma ("Study Reveals Greater Risk" 2002, under Full Text). These studies may support the traditional Chinese belief that menstrual irregularity is an indicator of other medical issues. The predictability of the menstrual cycle is of the utmost importance in Chinese traditional and historic literature sources, and is the primary signifier used to understand general disruption of the body in contemporary biomedical literature as well (Martin 2010, 368). If a woman is experiencing pain or what are biomedically seen as side-effects of menstruation (cramps, heightened emotions, etc.), she is simply out of balance and needs to work with the traditional Chinese doctor to restore it. The female *yin* is seen as a cold element and often herbs or health strategies will focus on heating a woman to create new blood a deactivate stagnation (Furth and Ch'en 1992, 30). This balance observed in the Chinese concepts of *yin* and *yang* are similar to the concepts of "...heat and cold, wetness and dryness, blood and fire, kinship unity and sex, or 'rawness' and the state of being 'cooked'..." used by Knight (1985) with evidence from California, Amazonia, and northern and north-western Australia. These forces, Knight proposes, are the opposites that "make up the structure of the world" (671).

The Chinese medical books from both the Ming and Ch'ing periods of 1368-1911 proposed that menstruation was not simply just an excellent indicator of a woman's health, but also of her fertility and thus began to track the menstrual cycle to understand it (Dammery 2016, 23). They referred to this as the process when "old blood had been dispelled and new blood was beginning to grow" (Furth and Ch'en 1992, 30).

Traditional Chinese medicine saw menstruation as both positive in terms of fertility and negative as it also makes women weaker (Furth and Ch'en 1992, 31). Moreover as men age their wisdom and prestige increases, whereas when women age they lose their functionality as producers and therefore lose their purpose and become obsolete (Borysenko 1996, 4). Traditional beliefs dictated that if someone came into contact with menstrual blood than they could not "...associate with the gods." In Chinese literature there is evidence that women were prohibited from entering religious temples, touching religious leaders, or partaking in religious ceremonies such as weddings during menses. Post-partum, women are expected to remain in isolation for one month and refrain from sexual intercourse in order to re-purify themselves from their pollution as well as purify the infant from its pollution after being in contact with impure blood. This ritual ensures that the gods do not see them in their polluted state. The stigmas of impurity during menstruation, childbirth, and lactation empty women of power. The only power that women existing in these cultural beliefs have is to spread their pollution and infect those they take issue with, essentially giving them the power and choice to disobey their suppression. Although less frequently practiced today, this ritual and these notions of impurity are very much alive in the memories of those who practiced them. According to Furth and Ch'en (1992), *pai pai*, the local festival and rituals showing devotion to the gods, sustain these historic views of menstruation as polluted. Now, traditional Chinese doctors have created remedies that purify

women and children so they are not forced to remain in isolation. This could appear to let women regain some amount of power, but Furth and Ch'en believe it fortifies the notion of weakness and dependence of women on men, as men are traditionally the doctors in traditional Chinese medicine. Through the modern education systems instituted in Taiwan, girls are now adding the biomedical model to these traditional beliefs (Furth and Ch'en 1992, 31). Schools are using this model to educate girls using the information that menstruation is a normal, biological process that happens to girls during puberty through menopause and is often accompanied by other symptoms such as heightened emotions and pain (31-32). Women surveyed for the study were asked to rank their beliefs on menstrual blood in the following table:

<b>Statements about menstrual blood in rank order</b>	<b>Respondents (N=54)</b>	
	<b>N</b>	<b>%</b>
It is unclean	45	83
It is superfluous	38	70
It is shameful	37	69
It is like the blood of birth	23	43
It is the blood that makes the baby	21	39
It is precious	12	22
It is poison ( <i>tu, tok</i> )	9	17
It can harm others	6	11

Figure 1: “The Nature of Menstrual Blood,” Women’s beliefs in Taiwan (data adapted by Furth and Ch'en 1992, 35).

The majority of women in this survey ranked menstrual blood as deeply negative; however, they ranked “poison” as very low on the scale. Traditionally, this term is used to signify that menstruation is a disease in Chinese culture. So although there are still many negative perceptions of menstrual blood observed in this table, most of the women “...expressed

[it] using the rhetoric of health or cleanliness...” as opposed to “...that of a woman’s polluting nature.” When asked what precautions women believed they should take and which ones they realistically do, women identified recommended and practiced precautions and ranked their importance with the first being the most important and the last being the least: “avoid gods, avoid tub baths, avoid heavy exercise, take ‘supports,’ avoid iced foods, avoid ‘cold/raw’ foods, don’t wash hair, avoid ‘heating’ foods, keep warm, avoid anger, avoid weddings, avoid pregnant women” (Furth and Ch'en 1992, 35). Because of their use of rankings as well as the number of respondents who recommended and practiced, these women believed in the importance of avoiding the gods and thus religious spaces. Furth and Ch'en saw some vagueness on whether the beliefs surrounding non-dietary safety measures were a result of Western or traditional beliefs, as the leading Western textbook on health and modern science being taught at the time of the study told girls, “...without explanation, the following menstrual precautions: keep clean, avoid baths, cold water, and salt water; avoid violent exercise; and keep calm and cheerful.” They also remark that the popular press expresses the same notions, meaning that these sanitary beliefs could derive from either Western or traditional Chinese beliefs. Fifty of the women believed that it was smart to take preventative medical measures during menstruation, but were flexible and made personal choices regarding their health (37).

In conclusion, this study found that modern education was decreasing the notion of pollution among the younger generation. Furth and Ch'en (1992) reported that women from every sociological group “...identified some preferred practices positively as empowering them to overcome disadvantage to attain health and decency.” These women also “...revealed their sense of agency by seeing themselves as making choices based on individual circumstances” (Furth and Ch'en 1992, 28). This study used the pluralistic medical frameworks operating in

Taiwan to understand how they shape the views on menstruation. Furth and Ch'en found that women overarchingly showed a lesser sense of gender bias and increased sense of solutions, generating an increased sense of self-worth and body positivity primarily due to their choices and options for menstrual management. As Furth and Ch'en phrase it, however, "...menstrual and postpartum blood continue to be the most common and widespread sources of ritual pollution in folk belief" (37).

### **Menstruation Research in Sub-Saharan Africa**

This section will transition the conversation from the observation and recording of menstrual beliefs and practices to menstrual hygiene management research and case studies in sub-Saharan Africa. As seen elsewhere in this paper, significant menstrual lore and practices to prevent the menstruating woman from contaminating others have been observed in Ethiopia, Uganda, South-Sudan, Tanzania, and Zimbabwe. Through interviews conducted with men, women, and schoolgirls, Tamiru et al. (2015) discovered in some of these above five countries studied that women were required to separate themselves for a week in separate homes until they regained their status as "clean." Similar to the Nepal example, menstruating girls in the Sengerema, Mufindi, and Chato districts of Tanzania and the Masvingo district of Zimbabwe were not "...allowed to touch water sources and animals, cook, wash dishes, touch plants, or pass through the planted farms during menstruation because it is believed that they will pollute them." In South Sudan, girls were not permitted to bathe or use the latrine until the end of her menstrual cycle (Tamiru et al. 2015, 95). In the Kalangala district of Uganda, women and girls are "...made to sit on a pile of sand for absorption, leaving her immobile for 3 to 4 days" (FAWE 2005).

Menstruation is stigmatized throughout much of sub-Saharan Africa and the following studies will analyze the strategies used by girls in the respective locations.

Scorgie et al.'s (2015) article called "'Bitten By Shyness': Menstrual Hygiene Management, Sanitation, and the Quest for Privacy in South Africa," published in *Medical Anthropology* and funded by the Bill and Melinda Gates Foundation, focuses on the low-income setting of Durban, South Africa and the views of women surrounding menstruation. This study used the Photovoice method and participatory workshops to understand menstrual hygiene behaviors in the region. Scorgie et al. provide a great transition from the observations of menstruation in non-Western societies to how the field of menstrual hygiene management uses their observations to plan and execute strategies to mitigate these issues. The opening line of the article is a call for "...cost effective, convenient, and sustainable solutions..." to "...meet the menstrual hygiene needs of girls and women in low-income settings." They also add that "...interest in this area among researchers and advocates in the development and education sectors is growing" (Scorgie et al. 2015, 161). This study's primary focus was on access to menstrual hygiene products (MHPs) and sanitation. The apartheid had significant impacts on South Africa's poor with an accumulation of issues neglected during the time including poorly resources toilet facilities, substandard facility maintenance, and lack of clean water access. Lack of clean water not only prevents handwashing, which in turn can cause health issues, but also indicates a scarcity of drinking water (162-63). Most of the women recall menarche with distress as they had not been informed of it prior to its occurrence and indicated that menstruation had then been explained to them by "...grandmothers, sisters, mothers, aunts, or female teachers." These women also insinuated a stigmatized relationship around mother-daughter communication as women remarked with phrases like, "You know how mothers are. They just don't explain a

lot.” Also observed was the immediate caution for girls to disassociate themselves with boys, but with no explanation. Women also believed that maintaining increased hygiene was essential, and they should clean themselves in the morning, during the day, and at night before bed.

Menstruation education in schools was somewhat present and primarily discussed MHPs and handwashing (166). This study found that most of the girls were almost exclusively using disposable sanitary products, contrary to what is reported elsewhere in Africa (170). Menstrual taboos and stigmas of menstrual blood as pollution were also highly visible and impacted women and their practices primarily seen through shame and concealment. This study overarchingly emphasized the importance of dignity that these women desired through privately managing their menses.

Adinma and Adinma (2008) conducted a study of 550 Nigerian secondary school girls in southeastern part of the country to understand the current practices and perceptions of the girls. The study sought to understand what girls in Onitsha, an urban city, felt, experienced, and desired so that the researchers could offer educated suggestions. The large sample size and both quantitative and qualitative methods provide this study with a dynamic understanding of their target population. First, Adinma and Adinma sought to discover the perceived characteristics of menstruation and found the information from Table 2 (2008, 77). These findings are valuable in understanding what percentage of girls are afflicted by what side effects during their menses, and also who they predominately these issues with. The girls in their study primarily identified discomfort and pain followed by depression as their top three medical concerns caused by their menstrual cycles. It also shows that overwhelmingly mothers were used as confidants. When conducting baseline research on menstruation practices, it is essential to understand both of these topics from subjects in order to provide solutions targeted to their needs.

Characteristics	N	%
<b>Medical Problems (N=550)</b>		
Abdominal pain	364	66.2
Waist pain	212	68.5
Depression	134	24.4
Vomiting	38	6.9
Anorexia	10	1.8
Weakness	8	1.5
Increased appetite	6	1.1
Multiple problems	252	45.8
<b>Persons with whom menstrual problems were most discussed (N=401)</b>		
Mothers	189	47.1
Friends	93	23.3
Elder female siblings	88	21.9
Aunts	13	3.3
Health professionals	13	3.3
Boyfriends	3	0.7
Teachers	2	0.4

Figure 2: “Distribution by medical problems associated with menstruation, and persons with whom problems were most discussed” (data adapted by Adinma and Adinma 2008, 77).

From this table it is understood that the majority of the girls felt physical pain during their menstrual cycle, showing that access to pain mitigation solutions are important to this group. This form of dysmenorrhea is commonly found in both Western and non-Western research studies (78-79). Additionally, depression is high on the list of medical problems and represents the psychological strains attributed to menstruation. The reporting of girls experiencing gastrointestinal issues are also common in menstruation research (79). Adinma and Adinma also looked at menstrual practices in this region as seen in Table 3.



Practices	N	%
<b>Menstrual absorbents used (N=550)</b>		
Toilet tissue paper	227	41.3
Sanitary pad	180	32.7
Clothes	79	14.4
Tampon	5	0.9
Multiple materials	59	10.7
<b>Remedies for menstrual pain (N=180)</b>		
Analgesics only	136	75.6
Alcohol only	6	3.3
Analgesics and alcohol	7	3.9
Non analgesic medication (e.g. antacid, anti-spasmodic)	13	7.2
Hormonal medication (oral contraceptives)	0	0.0
Spices (garlic, bitter kola)	8	4.5
Salted water	6	3.3
Abdominal hot water compress	4	2.2

Figure 3: “Distribution by practices during menstruation” (data adapted by Adinma and Adinma 2008, 78).

In the second part of the table, the remedies for menstrual symptoms show that girls primarily use analgesics followed by non-analgesics. In the first part of the table the tools to absorb menstrual blood are counted and the highest number, 41.3%, of girls are using toilet paper and 14.4% are using clothes, both concerning statistics. Toilet tissue and clothes are not sanitary solutions for menstruation as they “...may harbour infection agents which often thrive under blood culture medium, and may therefore constitute a source of pelvic infection” (80). Adinma and Adinma also observed that girls had inconsistent or often times false knowledge of reproductive biology and girls often believed that menstrual blood was coming from other internal organs or that it was occurring due a “curse from god, sin, [or] disease.” It was also common for the girls to connect menstruation to other negative symptoms occurring in their

bodies, potentially indicating the manifestation of cultural and religious stigmas surrounding menstruation (75).

### **Menstruation Past and Present**

Observed in these examples of global menstrual practices, menstruation is either acknowledged as a community celebration or a private experience, the former with generally more positive perspectives on menstruation and the latter with stigmatized perceptions of menstruation (Dammery 2016, 1). The manner in which menses is dealt with by a society directly influences a girl's perspectives of herself as well as other's perspectives of her. Women are expected to exhibit specific cultural functions, ceremonies, or practices, both positive and negative, during their menstruation. All of these rituals are argued to attempt by men to "...control the menarcheal body..." as girls and women are believed to hold forms of sacred or destructive power during menstruation (22). Contemporary practices aim to reshape menstruation as purely biological, however symbolic stigmas remain cultural intact though often hidden. Symbolically in a variety of contexts, menstruation is intertwined with weakness. Even a fierce, strong, or powerful woman will succumb to her body's "weakness" without contraceptive interventions (Martin 2010, 367). Regardless of context, there are overwhelmingly strong social and cultural elements to menstruation. For this reason, observing menstruation from a critical medical anthropological lens allows the researcher understand the experience of menstruation in various settings. The job of an anthropologist is to observe, analyze, and report findings from the stories and narratives told by the community members to understand their reality past and present (Garro and Mattingly 2000, 4). Although most girls will go through

menarche, their experiences are entirely unique due to a combination of influential social, cultural, physical, or economic contributors.

## **CHAPTER THREE: UGANDA AND MENSTRUAL HYGIENE MANAGEMENT**

### **Understanding Uganda: A Unique Lens to Menstrual Hygiene Management**

Uganda is an epicenter of international development and global public health and has been of interest to these groups for a variety of reasons. The country has experienced a challenging past politically and socially, rippling into the economy and the health of the people, but have made strategic plans and international partnerships to reshape its standing in Africa and beyond. One of these is the monetary investment in health strategy development by international and national organizations, primarily in low-income countries, with a goal of improving health outcomes of the target populations through targeted research and implementing innovative solutions. The Fogarty International Center of the United States and National Institutes of Health consider Uganda to be an “...extreme case...” as a country because they have been supporting the government so significantly with health capacity building since 1988 (Bennett et al. 2013, 2).

Idi Amin, the violent, corrupt dictator who took control over Uganda in 1971, was forced out of presidency in 1979. However, the country was plagued by civil wars through the 1990s (Wendo 2003, 716). The Lord’s Resistance Army (LRA) was one of the most hostile groups involved, abducting young boys and forcing them to fight in warfare (Vindevoegel et al. 2012, 757). After Amin’s regime ended and the economy had collapsed, many families felt the burden of high taxes and the costs of education as the parents and students carried the majority of the costs for school. After 1992’s Government White Paper on education made the suggestion to cover half of the cost of education, the burden lightened. Unfortunately, it still required even significantly low-income families to hold 50% of their children’s education costs. The increased taxes from the country’s Structural Adjustment Programs (SAPs) from 1981-1984 and 1987-1996 forced citizens to reshape their family budgets for education, as education had been free or

subsidized pre-SAPs. This reprioritization caused a country-wide decrease in enrollment, an increase in dropout rates, and many school closures due to a governmental funding decline and the lack of student enrollment, consequently impacting the quality of education the students were all receiving compared to the past decades (Limoncelli 2010, 21- 22).

This collective decrease had significant ripple effects that negatively impacted education for girls during this period. Almost forty one percent of parents preferred to send their sons to school as opposed to their daughters, 31.9% would send both their boys and girls to school regardless of the economic challenges, and only 3.4% would prioritize their daughters because they either only had daughters or their sons were not of education age. Pre-SAPs, girls only comprised 30% of the student body in junior secondary school and 20% in upper secondary school. Boys were to grow up, help support the family, and inherit their parent's property, while girls were assumed to get married and pregnant. If boys were to enter marriage as a school-aged child, they would still remain in school. While, if girls were to marry as a school-aged child she may even work to help her husband afford his education. All of the cultural biases that existed in Uganda were not only amplified during the SAPs, as Limoncelli indicates, indeed they were acted upon due to economic scarcity (Limoncelli 2010, 21). As demonstrated in Limoncelli's writing, the SAPs had significant negative effects on girls and women throughout the country. These SAP policies induced global criticism for Ugandan women's rights and organizations such as IMF and the World Bank and others with debt-forgiveness programs aiming to steer countries towards the Millennium Development Goals, economic expansion, and poverty alleviation (22).

On August 19, 2003 the UK Department for International Development (DFID) teamed up with the World Bank to ignite an improved sanitation plan for Uganda. The Ugandan government was to take charge of the implementation and the Water and Sanitation Programme

of the World Bank was to provide logistics and support. This project placed Uganda under the global eye of the development sector. Paul Luyima, the assistant commissioner for environmental health during that period, acknowledged that the project was aimed to provide solutions to people in rural populations. In Uganda at the time, greater than 80% of the outpatient attendance could be attributed to poor sanitation. They also guessed that only 56% of household contained a latrine, the primary form of bathroom facility in the country, and the prevalence varied from as low as 4% in remote regions to as high as 80% in urban settings. Those who do not own a latrine either resort to using a neighbor's or practicing open defecation. Because of these shockingly low numbers of latrine use, Ugandans suffer high rates of cholera, dysentery, and gastrointestinal worms. Although these 2003 rates appear shocking, Uganda reportedly experienced latrine availability rates of as low as 23% in the early 1980s, one of the worst in all of Africa. By the time DFID and the World Bank had stepped in, the numbers had more than doubled. Even more surprising is that in the 1970s Uganda had one of the highest sanitation scores with latrine usage as high as 90%, according to health ministry records (Wendo 2003, 716). To decline from 90% to 23% latrine use in a decade is devastating, but in that time Idi Amin had taken power over Uganda.

A DFID and World Bank partnership aimed to change hygiene behaviors on both macro and micro scales, providing education and access to people throughout the country over a two-year span. Jim Muhwezi, The Ugandan Minister of Health in 2003, was quoted that, "Poor sanitation is associated with ill health. Ill health leads to low productivity, and where there is low productivity there will always be poverty." He continues, "Government and individual families spend colossal sums of money on treatment of diseased which would otherwise be avoided if we improved the living conditions of our populations." Through the improvement of their local

sanitation systems, the stakeholders partnered to make progress with poverty eradication and overall sanitation improvement (Wendo 2003, 716). In 2011 DFID agreed to another grant with Uganda, this time one called *sh380b*, that aimed at providing development assistance, empowering communities, as well as providing women with job training and opportunities (“UK Guarantees Sh380b Development” 2011, 1).

In Sam Hickey’s (2013) political analysis of Uganda’s historical and future development strategies, he chronicles the country’s reliance on foreign aid and its plans moving forward. As highlighted with DFID’s financial support of the country, Uganda has been heavily reliant on foreign aid for decades. Figure 4 reveals that Uganda has historically received monetary support exceeding 50% of their annual budgets. This statistic shows that in those years in particular the country was saturated with many foreign aid groups with individual agendas. There are positive and negative components to this form of aid. The bottom line is that Uganda needed assistance, and foreign aid was available and supportive of the goal to transform an impoverished people into a functioning middle-class. This debt, however, carries the burden of partially relinquishing of autonomy as a country. Not only did Uganda become dependent on this aid, but for at least a decade, the government’s agenda was significantly influenced by powerful, international stakeholders, whether positively or not (196). In 2006, however, they were removed from the highly-indebted poor country (HIPC) list due to their decreasing dependence on international aid (197).

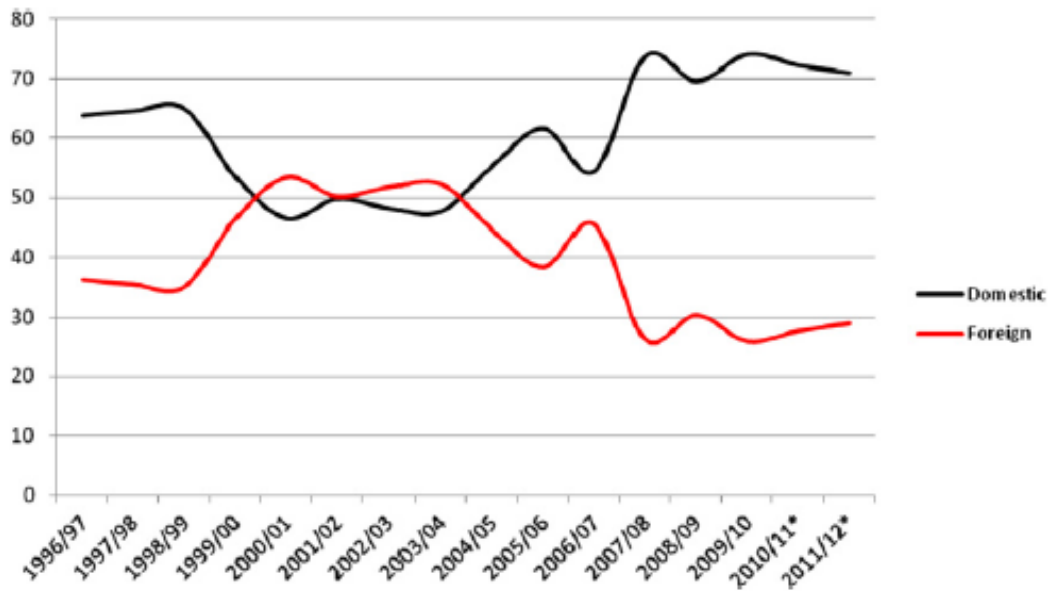


Figure 4: “Foreign and Domestic money budgeted in Uganda from 1996-2012” (Hickey 2013, 197).

During this time period Uganda made significant progress in the reduction of “poverty and vulnerability,” primarily through advancing their coffee market and reducing HIV/AIDS infection rates (195). The government launched a new National Development Plan (NDP) in 2010 to address politics, economics, and international relationships surrounding their “poverty agenda” (194-195). Uganda was framed as the “...showcase of liberalization under the Washington Consensus and then of the poverty reduction under the [Post Washington Consensus] PWC...,” and hope to use the NDP as their new framework for success through “transformation and prosperity.”

Menstrual hygiene management research and programs have been moving into the country in recent years for two reasons in particular: 1) Uganda’s governmental budget for education and health programs have expanded from 18% of the total budget in 1997 to 25% of



the budget in 2011, as seen in the graph below, and 2) MHM is getting global attention, support, and funding from international stakeholders (195).

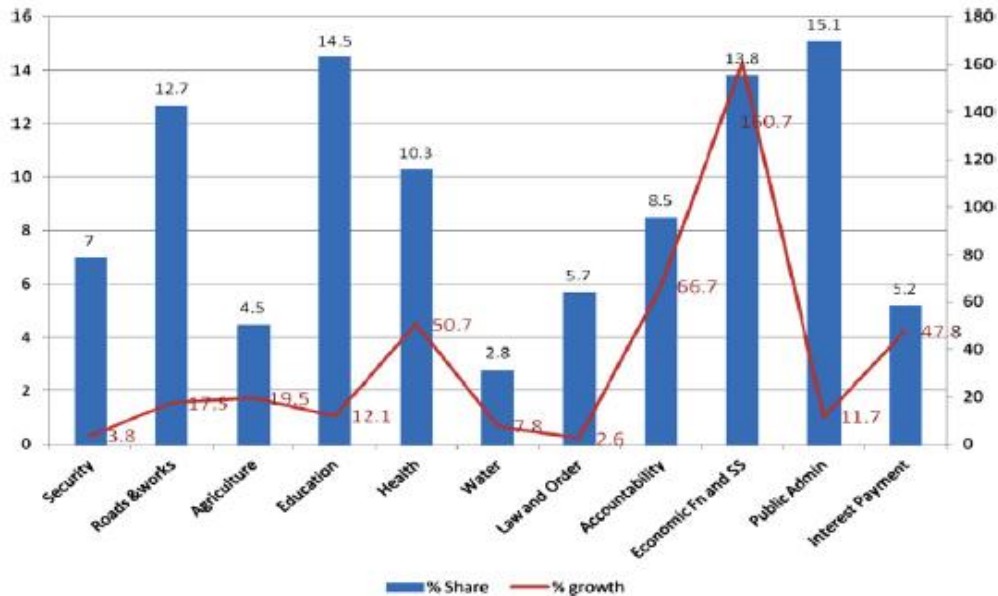


Figure 5- 2011-2012 Ugandan government departmental budgets (Hickey 2013, 200).

It is clear that education and health are high priorities for the country as they continue to be displayed as such in yearly budgets. Both sectors can include MHM, a theory why menstruation is being prioritized locally and internationally for Uganda’s future and the potential for positive, radial shifts at an individual and community level are immense. Uganda has experienced a challenging past politically and socially, rippling into the economy and the health of the people, but has made strategic plans and international partnerships to reshape its standing in Africa and beyond. However, the country still has a long road ahead with many fundamental challenges to face before that progress can occur. Although Uganda’s poverty rates have declined from 56% in the early 90s to 24% in 2010 making it one of the fastest growing economies in Africa, attention to the population’s standard of living has led to greater economic inequalities (Daniels and Minot 2014, 116). Daniels and Minot argue that upon investigation, the

government reports overstate the decline of poverty and instead analyze Uganda's growth by non-monetary indicators and assets (115-16). For one, Uganda's Gini coefficient, a common, statistical measurement of inequality, in 1992 was 0.364 and in 2010 rose to 0.426, showing that wealth distribution inequality increased significantly. This era also created a drop in well-being rates and some argue that there were heterogeneous outcomes regarding the Millennium Development Goals (MDGs) in the country. The authors believe that due to adjustments in the questionnaires from the Demographic and Health Surveys and the Uganda National Household Survey as well as "...insufficient adjustment of the poverty line..." are to blame (116). Although poverty rates were reported to decline 14%, the authors recalculate this statistic using the same data to suggest that the realistic poverty decline is closer to 5%, a number that is still significant yet less impressive (115, 131). This sense of decreased well-being and higher rates of inequality are particularly transparent in remote regions. Andrew Holden's *Tourism, Poverty and Development* (2013) describes that in northeast Uganda, teachers are so poorly paid that an instructor was responsible for 202 pupils in one class and that in a particular school there were three teachers for an entire school of 867 children (7). These numbers are an unfortunate reality despite the governmental education budget of nearly 15% and are similarly visible throughout the country and literature (Hickey 2013, 200).

Chronic poverty, a form of poverty that is commonly generationally inherited and often results in "...trading long-term goals to improve their lives..." is rampant in many districts in Uganda (Bird, Camfield, and Knowles 2010, 1185). This level of social and economic inequality appears in educational settings and extends even further when examining enrollment in girls and boys. Figure 6 depicts this inequality in a variety of countries in terms of Human Development Index and ratio of enrollment in both primary and secondary schools.

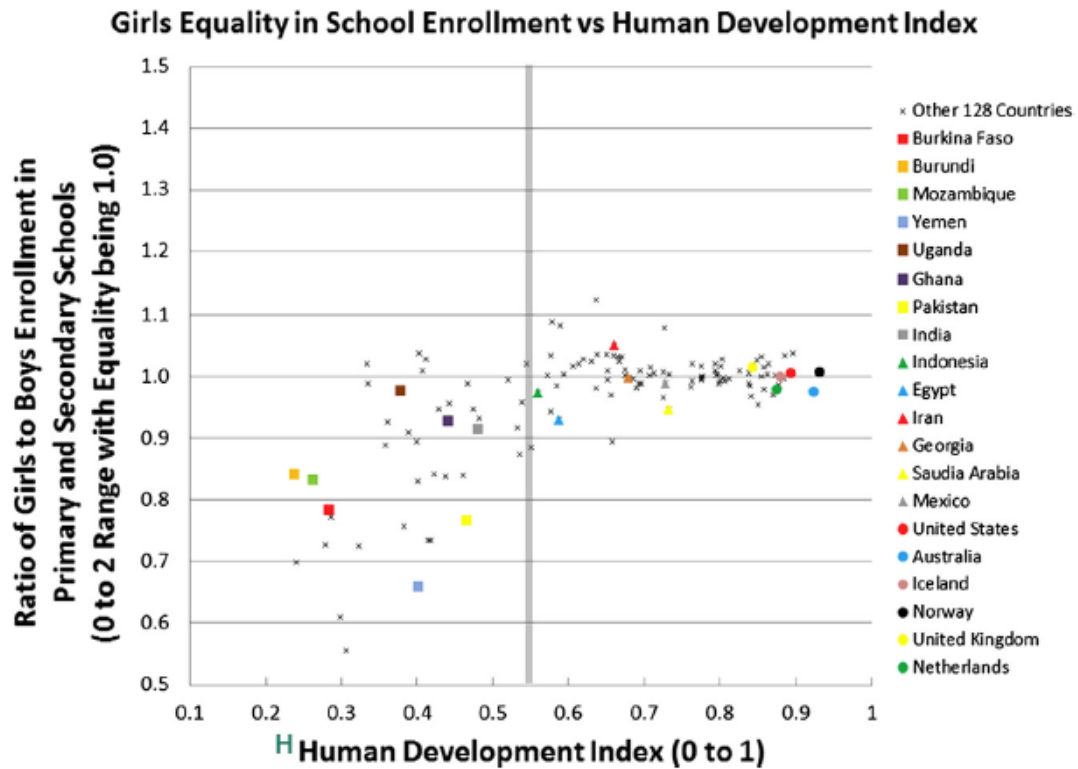


Figure 6: Girls Equality in School Enrollment vs Human Development Index (Musaazi et al. 2015, 569)

As visible by the brown square, Uganda is on the tail end of HDI index to ratio of girls in school. A variety of studies have proved that improving education for women and their access to it assist them in experiencing better and more economically productive lives for themselves and their families. Education has shown a direct correlation to the capacity of work outside of the home, decreased fertility rates, as well as a reduction of the IMRs and MMRs. For these reasons, education is vital to the reproductive health of women (Musaazi et al. 2015, 569). There are 60 million girls worldwide not enrolled in school each year and 54% of girls in sub-Saharan Africa dropout of school before their primary education is complete (Hertz and Sperling 2004, 2). In Uganda in 2013, the enrollment rates for school-aged girls in primary education were at 91%, but

plummeted to 22% in secondary school enrollment (Montgomery et al. 2016, 2). The proven benefits for the retention of girls in school includes higher wages, faster economic growth, more productive farming, healthier, smaller, and more sustainable families, reduction in infant mortality, reduction in HIV/AIDS contraction, reduction in domestic violence, decreased risk of genital mutilation, and increased political participation (Hertz and Sperling 2004, 3-6). Upon researching why such a staggering number of adolescent girls are dropping out of school, one conclusion is that girls experiences menarche and are unable to successfully manage their menstruation well enough to attend school. As analyzed in both the Western and non-Western society sections of this paper, many girls have little to no knowledge about menstruation, nor ways to manage it properly.

In Uganda, menstruation is a very taboo topic and conversations are avoided even between mother and daughter (Musaaazi et al. 2015, 569). In low-income settings such as Uganda, access to mitigation strategies such as sanitary products, pain medication, wash facilities, etc., are difficult to access and are often too expensive to use. In Uganda, it would cost a girl 1/10 of the entire family's monthly average income in order to afford sanitary pads. This expense is unrealistic to many girls and families. There are few alternative solutions: 1) if there is a local NGO selling sanitary pads for a decreased rate or distributing them at no cost, a very rare circumstance due to the high prices of the products, 2) make do with clothes scraps, rags, leaves, toilet paper, etc., or 3) skip school. Avoiding school also reduces anxiety about leakage, or embarrassment about smell, cleaning up after using the latrine, or even revealing your menstrual status to classmates. The current leading suggestion for mitigation by researchers are SHPs as access to these products has shown direct correlations with attendance (570). Sanitary products are not, however, the only leading mitigation intervention to menstrual hygiene

management in all contexts. As there has been little research on MHM in Uganda, the understanding of met and unmet needs is low. The field of MHM is gaining momentum as its relevance to a number of fields, including the WASH (Water, Sanitation, and Hygiene), humanitarian relief work, and human rights, and is being supported through governmental programs, charity organizations, non-profits, NGOs, and development organizations (see e.g. Boosey et al. 2014, 2; Montgomery et al. 2016, 3). These sectors, particularly WASH, are presently utilizing MHM as their ‘darling’ and a significant amount of global attention is being turned to menstruation as a target obstacle to the fundamental human right of education.

The following case studies of MHM research in Uganda will provide a detailed synthesis of the study, methodology, results, and conclusions as well as an analysis of positive and negative components for future research purposes. These studies will also provide an insight into the realities of menstruation beliefs, practices, triumphs, and challenges in these settings in order to address and understand the primary, visible, and immediate needs as well as hidden but imperative needs. As the research on MHM in Uganda is new, most of these studies address the visible needs in their methods and observe the hidden ones in their conclusions. Following these case studies will be a call for a holistic approach to MHM that encompasses both the visible and invisible needs of menstruation in order not simply to “band-aid” the mitigation, but to address fully the underlying issues facing girls and women. Critical medical anthropology requires the practitioner to not only understand the presented issue in a cultural context, but to assuage or eliminate it. Therefore, this chapter will provide the context for the paper’s concluding implementation suggestions.

## **Case Study One: Schoolgirls in the Rukungiri District**

Boosey et al.'s article (2014) in *The Pan African Medical Journal* focused on the Rukungiri district in Uganda and the menstrual hygiene management challenges facing female students aged 13-16 who have reached menarche in six government-funded schools from March-April of 2013. Research has proven in multiple settings that school-ages girls in low-income settings struggle with attendance during their periods due to an inability to access menstrual hygiene management solutions, and the team wanted to better understand these challenges (Boosey et al. 2014, 1). Their mixed-methods approach included the utilization of self-administered questionnaires, semi-structured interviews with key informants, focus group discussions (FGDs) with head teachers, and toilet assessments in each of the schools. The girls who partook in this survey were secondary school aged, but were presently in primary school as they had missed enough school to be behind in their schoolwork (2). Their most significant findings were: menstrual-related absenteeism and high dropout rates, crippling taboos surrounding menstruation, poor knowledge of menstruation, poor washing facilities and toilets, lack of interest in or knowledge of menstruation by male teachers, and lack of access to sanitary products.

The stigmatization of menstruation in Uganda revealed itself in this study as the researchers took precautions to make the girls feel comfortable enough to discuss menstruation or answer questions about it in private. They observed nervous laughter, lack of eye contact, as well as looking at the ground when speaking about periods, all key indicators of embarrassment and shame (Boosey et al. 2014, 4). The fear of menstrual blood leaking and staining their uniform or their menstrual cloth falling out at school were not just felt by the girls in schools, but also by the female teachers who also missed school due to menstrual-related reasons. Girls even

reported fear of their menstrual cloth falling out if she was beaten in school. Many girls also reported experiencing shame so severe that they feared asking their parents for soap to wash themselves during their menstrual cycle, resorting to them hiding the small bits of soap remaining from their family's clothes washing to clean their sanitary cloths (5). Male teachers in this study did not show interest in menstruation and girls' needs to cope during their cycles, likely because of their lack of menstruation knowledge (4). When male teachers were asked what the government should do to help girls manage their menstruation, one male teacher said, "...special rooms with all the equipment that is needed for ladies," and gave no further explanation of what that would entail. Another expressed a need for access to "...pads, cotton wool. Even some I do not know because I am not female," underlining the complete lack of knowledge surrounding MHM. Furthermore, this substantiates that menstruation is viewed as a women's only issue that men should not participate in, understand, or care about. Likely as a result of these beliefs, the female teachers divulged that male teachers seldom allotted adequate funding for MHM programs. A senior woman teacher also reported that these views are observable in the wider community, as she had been prevented from buying sanitary products in the past because it was not deemed to be a "suitable" way to allocate the school's funding (5). These forms of stigmatization likely contribute to the high absence rates of the girls in this study. The researchers discovered that 61.7% of the 131 girls surveyed missed school every month, some even missing up to 10 days due to menstrual related causes (3). The literature confirms that missing school due to menstruation is common for girls in Uganda, as is dropping out of school entirely, with rates increasing in lower-income settings such as those in the Rukungiri District (2). Also notable is that of the girls who responded that they did attend school during their periods, "they struggled to concentrate in lessons and did not want to participate in class

activities for fear that others might recognize their menstrual status” (4). Poor understanding of menstruation and education about menstruation were also a key finding in this study, and not only from the male teachers. Girls in this study display incorrect views about menstruation and additionally expressed an interest in MHM education to better understand menstruation (6). When surveyed about what the girls have used to absorb menstrual blood, the results showed that many of the girls were utilizing unsanitary methods.

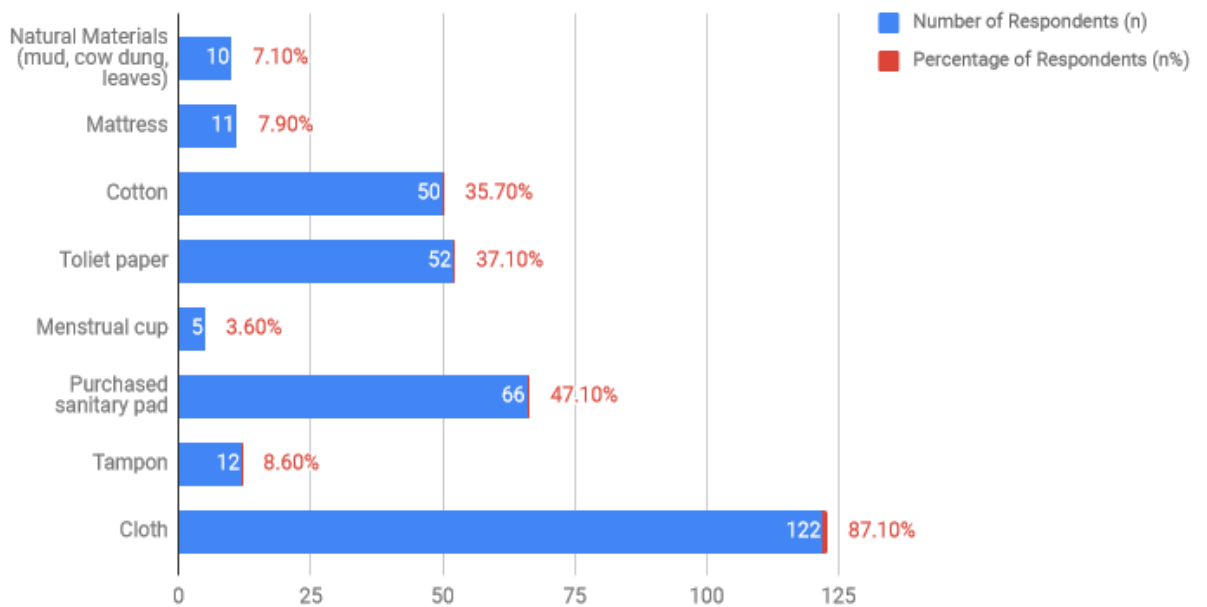


Figure 7: “Bar graph showing girls’ reported menstrual product use (n=140)” (data adapted by Boosey et al. 2014, 13).

This bar graph indicates that there are multiple sanitary products, and some highly unsanitary products, in use in these communities. First, the identifications of the utilization of natural materials such as mud, cow dung, and leaves were expressed by 10 girls, mattress by 11, cotton by 50, toilet paper by 52, and cloth by 122, all unsanitary forms of menstrual blood



absorption. These unsanitary blood absorption methods account for nearly 75% of the reported methods, and about 25% are widely considered sanitary (sanitary pad, tampons, and menstrual cups). This research indicates that girls simply do not have proper access to or knowledge of sanitary menstrual blood absorption methods.

Common reasons for menstrual-related absenteeism as described by research participants throughout the literature on MHM, is fear of staining clothes (stigma), menstrual pain, and need for access to menstrual hygiene products. The existence of corporal punishment as a result of menstrual-related absenteeism was also discovered in this study. Possibly, the researchers theorize, this is not as common in others studies because girls may have been too fearful to admit it to research staff, did not see the connection between corporal punishment and menstruation, or simply were not able to express their experiences due to how a questionnaire or interview was formatted (Boosey et al. 2014, 6). The primary reason that girls reported menstrual-related absenteeism in this study was that they lacked an adequate, private washing facility that would allow them to change their sanitary products and clean themselves at their school (4). The toilet assessments conducted in this study were based off of WaterAid's toolkit that set a standard for adequacy of latrines (see Pillitteri 2011). Wanting to view the toilets in their daily state, the researchers asked to see them post-completion of the surveys and questionnaires (Boosey et al. 2014, 2). Not a single school in this study had a toilet that was considered adequate for proper MHM "due to their lack of cleanliness, light, access for girls with disabilities and soap and water, in addition to the poor ratio of toilets for the number of girls" (4).

The study does have limits such as sample size, the girls had to attend class in order to complete the surveys (which would not account for those who either missed school due to menstruation or other reasons, nor would it account for girls who had already dropped out of

school), and the women who conducted the focus group discussions and interviews were all foreigners which can lead to distrust, uncomfortability, or falsifying questions to appear in a different light. Although these limitations are important, the outcomes of the study have been reflected in other studies and they concluded that menstrual-related absenteeism was of great concern as it affected the majority of girls (Boosey et al. 2014, 5). The researchers call for larger-scale studies to address MHM in low-income settings such as Uganda, specifically to understand dropout rates as well as the reduction in qualifications in order to improve MHM practices and allow girls to have access to education (7). Boosey et al.'s research touches on many visible needs such as adequate toilet facilities, pain medication, education about menstruation, and access to sanitary products. It also touches on one of the invisibles of including men in menstruation. In terms of the proposed nine components to holistic menstrual hygiene management, this study addressed 6/9. The authors suggest that the successes associated with this program would have been further enhanced if the program had an even more holistic approach. With few indications on how to directly improve these indicators, however, the study leaves the reader with a better understanding of MHM in the Rukungiri district of Uganda, but without a strategic approach to mitigate any of the issues.

### **Case Study Two: Impact Assessment in the Kamuli District**

Montgomery et al.'s study (2016) sought to understand the impact of puberty education and access to sanitary pads in the rural Kamuli district, located in east-central Uganda. To understand these interventions and how they affected school attendance and psychosocial wellbeing, the research team used a cluster quasi-randomized control trial across eight schools and 1,124 female students. They did this by classifying the schools into four groups: only

puberty education, only reusable sanitary pads, both puberty education and sanitary pads, and a control group that had no interventions (1). There is very little research on how interventions either positively or negatively impact girls not only in Uganda, but globally. For this reason, Montgomery and the research team sought to create a system to control and measure both of the impacts they were interested in to understand how menstruation-related absenteeism and psychosocial wellbeing are affected. The Kamuli district was selected because of its substandard indicators of education, health, and welfare, commonly characterized by growing dropout rates in secondary school, high illiteracy rates (the 3rd lowest among primary school-aged children in the country), high rates of mortality, food insecurity and malnutrition, and substandard housing. The literacy disparity between boys and girls in Kamuli is 69.7% and 54.6% respectively, with the girls being significantly below the national rate of 70% (4). From January 2012-December 2014, the research team studied the interventions in the eight schools selected with two schools per condition (5).

The education sessions only occurred one time during the entire study, meaning that the girls who were absent on that day due to menstruation or otherwise missed the puberty education entirely. The attendance records of girls who were study participants supported this possibility, as there was only 50% attendance at the sessions. This rate could be improved with more frequent education sessions, which would need to be budgeted for. The research team faced challenges rooted in the exact topic they aimed to understand- dropout rates. Their pilot study showed much lower rates of dropout than the actual study and this presented the team with challenges they were not expecting, as they could not reach the girls who left despite their efforts due to budget and time constraints (Montgomery et al. 2016, 6). Furthermore, the girls in this district displayed “...highly mobile...” tendencies, indicating the frequency of geographic

transitions. Many transferred schools during the trial for a variety of reasons. At the end of the study, only 580 of the 1124 girls remained, with 91 dropping out of school, 223 transferring, and 114 of unknown enrollment status (10).

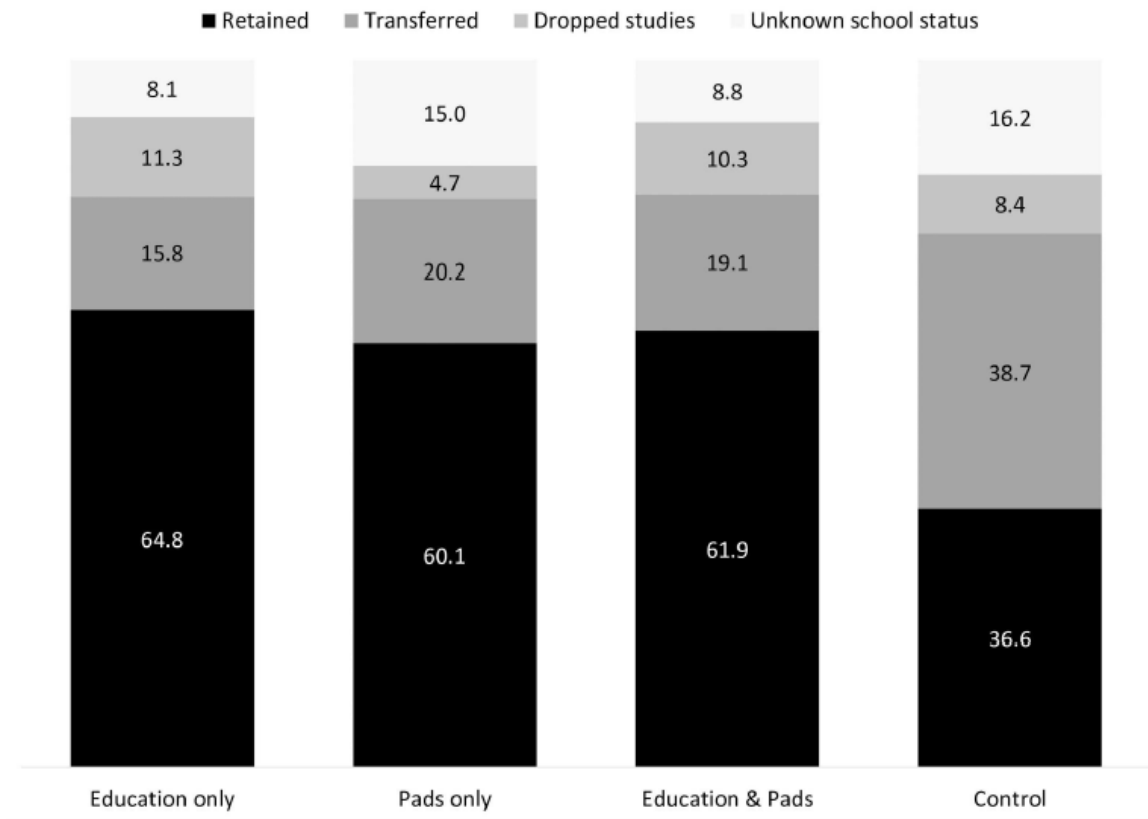


Figure 8: “School status at follow-up according to condition (%) (n=1008) (Montgomery et al. 2016, 11).

The results of the study indicate that any intervention is significantly better than no intervention. The lowest dropout rate came from the pads only schools, the highest from the education only schools, and the significantly highest transfer rates from the control schools. The surveys distributed also displayed information that shows common themes with some of the other studies seen in this paper. Only 61.4% of the girls surveyed knew what menstruation was

and 20.6% had reached menarche. Of the menstruating girls, 87.9% used cloth, and only 3 signified using sanitary pads. Most girls had access to water and soap and at home, but only 15.5% did at school (Montgomery et al. 2016, 12). Regarding the ability to change their sanitary products at school, just over half indicated that they had a “*little bit of a problem*” or “*a big problem*” and many girls also “felt more ashamed or insecure whilst menstruating than when they were not” (12-13). Just over half of the girls indicated that their menstrual cycle has caused them to miss school, with a mean of 1.43 days per month (13).

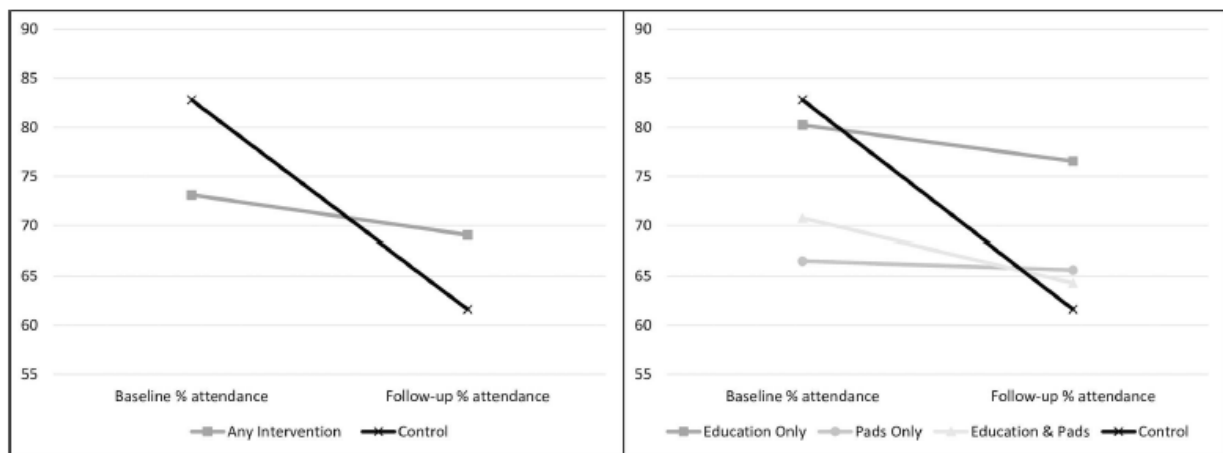


Figure 9: “Mean percentage attendance at baseline and follow-up for all interventions combine, and each condition, compared to control” (Montgomery et al. 2016, 15).

As indicated in the above figure, each intervention experienced an attendance drop with the least being pads only. However, this graph also indicates that providing any sort of intervention in this setting will have a significant effect on attendance rates.

This study had many excellent attributes and some unexpected challenges that limited the research. Firstly, this was a large trial to assess MHM interventions on school attendance for girls which provides more robust data and furthers the knowledge of MHM interventions and their success and failures (Montgomery et al. 2016, 22). The cluster design allowed the study to

isolate each variable and compare them to each other, a format that could be beneficial to use in future studies. This trial did an excellent job at understanding the selected MHM interventions; however, it only addressed 3/9 of the proposed holistic MHM program attributes and, like other programs taking a partial approach to the MHM challenge, could have seen greater successes if the rest of the components were addressed. The team acknowledges this and calls for more research to be done with larger participant numbers and a wider variety of interventions, saying that those “actors contribute to dignity and enables adequate menstrual management” (21).

### **Case Study Three: Sustainable Solutions to MHM**

Tamiru et al.’s (2015) article “Towards a Sustainable Solution for School Menstrual Hygiene Management: Cases of Ethiopia, Uganda, South-Sudan, Tanzania, and Zimbabwe” explore MHM practices and interventions in the above countries through both qualitative and quantitative approaches using the methods of: observations using a checklist, structured interviews, semi-structured interviews, in-depth interviews, key informant interviews, and focus group discussions. The program used was developed by SNV-Netherlands development organization for their WASH in Schools (WiS) program. The research was conducted at a bigger scale than any other study included here, with data collected over six months, from five countries, 25 districts, 491 schools, 141,000 young girls directly benefitting from the implementations, as well as a goal of eight million people reached through campaigns, dialogues, programs, and advocacy events (93). The scale of this research provides critical insight into menstruation practices and beliefs in Uganda as well as other parts of sub-Saharan Africa, and the use of both qualitative and quantitative analysis produces both hard data to analyze the results produced through SPSS and allows girls a platform to tell their stories. The researchers

hope to use the findings from this baseline study to implement monitoring and evaluation processes as well as advocate for policy changes.

Menstruation in central Uganda is called *ensonga* which translated as “the issue.” In other countries studied, the translations ranged from “blood flow” to “dirt.” Naming is always symbolic and significant. The way menstruation is referred to in each language can provide insight into the cultural views of menstruation, and the central Ugandan word *ensonga* speaks volumes about the realities of menstruation in Uganda. In all five countries, women were not allowed to attend public gatherings, particularly religious ones, nor participate in religious prayers or activities during their menstrual cycle. They also found that parents were mostly permissive of their daughters getting married once they reached puberty, and all five countries indicated families felt their daughters were an “...asset for their family as they bring fortune...”. An average of 80% of girls in the five countries indicated that they had some knowledge of the body changes of puberty, but they had limited understanding of how to manage these changes (Tamiru et al. 2015, 95). Sixty six percent of girls, however, were not aware of menstruation before menarche and they reported it as a shocking or fearful event (95-96). Girls additionally reported in surveys that their schools did not have adequate menstruation education. The absorption strategies utilized across the study “...range[d] from nothing to disposable pads, cloths/rags, commercial sanitary pads (disposable and reusable), toilet paper, magazines, cotton, pieces of mattress, natural materials (leaves, tree bark), digging a hole, goat skin, cow dung, ash, and sand” (96). Most girls were interested in commercial, disposable sanitary products if the price of the products were reduced by 50% as currently the costs range from USD \$1- \$2 per pack, “...if their preference is considered (style, length, thickness, etc.), if they are promoted by the media, and if they are assured that there is no health risk” (97). There are multiple INGOs

including SNV, Plan International, and WaterAid and local NGOs working in the studied regions to support the production of sanitary products; however, they discovered that production and distribution are limited. Additionally, the WASH facilities observed were also limited and inadequate. Girls primarily reported that their primary challenges to stay in school were lack of access to sanitary absorption methods and menstrual pain, both creating an uncomfortable environment to attend class in. Girls also experienced increased self-esteem challenges and decreased confidence because of their fear of improperly managing their menstruation. They feared staining their clothes as well as creating unpleasant odors due to not washing well enough. Because of this they were unable to focus in class and 57% of girls in Uganda preferred to stay home. This percentage was the highest found any of the countries in the study. Concerningly, girls in Uganda, Tanzania, and South Sudan disclosed that they exchange monetary bribes from boys for sexual activities in order to afford their basic sanitary and other needs, as financial support from home was too limited. Twenty six percent of girls said they were approached by boys post-menarche for “...love and sex,” which, without holistic puberty and sex education, can increase premature entry into pregnancy and school dropout rates (99). 24% of Ugandan senior woman teachers indicated that the primary reason for dropout is menstruation. Across the study, girls on average missed 4 days of school due to menstruation every month, perpetuating significant gender-based disadvantages (102). These findings showed that girls were disempowered by not having the ability to healthily manage their biology and significant support, financial and other, are required to reverse this process. This study acknowledged the proposed nine factors to holistic menstrual hygiene management, but did not address solutions or interventions to them. If these had not just been acknowledged but included as components of the program, Tamiru et al.’s research could have been strengthened. The study highlighted four



insights observed: stigmatized traditional beliefs, poor knowledge on MHM, sanitary products to manage MHM, and access to physical infrastructures.

## **CHAPTER FOUR: TOWARDS A HOLISTIC MENSTRUAL HYGIENE MANAGEMENT STRATEGY**

### **Proposed Nine Components to a Holistic Menstrual Hygiene Management**

1. Sanitary hygiene materials
2. Clean toilets
3. Hand washing
4. Puberty education
5. Pain mitigation
6. Head woman teacher
7. Inclusion of boys and men
8. Support at home
9. Destigmatization

The average woman will have about 450 periods in her lifetime, so healthy management is essential (LaVigne 2016, Introduction). These case studies outline what is currently occurring in Uganda in terms of MHM and also highlight what is missing. It is noted that there has been a lack of continuity and universality of goals, success, definitions, indicators, and methods to MHM research (e.g. Hennegan et al. 2016, 2). These inconsistencies are visible throughout the literature as most studies examine different interventions and indicators and employ different methods to understand different outcomes. It is even debated in the field if absenteeism is correlated with menstruation, as a small number of studies have found no significance and others have found staggering significance. As explored above, Tamiru et al. (2015) reported that across the five African countries analyzed that girls miss an average of four days of school a month due to their menstrual cycle (102). In Bangladesh there was a 41% absence rate during menstruation

with the girls missing 2.8 days on average, meaning that girls were absent for 16% of the school year (Alam et al. 2017, 4-5, 7). FAWE's (Forum for African Women Educationalists) reports (2005) indicated that in Uganda the average missed days were between three and five. In Boosey et al.'s study (2014), 61.7% of girls missed school every month during menstruation, and some even missed up to 10 days per month (3). Some studies have reported as high as 100% menstrual absentee rates such as in Malawi. Others have reported 50.2%-70.7% in Kenya and Nepal, and some have reported little menstrual related absenteeism such as in Maharashtra, India with 14% (see Alam et al. 2017, 7; Boosey et al. 2014, 6). These variations are not unexpected as baseline research strategies are all dissimilar. Girls identify missing school due to menstruation for a variety of reasons, but in Bangladesh 59% communicated uncomfotability sitting next to boys in school during their menstrual cycle, 31% were felt embarrassed during menstruation, 5% indicated that they had no infrastructure to change cloths, and 4% reported that their parents or guardian prohibited them attending classes (Alam et al. 2017, 4-5). Although the universality of menstrual-related absenteeism is unconfirmed, the majority of studies claim to observe a connection and therefore must explore it more definitively.

As the field of MHM is young, there is a collective call for increased research efforts alongside more in depth research to understand menstruation and the effects to girls in low-income settings and beyond. A more significant and unifying protocol for processes and interventions will also be helpful to define the parameters of MHM. The current definition of menstrual hygiene management by the Joint Monitoring Program includes access to absorption materials, privacy, soap and water for washing, and disposal facilities (Hennegan et al. 2016, 2). Although there have been criticisms surrounding the "...overextension of the term," menstrual hygiene management should not solely address these access issues, but should rather address the

larger issues of stigma and shame. My proposed nine components to holistic menstrual hygiene management programs include two types of interventions: 1) ‘visible’ ones, or the access indicators of clean toilets, hand washing (both soap and water), puberty education, pain mitigation, and absorption solutions, and 2) ‘invisible’ ones, or the contribution indicators of woman teacher/leader in schools, the inclusion of boys and men, support at home, and destigmatization. Nearly all menstruation studies regardless of date, geographic location, language, or population address one or more of the invisible indicators, but often as observations. As Montgomery et al. (2016) expressed, “in taking a holistic view of girls' needs, it is important to consider the way access to other requirements for management may further contribute to school attendance, and to psychosocial well-being, which was not improved by the tested interventions [of puberty education and MHPs]” (21). No study found in an extensive literature review address all nine factors; however, I have formulated these indicators based upon gaps acknowledged in studies by the researchers and stakeholders. These steps are all already proven or suspected aspects and contributors of MHM, but I want to emphasize that *all* nine steps should be addressed in a study or implementation as MHM is a complicated and diverse challenge in LMICs. Each of these strategies has proven valuable in a variety of studies that will be discussed below. These proposed nine indicators aim to assist MHM researchers and professionals to further operationalize MHM, moving towards a unified understanding and execution of comprehensive interventions in low-income settings, particularly in the Global South.

### **1- Access to Sanitary Products**

This intervention has been the most widely researched and supported of all proposed interventions, likely because it is arguably the most influential factor to increase menstrual-

related absenteeism. In the Water Supply & Sanitation Collaborative Council (2013) report, they found that “...only 12% of girls and women have access to commercial sanitary products” (11). The alternate adsorption strategies employed by girls and women in low-income settings is used almost as a tool to obtain support and awareness for MHM by juxtaposing the ideal, modern, Western woman who uses disposable or reusable sanitary products with the “other”- a fascinating, and sometimes horrifying, alternate-reality where women in these settings are forced to use rags, toilet paper, magazines, cotton, scrap mattress bits, or even mud, cow dung, sticks, sand, goat skin, leaves, or digging holes to absorb their menstrual blood (see Boosey et al. 2014, 13; Montgomery et al. 2016, 12; Adinma and Adinma 2008, 75; Tamiru et al. 2015, 96). The reality is that many women do in fact use the above absorption coping strategies and all MHM programs should address access to sanitary products. Qualitative work has historically dominated menstruation research, but quantitative and mixed-methods research have begun to analyze absorption strategies and interventions. In the many case studies, there has been a positive correlation between girls receiving sanitary pads and school attendance, but there needs to be increased research to understand how different products affect this (see e.g. Montgomery et al, throughout; Boosey et al., throughout). There are hundreds of sanitary products on the market including disposable pads, tampons, menstrual cups, menstrual underwear, and reusable pads, all with positive and negative components to them.

In Uganda there are two primary sanitary products being used by local girls and women- Makapads and AFRIPads. There was a conscious shift from dependence on foreign-made products and solutions for menstruation to the creation of locally made products that directly benefit Ugandans. Makapads was developed by Dr. Moses Kizza Musaazi through the support of the Rockefeller Foundation, and are locally-made, disposable sanitary pads made from highly

absorbent papyrus. Interestingly, papyrus may have also been used in ancient Egypt for the creation of disposable tampons (Tan, Haththotuwa, and Fraser 2017, 124). Each pad can be used for up to 10 hours and cost half of similar products available in the country. Rising in popularity, over 4 million are made every year (Musaazi et al. 2015, 570). AFRIPads are also produced and manufactured locally in Uganda and are a reusable, washable, eco-friendly sanitary pad made by women for women (see AFRIPads 2017, Our Products). AFRIPads creates a deluxe menstruation kit that includes a pack of AFRIPads four of their pads in two absorption sizes as well as a storage bag to transport used pads for sanitation. In the Montgomery et al. case study, the girls received a pack of AFRIPads, 3 pairs of underwear, two carrying bags, and a small bit of soap to wash the pads with.

Both options have positive outcomes in Uganda, however both also come with challenges. If not cleaned properly, reusable pads can become unsanitary and cause similar issues to poor absorption methods so education on how and why to clean the pads is essential, but only is effective if thoroughly utilized by the girl which takes time and effort. In a Bangladeshi study, only 3% of the girls washed their sanitary cloths the suggested way (Alam et al. 2017, 4). Not only can side effects of reusable pads include irritation, discomfort, and urogenital discomfort, there has also been laboratory confirmation of an association between reusable pads and urogenital infections in comparison to disposable pads (Hennegan et al. 2016, 2). Additionally, one study in Ethiopia reported that girls who did not use disposable sanitary pads had a 5.37 times the likelihood of menstrual-related absenteeism and attendance for urban girls in Bangladesh also was higher for those who used disposable products (see Montgomery et al. 2016, 3; Alam et al. 2017, 4). Disposable pads offer convenience, but also pose the issues of disposal and continuous access. Often schools do not have a way to dispose of sanitary products

in discrete or sanitary ways, presenting a challenge to managing menstruation comfortably and discreetly. This can create anxiety and fear of exposing their menstrual status, leaving room for criticism, embarrassment, teasing, or even beating (Boosey et al. 2014, 4). Furthermore, disposable products can be expensive and require either continuous purchase or provisions that may not be accessible at all times due to lack of family budget for menstrual products, or due to lack of funding for those supplying the sanitary product provisions. This has the potential to create a circle of dependence for those needing the products and power positions for those who have access to them. Access to sanitary products is not a simple component to holistic MHM and increased impact assessments need to be conducted to better isolate and identify product interventions. Access to products is an undeniably essential intervention to assess for any MHM study; however, the topic of menstrual hygiene management includes so much more than access to products and the literature is beginning to reflect this.

## **2- Clean Toilets**

Schools in low-income settings often are built without access to safe drinking water, toilets, or handwashing facilities (Deroo and Graham 2015, 512). In the often isolated environment of a school proper toileting facilities are essential for all students, but particularly for girls who have reached menarche as all absorbents are prone to leakage and can stain a girl's underwear and clothes (Montgomery et al. 2016, 3). A UNICEF study found that only 50% of the 60 priority WASH countries provide adequate water and sanitation services and facilities for the students and girls that these lacked proper facilities have shown to have increased, negative health and education outcomes (2016). Clean toilets are taking a priority not just in MHM, but across the WASH sector with the implementation of the SDGs in 2015 (Deroo and Graham

2015, 512). 82% of girls in Alam et al.'s (2017) study in Bangladesh agreed that their school's facilities were "...inappropriate..." to manage their hygiene during menstruation while 82% of the schools in the study reported having an "improved" toilet for girls. However, only 28% of those reported "improved" toilets were unlocked and usable and only 9% of schools provided soap and water for those toilets. Locked doors on toilet facilities are common, with this study finding that half of the girls' toilets were locked during school hours. For every usable, unlocked toilet there were 98 girls, a far cry from the recommended standard of 50 per toilet in Bangladesh (4). Similar statistics are seen in other contexts as well. For instance an Indian study reported that 28% of girls reported menstrual-related absenteeism due to inadequate facilities, in a Nepalese study 41% of girls named a lack of privacy for hygiene as a major reason for missing school, and similar reports have been found in South Africa, Ghana, and Malawi (see Scorgie et al. 2015, 166; Alam et al. 2017, 4; Pillitteri 2011, 20). South African girls also indicated that locked toilets were essential for privacy; however, their facilities did not include those (Scorgie et al. 2015, 161). In the Malawian context, more than half of the girls reportedly "...dreaded anyone seeing their menstrual blood in the toilet..." Over one third of the 104 girls surveyed said they never use the school's toilet facilities and would alternately either wait until they arrived at home, "...us[e] the bush..." or avoid school entirely, some out of fear that someone will use their menstrual blood for witchcraft (Pillitteri 2011, 14, 20). In Tanzania, 99% of the schools observed did not have adequate MHM facilities, in South Sudan 81% of the schools did not even have MHM facilities, and in Ethiopia not one participating school had adequate facilities (Tamiru et al. 2015, 98).

Proper disposal of sanitary products is also essential for obtaining proper WASH facilities in schools for MHM. Bins for disposal were few and far between in the Malawian study



particularly in boarding schools where girls kept their soiled pads under their beds to discard them privately at a discrete moment (Pillitteri 2011, 11). In the Durban, South Africa study, the sanitation and local government planners did not take disposal into consideration and girls were disposing of their non-biodegradable products in the pit latrines and waste dumps, causing them to fill at a faster rate. Many women also wrapped their sanitary pads in plastic, further impeding decomposition (Scorgie et al. 2015, 170). In Tamiru et al.'s study they found that 47% of girls disposed of their soiled pads in the pit latrine, 16% of them flushed them down the toilet, and 37% of them threw them in the nearby forest. As presented by Tamiru et al. (2015), women using flush toilets who do not have proper disposal facilities may also attempt to flush their soiled cloths, causing plumbing blockages and system failures (98). Scorgie et al. also note that globally there is growing evidence of MHPs in water-borne sanitation systems, causing increased health concerns to both the user and the sanitation workers, "...disruptions to communities and households, and results in considerable expense for local municipalities. However, because menstruation is taboo, these sanitation considerations are infrequently discussed or prioritized (Scorgie et al. 2015, 162).

Once menarche is reached, girls are increasingly likely to be absent due to poor WASH facilities in school. In KwaZulu-Natal the pit latrines had urine and feces on the floors and we described as "...disgusting..." Boys were observed to simply avoid these facilities by relieving themselves in an area behind the school, and pre-menarcheal girls went behind a tree in the front of the school (Devnarain and Matthias 2011, 31). The post-menarcheal girls were forced to utilize these facilities for privacy reasons during menstruation. Because of these WASH factors, schools often have gender imbalances (Blake et al. 2017, 2). Studies where WASH facilities have improved and gender-specific bathrooms are available have found attendance to increase

(Deroo and Graham 2015, 512). In a Kenyan study that conducted a cluster-randomized trial found that WASH interventions increased girls school attendance by 58%, and other studies have indicated that girls are asking for better facilities so they can attend school (see e.g. 512-513; Alam et al. 2017, 5; WaterAid 2013, 4; Pillitteri 2011, 20). There are a variety of aspects to address to improve toilet facilities including providing enough facilities per the ratio of girls utilizing them, maintaining cleanliness of the facility, locks that can be activated by the user inside, restrooms that are unlocked and usable, a discreet place for disposal of soiled items, a private place to wash and dry their sanitary pads or stained clothes, and gender-separated toilets to maintain dignity. Local girls and women should be involved in the design and decision making as they are the stakeholders of highest importance, and the efforts should be carried out by local communities with support and funding from NGOs and others (Pillitteri 2011, 18). There has been occasional research that has found no correlations between menstruation and missed school. For one study such study, Alam et al. (2017) theorize that their lack of correlation could be caused by the study's selection of schools with gender-specific toilet facilities. Most MHM studies, they continue, have included schools with non-gender-specific bathrooms and have also found a correlation between academic absences and menstruation (7). Could this indicate that schools who have adequate, gender-specific bathrooms will have less menstrual-related absenteeism? There needs to be significant research conducted to confirm and analyze improved toilet conditions for menstruation absenteeism and girls' wellbeing.

### **3- Hand Washing**

Hand washing is another aspect to address MHM that is referenced in menstruation literature, but also requires increased research into how it affects MHM. The concern currently

present in the literature is that the lack of either water, soap, or both is another urgent aspect of MHM (Pillitteri 2011, 18). As reported in the toilet section, many schools in low-income settings are built without access to safe drinking water, toilets, or handwashing facilities (Deroo and Graham 2015, 512). Menstruating girls who use a toilet to change their absorption tools now have hands that have both been inside of a toilet and have also touched menstrual blood. As most women understand, menstruation is often messy. Girls are commonly faced with the choice between risking having to change their MHP without washing their hands and staying home to avoid the shame, unsanitary practices, or bullying. If a push toward more sustainable or reusable MHPs is ahead, than handwashing facilities must improve to promote improved WASH practices. Access to water has also been a large WASH focus and one that greatly impacts handwashing abilities. Three and a half percent of the entire South African population struggles with access to water and many schools are affected by this lack of reliable access. In 2009 11.5% of schools in South Africa had no water source on location or nearby, particularly affecting rural schools (Devnarain and Matthias 2011, 27). In South Sudan only 45% of the schools had access to water and in Ethiopia that number decreased significantly with only 16%. The primary sources of water came from a borehole with a hand pump and a roof water collection system (Tamiru et al. 2015, 97).

The South African context is particularly challenging as the aftermath of the apartheid is still a reality in social, economic, political, and health dimensions. In the case of Scorgie et al. (2015), the inequities post-apartheid were through sanitation systems and drinking water (162-63). To understand WASH facilities and the experience of women in Durban, South Africa, the participants in Scorgie et al.'s (2015) study were given a disposable camera and two weeks to document their experience of menstruation, regardless if they were menstruating at the time. This

method allowed women to both show and describe, in their own time, their daily experiences of menstruation with the hopes of challenging the women to think critically as well as tell their own stories (165). The results showed inadequate WASH facilities and MHM practices. A proposed temporary solution to lack of hand washing infrastructure is a system referred to as “tippy-taps” where plastic bottles are used as a tap and a bar of soap is tied to the tap bar (Pillitteri 2011, 18). A Ugandan girl from the Opolin village, Amuria District addresses this concern:

I like science because I want to become a nurse. Whenever I miss science, I miss also my job. Whenever I go back home I will miss school and fail my subjects. I want to become a nurse because I want to save people’s lives. We don’t have water for washing at our school. And so after we go to the toilet, especially when we have our periods, we fear touching anything. We are scared even to eat because our hands are dirty. (WaterAid 2013, 4)

Menstrual-related absenteeism is further being understood, but qualitative findings such as the quote above reveal a need for solutions. Hand washing is a primary interest for public health and the WASH sectors and is becoming a focus for MHM as well. Globally, school WASH facilities are being prioritized, but there is still little consistency on how to monitor and evaluate these programs. To improve the health and education of school children in low-income settings, access to useful WASH programs is essential (Deroo and Graham 2015, 512). Devnarain and Matthias (2011) wrote, “Inadequate access to water is not gender neutral in its consequences.” The lack of access to water and soap greatly hinders girls’ ability to access education and opportunities (27).

#### **4- Puberty Education**

As perfectly stated by Adinma and Adinma, “Faulty perception or misconception on menstruation and menstrual cycle will lead to faulty menstrual practices” (Adinma and Adinma 2008, 75). Only 9% of girls in Alam et al.’s study reported having knowledge of menstruation before menarche, which has been similarly represented elsewhere (see throughout Alam et al. 2017; Adinma and Adinma 2008; Pillitteri 2011; Montgomery et al. 2016; Boosey et al. 2014; Hennegan et al. 2016; Furth and Ch’en 1992). Adinma and Adinma (2008) state that because of the lack of correct knowledge displayed from their research subjects, some of the girls in their study report negative physical and psychological shifts on outlook of their body due to menstruation, while numbers of girls and women perceive menstruation as unnatural bleeding from their organs due to a curse, sin, or disease (75). Women in Cali, Colombia believed that chocolate or acidic foods such as oranges would increase menstrual blood staining properties and would avoid them during menstruation to hide their menstrual status (Scrimshaw 1978, 43-44). Menstrual lore and myths have been explored throughout this paper and through adequate puberty, sex, and menstruation education, stigmatization can decrease. Girls who do not understand what menstruation is or how to manage it often utilize unsafe absorption strategies which may have serious and potentially dangerous outcomes to their health (see throughout WSSCC 2013; Pillitteri 2011; Alam et al. 2017; Montgomery et al. 2016; Boosey et al. 2014; Hennegan et al. 2016; Furth and Ch’en 1992).

There are currently four primary targets for puberty education implementations: 1) puberty education should occur in schools, 2) puberty education should occur prior to menarche to prepare girls for healthy outlooks and practices surrounding menstruation 3) training for

educators 4) materials to teach puberty education with. The lack of education of both sexes surrounding puberty and menstruation is harmful to girls by creating unsafe practices and psychological strain or damage caused by stigma. It is important to have a way to discuss menstruation before menarche to prepare girls with healthy views of menstruation as well as healthy strategies to manage it. In some cultures menarche signifies the transition into womanhood and can indicate that a girl should be available for sex, marriage, or children, so education on menstruation and the biological and psychological processes occurring could prevent girls dropping out from these causes. Teachings on puberty should correlate to the age of menarche and prepare girls for the process in primary school (Pillitteri 2011, 15).

In order to teach menstrual and puberty education, educators need to be trained on the topics and how to share that information most effectively. Culturally embedded stigmas and myths surrounding menstruation can prevent teachers from bringing up the topic. For instance, one UNICEF spokesperson stated, “Boys laugh at girls then the teacher stops” (Pillitteri 2011, 15). Another option is to have trained guest professionals such as NGO staff or medical professionals from the community come to the schools to conduct puberty education. This disallows the teachers to learn the information and educate their own classrooms, but could have more productive outcomes if the education received is more effective and informative. It is not definitively known if menstrual, puberty, or sex education performed by teachers or aid groups is more effective, but training to handle such topics is important to successfully tackle these types of cultural, social, and biological topics.

One organization working to improve puberty and sexual education through empowerment is the Straight Talk Foundation located in Uganda who have developed a number of programs. The organization is particularly known for their puberty education curriculum and

training (Straight Talk Foundation 2017, 2017 PDF). The Montgomery et al. study found that even 1.25 hours of education from Straight Talk, that covered puberty changes, menstruation, early pregnancy, life skills, prevention of HIV, sexual assault mitigation, healthy relationships, and friendship formation and goal setting, actually had the highest retention rates of girls (Montgomery et al. 2016, 5, 11). In Bangladesh, a six-month education course with 416 girls ages 11-16 resulted in a 31% increase about menstruation knowledge and a 5.1% decrease in self-reported absences (Alam et al. 2017, 6). Another strategy, created by UNICEF and adapted by other companies, is the use of puberty books- a picture book that assists girls through puberty and menstruation by telling the story of a girl who is going through the same transition and have been well received in girls pre and post-menarche (Sommer 2011, 8). Puberty books do not require investment or guidance by people, making them an intervention with only upfront investment (Blake et al. 2017, 3). Puberty books are excellent targets for education and destigmatization; however, the scarce research that has been conducted has indicated that it would best be accompanied by other interventions (19). Other regions have used similar story telling techniques such as menstrupedia in India by upwards of 90 schools, 25 NGOs, and 85,000 girls to break taboos and educate about menstruation (Menstrupedia 2014, homepage). These forms of education permit girls and boys to educate themselves about puberty in a more private and easy-to-understand fashion, minimizing embarrassment and social constraints of puberty education in group settings. The research on these tools are few, but they have shown successful education and destigmatization outcomes (Sommer 2011, 8). There are many proposed tools for puberty education in the literature and more that will be developed. As these are new management tools, more confirmed successes will be required to show what solutions will be the most effective.

## 5- Pain Mitigation

Many women and girls experience pain associated with their menstrual cycles, often displayed as cramps, migraines, or back pain. Some experiencing menstrual pain so severe that without analgesics they are unable to operate in their daily functions. In multiple studies, girls identify the need for pain management medications (see throughout Pillitteri 2011; Montgomery et al. 2016; Alam et al. 2017; Hennegan et al. 2016; Boosey et al. 2014). Although most studies do not include pain mitigation as a primary indicator for poor MHM, girls continue to address the need (see throughout Pillitteri 2011; Montgomery et al. 2016; Alam et al. 2017; Hennegan et al. 2016). In Malawi during every interview conducted, girl's discussed pain and expressed reasons why they believed they were experiencing it. Some girls believed their pain was due to witchcraft, while others believed that they could not afford analgesics. Some of the girls even believed that analgesics would cause a girl to become sterile so they preferred to stay home (Pillitteri 2011, 11). This study found significant cultural myths surrounding menstruation, such as these about pain mitigation, that made MHM even more challenging. In South Africa, Scorgie et al. (2015) used a body mapping exercise that illustrated menstruation as "...a largely debilitating experience, with symptoms including heavy bleeding, severe cramping, bloating, nausea and vomiting, skin blemishes, short-temperedness, back-ache, lack of confidence, depression, and fatigue," primarily highlighting the varying amounts of blood lost and their pain associated with menstruation (166).

In Ethiopia, girls primarily identified MHPs and pain as the primary sources preventing girls from comfortably attending or engaging in school. Seventy two point five percent of girls in South Sudan experienced severe pain (see Blake et al. 2017, 17; Tamiru et al. 2015, 99). In the same study, Tanzania showed similar results as 40% of the girls in the study said pains such as



stomach ache, back pain, and headache prevented them from comfort in class (Tamiru et al. 2015, 99). In all five of the countries examined in Tamiru et al.'s (2015) study, girls believed that having sex with a boy will cease menstrual pain (95). Girls are nearly universally addressing menstrual-associated pain in preventing their school attendance. However, MHM research and interventions are just beginning to address it rather than just acknowledge its existence. Access to pain management strategies is essential for girls to obtain "...adequate, affordable pain control... at all schools" as part of a holistic menstrual hygiene management strategy (Pillitteri 2011, 18).

## **6- Head Women Teachers**

Unfortunately, the majority of teachers are infrequently (if ever) trained in teaching menstrual hygiene or puberty and consequently rarely teach it to their students. Male teachers often have even less knowledge of menstruation and feel it is either inappropriate, taboo, or unimportant to discuss with students. As Audrey Kettaneh of UNESCO said, MHM is either taught late or not at all. The same article wrote, "If it's not monitored, it won't be taught. Teachers find it a difficult topic. They prefer softer topics" (WSSCC 2013, 6). Because of ignorance and taboo surrounding menstruation, some staff members in the Malawian study believed the girls were managing their menstruation just fine and did not require incinerators, contrary to what the girls had indicated (Pillitteri 2011, 11). Additionally, if teachers are not accessible or open for discussions on MHM, then missed attendance could be marked as an illness or from another cause as opposed to menstruation, leaving even more skewed attendance records (12). As discussed in the puberty education portion, teachers should be trained to understand and teach menstrual hygiene. The first point of contact for this education should be

the head woman teacher. Having a reliable, female teacher is invaluable to promote security and advocacy in a school setting. They can act as distributors for sanitary products and menstruation materials, puberty and menstruation support, while also identifying girls who are struggling, advocate for their students, and are excellent sources of information for researchers (see Montgomery et al. 2016, 6; Alam et al. 2017, 1). For example, one teacher in KwaZulu-Natal recalls an instance where a girl leaked through her pad onto the chair. She noticed the menstrual blood and casually asked the rest of the class to “go out and pick papers” except the menstruating girl and a friend of hers, who she then instructed to clean up the mess (Devnarain and Matthias 2011, 32). Since the school did not have access to water, the friend was told to run to a neighboring house and get five liters of water and clean the chair off while the teacher escorted the girl to the toilet and assisted her with cleaning her clothes, gave her a spare sanitary pad, and sent her home. This story reveals multiple local realities, including a quick-thinking and supportive female teacher who protected the dignity of her pupil.

Teachers throughout low-income and developing settings are not equipped with these types of strategies to support their pupils, regardless if they are interested or willing. Furthermore, 25% of schools who had MHM education in Zimbabwe had male educators teaching the curriculum which caused girls to be more ashamed or less responsive to MHM education, decreasing its effectiveness. On average across the five countries researched, Tamiru et al. found that schools had 13 male teachers and two female teachers on average, with some schools who had zero women teachers (Tamiru et al. 2015, 96). In Bangladesh, only 22% of the secondary school teachers were women compared to the 61% of primary school female teachers, meaning that during their key puberty ages the girls have fewer resources to obtain menstrual assistance (Alam et al. 2017, 8). This indicated that not only do women teachers need to be

educated on MHM, but more women are needed generally in the education system in order to promote MHM education and support. This guidance and support at school can promote confidence and community at school, allowing girls to feel safe enough to stay in school (Adinma and Adinma 2008, 81). It is essential for a head woman teacher to exist and champion the schoolgirls' wellbeing, particularly associated with sensitive and pivotal topics such as MHM.

## **7- Inclusion of Boys and Men in Menstruation**

Menstruation is seen as a women's issue in contexts from contemporary U.S. to the Global South and from ancient texts to modern beliefs. Mahatma Gandhi himself believed that “menstruation was a manifestation of the distorted souls of women because of their sexuality.” He also believed that “...when a woman's soul became pure, then she would automatically stop menstruating” (Tan, Haththotuwa, and Fraser 2017, 129). These disappointing beliefs have profound impact when they are vocalized by a leader. Bailey (1993) argues that to create a gender-inclusive narrative, the inclusion of both women's and men's voices are essential (121). Men are the dominant social figures of patriarchal societies, so their inclusion is additionally key to social change. Anecdotes throughout menstruation literature indicate that men simply have little knowledge of menstruation and, paired with cultural taboos about pollution, little of their attention is spent to understand or assist with MHM. Rolf Luyendijk of UNICEF highlighted this gap between men and menstruation:

Menstrual hygiene has always been shrouded in secrecy for me and I believe it is fair to say that I speak for most of the world's male population. It had never

occurred to me that women and girls 'never wear white' when they have their period. As it will never have occurred to the thousands and thousands of headmasters of schools over the world that burden girls with light colored uniform dresses. (WSSCC 2013, 7)

Boys and men often have an unsystematic, disorganized way of learning about menstruation because they themselves never experience it and women rarely discuss it with them as Freidenfelds (2010) points out in the U.S. context. Often, boys hear about menstruation from other boys in reference to sexual encounters, and husbands are often only aware of their wife's menstrual cycle in regards to sexual availability (17). Because of taboos, stigma, lack of knowledge, and lack of interest, girls may not feel comfortable approaching male teachers about this topic, potentially resulting in negative outcomes (Alam et al. 2017, 8). A crucial component that emerged from the surveys in Boosey et al.'s (2014) study in Uganda included the "...male headteachers' lack of interest in and knowledge of menstruation" (4). During interviews, the lack of information that the male headteachers displayed proved that they either had little interest in the topic or that they simply do not understand the dilemma because it is not discussed due to its stigmatization. Often men and boys view menstruation as a woman's problem. Because of this lack of understanding or interest, male headteachers do not often prioritize allocating school funding towards sanitary products (5). They also may "feel [that] cultural norms forbid them from discussing such topics with young girls," and therefore may not feel permitted to be a part of the conversation (WSSCC 2013, 6). Another negative outcome from men's lack of knowledge is that girls felt they could not discuss menstruation with their fathers, brothers, uncles, or any male relative, resulting in not only a lack of fund allocation and support at school, but at home as

well (Pillitteri 2011, 16). Purchasing sanitary products monthly in Uganda is the equivalent of four radio batteries or a family's monthly supply of paraffin. Firstly, if a man controls the budget and has no knowledge of MHM needs, she is unlikely to obtain this access. Secondly, sanitary products can cost up to 1/10 of a family's monthly income so the affordability is unlikely for one daughter, let alone if there are multiple girls in a household (FAWE 2005, middle of report). Furthermore, there is a perception in parts of Uganda that if fathers talk about menstruation matters with their daughters, they will die (Tamiru et al. 2015, 95).

Girls in Malawi and Ethiopia report experiencing physical, verbal, emotional bullying and sexual exploitation from boys at school because of menstruation and puberty that can result in increased shame, fear, or even contribute to the dropout rates (see Pillitteri 2011, 15, 18; Blake et al. 2017, 17). In a variety of cultural contexts, if a girl is seated next to a boy she may fear standing up in class during her period in case she has leaked through her cloth (Pillitteri 2011, 15). One Filipina woman in Dammary's interviews recalls being asked by her teacher to go to the front of the class to write something on the board, but a classmate stopped her once she stood up as she had blood on her clothes. The girl sat back down to hide the stain and her teacher "...was angry, wanted to smack me, but did not" when she refused to go to the front of the class (Dammary 2016, 27). Some girls would never wash their menstrual cloths at school or even change or discard them in fear of revealing their menstrual status to a boy and getting tormented for it (Pillitteri 2011, 15). Fear of disclosing their menstrual status is commonly exhibited through the fear of someone smelling menstrual blood while using sanitary products as well as once they have been disposed of which has been observed in contexts such as the U.S. and South Africa (see Scorgie et al. 2015, 167; Freidenfelds 2010, 19). Immediately following menarche, girls are taught to hide their menstruation and their MHPs from boys and men, as menstruation

“...is not attractive” (Scorgie et al. 2015, 167). Menarche is also commonly a period to instill cautionary behaviors in young girls (Freidenfelds 2010, 18). In Colombia, girls entering the *senorita* phase (post-menarche) are heavily warned to fear boys and closely watched by their relatives, but not told why. Scrimshaw (1978) also notes that girls have “...very little autonomy” during this phase (Scrimshaw 1978, 43-44). Girls also report being pressured by boys to engage in sexual activities once they have reached menarche.

Menarche can be seen as an indicator of sexual availability regardless of the girl’s preparedness for sex and sexuality. In Rice’s (2014) study, a woman highlighted this as a confusing transition because her male friends now viewed her as a sexual being and their relationship quickly changed (197). As discussed in case study three, Tamiru et al.’s (2015) study found that girls in Uganda, Tanzania, and South Sudan were accepting bribes from boys for sexual activities to support their supply of MHM materials (99). Although cultures commonly deny it, “...girls’ bodies are not suddenly sexed at puberty,” rather social forces place sexuality on her body without her consent (Rice 2014, 185). Puberty and sex education are essential for school-aged boys to dispel myths and cultural practices that make girls feel obliged to participate. It is imperative for the MHM community to explore boys’ and men’s puberty and sex education at more depth. As the transcript from the UNICEF conference stated, “Before any further steps, the first task is to make this unspeakable topic speakable” (WSSCC 2013, 5). If boys and men are educated about the biological processes of menstruation and puberty, girls may fear less and learn better. One girl suggested that their puberty books should be shared with the boys to help them understand female changes as well (Blake et al. 2017, 17). In order to thrive through menstruation and beyond, girls need to be supported by not just other girls and women, but by boys and men too. As Borysenko (1996) wrote, “yes, there are dangers lurking out there,

but perhaps the greatest danger overall is the failure to nurture courage and initiative in our daughters. Without that nurturance, we will raise another generation reflecting the myth of the helpless woman” (31).

## **8- Support at Home**

The following two components have similar themes that have been weaving throughout this paper, but it is important to reiterate these subjects to address a holistic menstrual hygiene management framework. Having a support system at home has the potential to reduce stigma, increase confidence, prioritize healthy MHM strategies, dispel myths, and create healthy communication. As the WSSCC (2013) comments, “In poor and richer countries; in all sorts of family backgrounds and cultural contexts, one truth is usually universal: women and girls are supposed to cope with menstruation silently and invisibly” (6). It is taboo to even discuss menstruation between women and girls, let alone with men and boys. Menstruation is so shrouded in secrecy that any evidence of one’s menstrual status should be hidden at all costs, even between mothers and daughters (Freidenfelds 2010, 15). There has been significant discussion thus far about menstruation practices and beliefs in school; however, beliefs and practices at home are the opposite and essential half to MHM that is often acknowledged but not acted upon. At home practices and beliefs transfer directly to the actions of a girl in school, and restrictions created by parents or guardians of schoolgirls have shown an impact in school attendance (Alam et al. 2017, 8). In Bangladesh, 71% of the girls indicated that they were “...not allowed to go out/go to certain places...,” 51% were “...not allowed to perform religious activities...,” 32% were “...not allowed to cook/eat certain food...,” and 7% were “...instructed not to walk fast during menstruation...”. Less than 1% of girls in Bangladesh learned about

menstruation from their teachers pre-menarche, but 26% of girls learned about it from a family member pre-menarche indicating that education at home is important to producing menstruation awareness (4).

In Malawi, girls rarely discuss menstruation with their mothers, afraid that “...she will die.” Instead, they turn to other female family members for instruction, but often receive poor information as their family members also had little to no MHM education (Pillitteri 2011, 13). One girl remarked, “My mother told me I would die if I showed anybody the blood” (14). Girls in this setting were also told that constant washing was proper and felt dirty at school where they could not follow their family’s orders. Additionally, girls had other practices to maintain such as segregated bathing from their families, ceasing playing with non-menstruating girls, and to discontinue talking to boys. Pillitteri also found that in some ethnic groups, a sexual initiation ceremony performed by a man, called *fisi*, was to be arranged once menarche has been reached (Pillitteri 2011, 13). Educating girls about safe menstruation must start with educating women as well. Their mothers and other family members often are the people closest to a girl to provide her with support, hygiene supplies, and proper knowledge. In all five countries examined in Tamiru et al.’s (2015) study, more than 80% of the girls received their menstruation knowledge from their mothers (96). Educated girls can likewise be informed at school and turn to assist her family and community with their menstrual knowledge and practices through dialogue. Programs such as Straight Talk in Uganda and the Creative Center for Community Mobilization (CRECCOM) out of Malawi are working to train mothers and families about puberty and menstruation education through girls, mothers and communities to ignite social empowerment (see Straight Talk Foundation 2017; CRECCOM 2017). In Malawi this meant that girls felt free to dry their sanitary pads without their normal fear of witchcraft (Pillitteri 2011, 16). Utilizing



women and families to support girls has the opportunity to keep more girls in school and create healthier, more empowering views of menstruation, puberty, and womanhood.

## **9- Destigmatization**

Menstruation is normal. Menstruation is not, however, discussed or viewed as normal or positive in most cultural contexts, with 85% of the women in Rice's study remembered their own menarche as either a mixed or negative experience (Rice 2014, 200). She also notes that there are both joys and traumas in becoming a woman (186). Since biologically regular menstruation is considered a sign of good health for a girl or woman, than women should be encouraged to maintain normalcy in their lives during their cycles (Moronkola and Uzuegbu 2006, 85). Stigmas and myths about menstruation are passed down through generations and are managed in silence (WSSCC 2013, 2). Bodily processes and stigmas surrounding menstruation impact girls, particularly in low-income settings where they have little to no access to the above management strategies. It has been observed in the Bangladeshi context that girls who had negative perspectives and beliefs regarding menstruation are more likely to self-report academic absences, so continuing research needs to be conducted aiming to find additional quantitative and qualitative evidence (Alam et al. 2017, 8).

Observations in Nigeria have suggested that the age of menarche is decreasing (Moronkola and Uzuegbu 2006, 85). If true, early-onset menstruation could have the potential to increase the psychological damage to young girls during the menses and could have negative effects on their outcomes and education. In ancient China and ancient Greece, girls were calculated to begin menses between 13 and 14. However, in Ayurvedic traditions and in medieval England, 12 years old was predicted (Dammery 2016, 8-12). Although the onset of

menstruation varies per girl, presently girls are observed to reach menarche as young as 10-11 years old (see Dammary 2016, x; Tamiru et al. 2015, 97; Pillitteri 2011, 15). Few researchers have sought to understand the impacts of early maturation on young-girls. Often once puberty occurs and the body of a girl begins to make changes into womanhood, girls can become sexualized. Many girls "...were uncomfortable with their early maturation due to the cultural belief that femininity is equivalent to sexual availability, which contributed to their harassment" (Rice 2014, 184). Cross-culturally, menarche is seen to be the body's signal for reproduction; thus if the age of menarche is decreasing, so is the age of sexually available girls. Because of the symbolism surrounding menarche, it is an obvious indicator of social or cultural maturity and transition. A premature onset could have critical consequences.

Menstrual stigma, especially for those reaching early menarche, causes psychological distress, a symptom displayed in nearly every source directly pertaining to menstruation that this paper includes. Although menstruation is normal, it can cause severe physical or psychological effects, including "...psychological symptoms, hormonal effects, dysmenorrheal complex and restrictive effects during [the] actual menstrual period" (Moronkola and Uzuegbu 2006, 87). Women practicing chaupadi are seen as polluted and contaminated and are not allowed to touch communal water taps or cook food in fear of spreading her disease; women in Taiwan avoid their gods during their menstrual cycle to prevent disgrace; Nigerian girls believe menstruation was a curse from god or because of a sin committed; Malawian girls believed that they would be die if anyone saw their menstrual blood; and a Ugandan girl feared the revealment of her menstrual status if her cloth fell out when she was beaten in school (see e.g. "Chaupadi In The Far-West" 2011, 1; Rustad 2013, 1; Furth and Ch'en 1992, 35; Adinma and Adinma 2008, 75; Pillitteri 2011, 14; Boosey et al. 2014, 4). To uncover collaborative solutions to MHM, cultural stigmas of

menstruation must be diminished. “The issue of stigma has always been there. I’m a physician,” said Dr. Charles Senessie, President of Afro-European Medical Research Network, “and we are all guilty of that. A problem talked about is a problem halved” (WSSCC 2013, 6). The conversation regarding menstruation in anthropology and beyond has not fully embraced a focus on communication strategies to directly target and eliminate menstrual taboos. Through destigmatization, menstrual hygiene management can not only provide girls with solutions to manage their menstruation, but can also deconstruct the overarching culture of silence that forces girls to be prisoners of their own bodies. As Plan International wrote, “Periods can make us feel uncomfortable, but talking about them shouldn’t” (Harris 2017, introduction). Destigmatization is also a long, challenging process that can take decades to overcome, which is exactly why it should be addressed in a study. There are also some stigmas that are more important to address at the forefront of a research study such as those that directly inflict fear or suffering on women and girls. For example, these could be the ones where girls feel that menstruation is a curse or punishment for their sins or wrong-doings, prevent girls from maintaining their daily lives including attending school, that cause psychological distress, and fear-based menstrual-seclusion. Beliefs that do not directly impact a girl’s wellbeing are not of primary concern, but should be addressed during follow-up studies.

### **Ethics of Menstrual Hygiene Management**

When dealing with human subjects, health issues, and children, it is imperative to have an ethical framework. Applied anthropology is committed to social change through collaborative and multidisciplinary research, whose primary consideration should always be the rights and wellbeing of all stakeholders and those who are affected by the research conducted as well as to

listen to and advocate for their views and voices (Marshall 1992, 2). Long-term social repercussions must also be taken into consideration and this is important for menstrual hygiene management research. Currently, the research being conducted is short-term, often in the format of a baseline study and an introduced intervention, and then a follow-up study. These studies are important to understand a snapshot of local reality and the intervention(s). However, they also have the potential to create a system of dependence or perpetuate the cycle of aid organizations and individuals who leave without implementing a strategy for continued growth. Short form development research is unfortunately too common, and longer-term programs coupled with monitoring and evaluation strategies can be utilized to increase the continued ethical analyses of programs.

When conducting research in countries post-colonialism, which includes many countries in the Global South, their particular legacy of colonialism should be understood as they can directly impact behavior and behavior change. Limoncelli addresses the Ugandan context to understand “...issues of language, motivation for learning, and how to best manage expectations in the current day cannot be considered without knowing the foundations of these issues” (Limoncelli 2010, 26). Furthermore, the country experienced decades of civil wars post Idi Amin and the conflicts from his regime have trickled down to contemporary Uganda. Post-independence politics and policies must be taken into account in order to understand challenges seen in education and sanitation, similarly seen in post-Apartheid South Africa (Limoncelli 2010, 26; Scorgie et al. 2015, 162-63). Neo-colonialist power structures can be created through dependence, particularly in economic settings that continue to struggle after independence.

Critical medical anthropology shows that the ethics of aid and project interventions must also include a discussion of power, particularly in low-resource settings, and especially when

introducing interventions such as sanitary products, education tools such as puberty books, analgesics, handwashing stations, bathrooms, puberty or sex education courses, or any other product or service. The potential for heightened negative social, physical, and psychological experiences may increase for girls if they partake in research where they are given products or services, but no way to continue their utilization. Due to funding restrictions and other limitations, not everyone can receive the interventions either. Who should receive these products or services and who should be left out? When picking a control school or multiple for a study, what happens to that entire community of girls who were excluded? How are those decisions made and who makes them? Additionally, what happens when the girls who received the reusable sanitary pads run out of their supplies or funding, but who are now equipped with the knowledge of how poor management can be harmful for a girl's body? They have now become accustomed to receiving free or subsidized sanitary products and transitioning back to poor MHM practices could present psychological or health issues. Is it ethical to introduce these interventions if the research is only short-term or has limited funding? Furthermore, the implementation of MHM strategies has the potential to fulfil a girl's fear of people knowing her menstrual status, igniting the opportunity for further stigmatization, ridicule, or negative attention. Psychologically, does the implementation of MHM strategies have worse effects on their wellbeing or safety than poor MHM would (Montgomery et al. 2016, 20)? It is imperative for confidentiality to remain secure and respected and names or descriptions of participants should not be used unless there has been written consent given (Tamiru et al. 2015, 94). Consent to study a girl's MHM practices, either verbal or written depending on the situation, is essential to ensure there is no unwanted disclosure. All findings from research should be reported to stakeholders, participants, and the schools.

## **Implementing MHM: From “What” to “How”**

As proposals for improving the conditions of the subjects are imperative in critical medical anthropology, ethical and effective behavior change strategies should be adopted when addressing MHM. Before any of the holistic components are implemented, the political, cultural, and economic factors affecting the target population must be understood. As this holistic approach is primarily geared towards LMICs, the behavior change framework needs to include an understanding of shifting behaviors in these settings. MHM is less about changing the behaviors of menarcheal girls because of their desire for or comfort with their current management strategies, but is rather an issue of access. Therefore, incentivizing girls to participate will be likely be unnecessary in the initial implementation phases. One option for behavior change is social and behavior change communication (SBCC). Gendered understandings and targeted strategies can assist the researchers in understanding and promoting equity for women across a variety of health platforms using “...gender transformative tools” (Johns Hopkins University 2016, SBCC information page). Health interventions that have utilized SBCC include HIV testing and condom use in Malawi, fighting malaria in Mozambique, or infant and child feeding practices in Ethiopia (see Kaufman et al. 2014; Arroz 2017; Sunny et al. 2016). Such strategies can assist in directly targeting the gender norms and taboos intertwined with MHM to destigmatize menstruation. Monitoring and evaluation of implementations are strongly recommended to understand long-term impacts and to improve MHM practices from the baseline study.

The agenda of those implementing the holistic strategies and stakeholders should be one of empowerment, meaning significant inclusion of the targeted communities of girls and women.

All of the nine steps of a holistic MHM should be included in implementation. A substantial barrier for MHM is funding as these interventions, specifically when combined in a holistic manner, are very expensive. However, the invisible factors are less expensive than the visible ones and are imperative to address. Holistic menstrual hygiene management includes puberty education for boys and girls, male and female teachers, and community programs. It also requires significant funding for the best-suited MHPs, which should continue to be subsidized or provided throughout a girl's education and ideally beyond. Furthermore, a holistic MHM program will often require expensive improvements to WASH facilities as well as access to analgesics and other pain mitigation aids. These costly interventions are essential, so a strategy for assistance to schools, communities, families, and local stakeholders needs to be formulated. Tackling all nine steps to a holistic menstrual hygiene management in schools is tricky, expensive, and time-consuming. The following approach to executing MHM interventions will directly mirror the Zambian government's 2016 MHM guidelines. The reason I believe this strategy is ideal is because the intervention initiates the building of WASH facilities first. It then navigates through MHM in a systematic way that will allow all aspects of a holistic menstrual hygiene management to be addressed.

This first step will address two of the nine aspects: clean toilets and handwashing. Firstly, toilet designs must include 1) Access to water inside the facility for MHM, 2) soap for handwashing, 3) screen wall and lockable door for privacy, but allowing enough light to illuminate the inside of the facility, 4) integrated toilets that combine toileting facilities with menstruation wash rooms. Schools that do not have access to running water should have a 20 litre water tank with consistent filling scheduled and budgeted. Facilities should be gender-separated and reside as far apart as possible (ideally on opposite side of the school) to allow for

adequate privacy. I suggest that there also should be enough toilets for the government-regulated students/toilet ratio (for example, at least one toilet for every 50 girls). WASH facilities should also be determined by age groups to allow for adequate privacy and dignity; for example, they suggest grades 1-4, 5-7, and 8-9. It is essential to create a maintenance plan and budget strategy to ensure these facilities are in working and sanitary conditions. The Zambian protocol suggests the creation of WASH clubs in each school that are led by “the Focal Point Teacher,” or what I have referred to as head woman teacher. These student groups could also lead the charge on menstruation normalization, destigmatization, education, and a support group for menarcheal girls. The Ministry of Education also suggests that all students are trained on sanitary toileting behaviors and that older students should be involved with cleaning as well (Zambia Ministry of Education 2016, 16).

Disposal of sanitary products is also included in the holistic MHM model. The Zambia Ministry of Education highlights that disposing of MHPs in pit latrines is hazardous, recommending an incinerator close to the facility for disposable absorption methods. Schools need to provide incinerators on site and close to the toilet or latrine for dignity purposes if disposable methods are used. If reusable MHPs are utilized, schools need to provide carrying bags (specially designed ones or “improvised” ones) so the girl can have a safe place to hide soiled materials. The Zambian MHM guidelines do not address a discrete place for girls to wash and dry their reusable pads, but this is an important aspect to a WASH facility focused on MHM. They did outline the need for schools to provide carry-home sacks to wash them at home. Education about disposal and ideal toileting behaviors should be addressed to ensure proper and safe usage. Below are some images of example MHM WASH facilities (Zambia Ministry of Education 2016, 17).





Figure 10: Images of good MHM WASH facilities (Zambia Ministry of Education 2016, 17).

These toilets have all outlined requirements, except a place to wash and dry reusable MHPs, of an ideal MHM WASH facility in a low-resource setting school.

The next step to implementing a holistic menstrual hygiene management program is education, which will address four of the nine factors: puberty education, head woman teacher, destigmatization, and inclusion of boys and men. Firstly, girls, boys, female teachers, and male teachers must be educated on menstruation facts to eradicate menstrual myths and lore. After being translated into local languages, WASH “posters, pamphlets, flyers and other IEC materials must be produced and printed.” Puberty books would be an excellent source here as well. Extra-curricular activities, either set up by head teachers, WASH clubs, or other stakeholders, should be implemented. These could include “drama clubs, debates, songs, quizzes, and games” to facilitate conversations on menstruation for both students and adults. The government’s Ministry of Education should provide adequate funding and support for education strategies and ensure that Menstrual Hygiene Day (May 28th) is used to raise awareness and support. MHM should

also be included in all governmental WASH programs. Female teachers, led by the head woman teacher, should hold “informal ‘let’s talk about it’ sessions with girls” to encourage openness between peers and students and teachers. Training for older girls to educate and mentor younger girls is also a strategy that could also be attempted (Zambia Ministry of Education 2016, 18).

Step three to implementing a holistic MHM is addressing access to menstrual hygiene products. Although MHPs are commonly seen as the primary barrier for girls in school, here it is addressed first. Without these other two steps prior to access to MHPs, girls may not have the proper facilities or education to support these practices long-term in a healthy and effective manner. It is important for schools to provide girls *and* female teachers with adequate sanitary product supplies because it is essential for teachers to practice and set an example of healthy menstruation management. Access to MHPs should not be limited to urban or higher-income locations, but must include rural and low-income communities. School administration should allocate money from their budgets to include MHPs. To obtain this funding, the Zambian Ministry of Education suggests allocating portions of school grants, PTA funds, or community contributions. “Hygiene Kits” that consist of toilet tissue, soap, disposable MHPs, and reusable MHPs should be created. I believe that this kit could be improved if sanitary bags were included to transport soiled items, plus a couple pairs of underwear to ensure the girl has something to attach these reusable and disposable pads to, and some analgesics. To make this kit even better, a puberty book specialized to the country or region and in their own language would be another excellent addition (Zambia Ministry of Education 2016, 18). The Zambia Ministry of Education suggests capacity building programs to teach girls and women how to make their own safe and reusable MHPs, which would be a low-cost option (Zambia Ministry of Education 2016, 18). They propose that extra pads could be made at lower costs and could be used to stock at school

for emergencies or dispersed out into the community. This training could be incorporated into school curriculums through home economics and needlework classes (which are not uncommon in Zambia) or through the school's WASH club. Safe storage and cleaning of MHPS are also important to train girls and women on (Zambia Ministry of Education 2016, 19).

Step four to addressing a holistic menstrual hygiene management is pain management. Schools should have a designated space for girls to go to access menstrual pain relief or lay down if needed. The Ministry of Education suggests schools consult with local health professionals to learn how to assist girls with menstrual pain in a healthy and educated way. If the school has a budget for it or if they are able to find medical support, analgesics should be stocked and safely stored for girls to go and request from a head woman teacher. These strategies will allow girls to feel supported at school and will hopefully prevent girls from missing classes due to pain.

Step five is implementing a head woman teacher if there is not already one present. If a head female teacher is not an option, an older female student who possesses the same desired qualities and who can manage responsibilities will be okay. If this is not available, a MHM educated and approachable male teacher would be a third option. The responsibilities of this person would be 1) to manage the WASH facilities, 2) ensure access to the MHPs is consistent, 3) lead educational programs in schools on MHM, 4) lead educational programs for community members, other teachers, and parents, 5) create and lead the WASH club in their school, 6) provide one-on-one counseling and support for girls and boys, 7) be the school's MHM champion and advocate for budget allocation and support for MHM programs, 8) create and implement the curriculum to help girls produce their own reusable MHPs, and 9) provide girls with access to a safe space and tools for menstrual pain management (Zambia Ministry of

Education 2016, 20). This person also needs to have access to educational materials such as puberty books, pamphlets, flyers, as well as analgesics, MHPs, MHM toolkits, and WASH cleaning supplies. The head woman teacher must be proficient in the local language(s) and have initial and continued training (21).

Finally, step six addresses community and family support. The Ministry of Education suggests that one member of the PTA or a parent group should have a focus on MHM and communicate and coordinate with the head woman teacher and WASH club. These parent groups should also be trained on MHM and work to destigmatize menstruation in their own households and communities in order to support healthy MHM practices in girls and women. In order to further create normalcy and healthy management strategies surrounding menstruation, community leaders and key stakeholders should also be educated on MHM. Communities should rally around girls to create awareness campaigns for MHM Day and throughout the year. Families and communities should be strongly educated and encouraged to keep their girls attending and finishing school (Zambia Ministry of Education 2016, 21).

These interventions are complicated, long-term, and expensive and need to be addressed on a national, regional, and district basis governmentally. Governments need to prioritize, implement, and scale country-wide MHM and monitoring and evaluation guidelines and regulations to ensure best practices. This initiative might be best-suited to be housed in Ministry of Education, as it was in Zambia (2016), but should also include other departments. In Zambia this proposal included Ministry of Health, Ministry of Local Government and Housing, Ministry of Finance, Ministry of General Education, and the Ministry of Gender and Child Development (Zambia Ministry of Education 2016, 24-25). Governments, particularly those in LMICs are

likely unable to bear the entire expense for holistic MHM interventions by itself. Aid assistance and support from NGOs, INGOs, nonprofits, and the private sector should be sought.

As MHM is a newer field, attention to its importance is only beginning to be acknowledged. In 2014 UNICEF and Columbia University teamed up to initiate the first *MHM in 10* meeting that included academics, donors, NGOs, the United Nations, and the private sector to come together and collaborate about MHM in schools. These participants came from a wide-variety of perspectives such as policy, WASH, education, gender studies, sexual and reproductive health, and child development. Together, they created a program and strategy to address MHM issues by 2024 (Columbia University and UNICEF 2016, 4). Every year a group gathers to brainstorm how to continue the MHM global agenda based on the Sustainable Development Goals. The goal: by 2024, "... girls around the world are knowledgeable about and comfortable with their menstruation, and are able to manage their menses in school in a comfortable, safe and dignified way" (Columbia University and UNICEF 2016, 7). This body aims to unify MHM protocols and research in order to promote dignity, equity, and wellbeing of menarcheal schoolgirls. By 2024 I hope this coalition is a key catalyst to menstrual freedom.

Unfortunately, these *MHM in 10* goals are far from a reality and more awareness is needed. One way to increase awareness is through media campaigns and global education about menstruation. Targeted campaigns about MHM need to become viral in Western countries to provide awareness and support, both monetary and non-monetary, to girls and women in targeted LMICs. Currently, global understanding of MHM issues is on the rise as there is a new period revolution occurring. It is becoming more culturally acceptable to discuss menstruation outside of just an academic or sexual context. Bodyform recently aired a television ad using red liquid instead of blue liquid to demonstrate absorbency in one of their products (Viv 2017, throughout).

Fu Yuanhui, a swimmer that competed in the Rio Olympics in 2016 and placed 4th in the women's 4x100 meter medley relay, shattered taboo barriers when she discussed being on her period during the race. She discussed her period on international television, she swam during her period, and she discussed the pain she was currently experiencing from it, all of which are nearly never discussed publicly (Gharib 2016, throughout article). Kiran Gandhi ran the 2015 London marathon and chose to free-bleed "in the name of many" because she didn't want "to prioritize 'somebody else's comfort' and to protect 'somebody else's eyes over my own ability to run the marathon.'" (Maloney 2015, throughout article).

"Women's bodies are supposed to constantly be ready for public consumption," she said. "The second that [I do] something that is not necessarily about [another person's] comfort, or about their enjoyment of *my* body, it makes everyone so deeply uncomfortable." Using her period flow as a form of protest would speak to her belief that the period is completely natural—"something we should honor, enable, allow"—but is considered shameful and still lacks the comforts of language and supportive community in many places around the world. "To me, that is the definition of 'oppressive': when you can't speak about something that is natural and pure, of the body and completely okay," Gandhi said. (Maloney 2015, fourth paragraph).

After the harsh criticism she experienced for this choice, Gandhi has gone on to become an advocate for her "sisters" who do not have the ability to access MHPs (Maloney 2015, below first block quote). These forms of periods in the media are bringing menstruation to the forefront of pop culture and contemporary feminism. World Menstrual Hygiene Day (May 28th) is now a

global event based on social platforms that aims to create awareness and empower women and girls in a variety of contexts to not be limited socially or culturally by their biology.

### **Why Prioritize Menstrual Hygiene Management?**

Although menstrual hygiene management is a new field of research, women have been managing their menstruation for thousands of years- so why is MHM important? Is over NGO-ization occurring? Why should menstruation management receive funding in lieu of other public health or WASH priorities? Menstruation is proposed as a “...gender specific barrier to education” (Montgomery et al. 2016, 20). Education is declared by the Convention of the Rights of the Child to be a universal human right for all children. In Africa, every nation other than Somalia have ratified this policy and are legally required to make secondary education attainable for all children, constituting education as a human right “internationally, regionally, and locally” (Limoncelli 2010, 28). To address Ugandan girls’ education, The Girls’ Education Movement, launched in 2001 by the Ugandan government and multiple NGOs, and the United Nations Girls’ Education Initiative Partnership, launched in 2004, were established. However, in 2008 the government passed the Education Act aimed to revise education policies in the country, yet there was little acknowledgement of the significant gender-gap issues as the word “girl” was only used twice and the word “gender” only a single occurrence in the 84-page policy (25). Although legal policies are in place in many countries, the execution of these promises are yet to be acted upon. If the majority of MHM research findings are true and menstruation has a direct correlation with absenteeism or dropout rates, we are denying a girl’s fundamental rights because of her gender-specific biology (WaterAid 2013, 4).

Educating girls is not only radically beneficial for her individually, but “has been proposed as the world’s highest yielding investment for developing countries” (Montgomery et al. 2016, 2). Educated women are proven to be better farmers. 80% of the agricultural labor and 50% of the livestock husbandry throughout sub-Saharan Africa is attributed to women. A significant proportion of the workforce of Africa is involved in some form of agriculture and in Uganda, 82% of the labor force is involved in agriculture. Moreover, research has proven that higher levels of education indicate higher levels of farmer’s efficiency, specifically for women. The World Bank reported that poor education negatively affects economic growth as well as alienating a “...pro-poor distribution of this growth, since women are among the poorest and education is the poor’s most important asset.” Educated women additionally participate in formal economies and actually increase the gains for the economy more significantly than men. Furthermore, in the developing world women receive greater returns on investment from secondary education in comparison to men, 18% for the former and 14% for the latter (Limoncelli 2010, 30). Not to mention that keeping girls in school even one year past the average can increase their expected income by 10-20% in comparison to the 5-15% for boys (30-31). If a girl does not complete her secondary education, she is also not eligible to continue to university and her prospects to compete in a global economy are further limited. If the correlation between menstruation and attendance is indeed as it appears, then menstrual hygiene management is essential not just to the empowerment of the girl, but to empowering economies. It has been accepted for over 20 years that nations with higher levels of education for women experience both more rapid economic growth as well as higher levels of GNP. Viewing the education of girls through this economic lens provides insight into why investing in girls has incredible effects on not only her life, but the life of her family, her community, her country, and the world.



The benefits to investing in girls' education does not stop with economics, but has tremendous effects on other significant indicators such as a decrease in family size, increased literacy rates that allow women to engage in an increasingly global world as well as the one around them, less likely to experience domestic violence, and a decrease of 5-10% in the infant mortality rate, allowing parents to have more security in their children reaching adulthood which additionally decreases the fertility rate (Limoncelli 2010, 30, 35). The importance of these proven outcomes are vital to understanding how empowering girls through education has benefits to themselves and society, however the economic or social benefits of educating girls should not be used as a tool for a greater population manipulation agenda as it has in the past (33-34).

In conclusion, educating girls has unparalleled benefits and is a tool to women's equality, particularly in low-income settings where immense imbalances are present. MHM inadequacies in school are a known barrier to high female educational outcomes.

Not one published study of existing MHM programs demonstrated total success and all called for increased research and/or funding. Every aspect of MHM needs to be researched in larger, longer-term studies that monitor and evaluate a variety of factors. I would recommend a study that would include all components of my proposed holistic MHM, confirming or refuting menstrual-related absenteeism, seeking to understand how or if MHM interventions negatively affect girls, the impact of menstruation not just on absenteeism but on concentration and academic success, the proposed nine holistic components of MHM, as well as furthering quantitative evidence to understand what is already observed in the literature (see e.g. Montgomery et al. 2016, 21; Hennegan et al. 2016, 1-2). Improved menstrual hygiene management "...is a not just a women's issue, but a human one" (WSSCC 2013, 4). The

proposed nine-pronged holistic approach to menstrual hygiene management includes access to sanitary products, clean toilets, hand washing facilities, puberty education, pain mitigation, woman teachers/leader in school, inclusion of boys and men in Menstruation, support at home, and destigmatization. These ‘visible’ aspects and ‘invisible’ contributors to MHM could provide girls with the resources and support to manage their menstruation with dignity and unlock the global power of girls through education.

### **Next Steps**

This thesis is only a snapshot of menstruation practices and MHM programs in Western and non-Western societies. It is intended to bring awareness to this biological barrier for girls and women in low-resource settings through an understanding of menstruation past and present. There are many sources I was unable to include in this literature review as the momentum for MHM is rapidly on the rise. In future, I believe that mental-health could also be argued as an added factor, but as mental health in LMICs is only fledgling at this point, I cannot make a claim for the connection to MHM. As I have argued throughout the paper, there is still significantly more research that needs to be completed. I hope that this paper is utilized by others to further progress the field of menstrual hygiene management in a holistic and thoughtful way that moves past just addressing the visible factors of MHM to fully address the underlying issues at play. The original intention behind the work was to translate this strategy for LMICs, but I believe these implementations could be utilized to uncover and address MHM inadequacies in other settings such as low-resource settings in high-income countries as well. Thoughtful and ethical research and programs working to empower girls and women can change the world.

## References

- Adhikari, Ramesh, and Yothin Sawangdee. 2011. "Influence of Women's Autonomy on Infant Mortality in Nepal." *Reproductive Health* 8: 7.
- Adinma, Echendu Dolly, and J. I. B. Adinma. 2008. "Perceptions and Practices on Menstruation amongst Nigerian Secondary School Girls." *African Journal of Reproductive Health / La Revue Africaine De La Santé Reproductive* 12, no. 1: 74-83.  
<http://www.jstor.org/stable/25470636>.
- AFRIPads. Accessed November 12, 2017. <http://www.afripads.com/>.
- Alam, Mahbub-Ul, Stephen P Luby, Amal K Halder, Khairul Islam, Aftab Opel, Abul K Shoab, Probir K Ghosh, Mahbubur Rahman, Therese Mahon, and Leanne Unicomb. 2017. "Menstrual Hygiene Management among Bangladeshi Adolescent Schoolgirls and Risk Factors Affecting School Absence: Results from a Cross-sectional Survey." *BMJ Open* 7, no. 7: *BMJ Open*, 2017, Vol.7(7).
- Arroz, Jorge Alexandre Harrison. 2017. "Social and Behavior Change Communication in the Fight against Malaria in Mozambique." *Revista De Saude Publica* 51, no. 0: 18.
- Baer, Hans A. 1990. "The Possibilities and Dilemmas of Building Bridges between Critical Medical Anthropology and Clinical Anthropology: A Discussion." *Social Science & Medicine*, 1011-013.
- Baer, Hans A., Beale, Cheryl, Rachel Canaway, and Greg Connolly. 2012. "A Dialogue between Naturopathy and Critical Medical Anthropology." *Medical Anthropology Quarterly* 26, no. 2: 241-256.
- Baer, Hans A, Merrill Singer, and John H Johnsen. 1986. "Toward a Critical Medical Anthropology." *Social Science & Medicine* 23, no. 2: 95-98. doi:10.1016/0277-9536(86)90358-8.
- Bailey, Carol A. 1993. "Equality with Difference: On Androcentrism and Menstruation." *Teaching Sociology* 21, no. 2: 121-29. <http://www.jstor.org/stable/1318632>.
- Bennett, Sara, Ligia Paina, Freddie Ssengooba, Douglas Waswa, and James M'Imunya. 2013. "The Impact of Fogarty International Center Research Training Programs on Public Health Policy and Program Development in Kenya and Uganda." *BMC Public Health* 13, no. 1: 770.
- Bird, Higgins, McKay, Camfield, Laura, and Knowles, Caroline. 2010. "Conflict, Education and the Intergenerational Transmission of Poverty in Northern Uganda." *Journal of International Development* 22, no. 8: 1183-196.

- Blake, Sarah, Melissa Boone, Alene Yenew Kassa, and Marni Sommer. 2017. "Teaching Girls About Puberty and Menstrual Hygiene Management in Rural Ethiopia: Findings From a Pilot Evaluation." *Journal of Adolescent Research*, 074355841770124.
- Boosey, Robyn et al. November 01, 2014. "Menstrual Hygiene Management amongst Schoolgirls in the Rukungiri District of Uganda and the Impact on Their Education: A Cross-sectional Study." *The Pan African Medical Journal* 19, no. 253. doi:10.11604/pamj.2014.19.253.5313.
- Borysenko, Joan. 1996. *A Woman's Book of Life: The Biology, Psychology, and Spirituality of the Feminine Life Cycle*. New York, NY: Riverhead Books.
- Buckley, Thomas C.T., and Alma Gottlieb. 1988. *Blood Magic: The Anthropology of Menstruation*. Berkeley: University of California Press.
- Columbia University, and UNICEF. October 26, 2016. "MHM IN 10: Advancing the MHM Agenda in Schools." Third Annual meeting.
- Creative Center for Community Mobilization (CRECCOM). Accessed November 14, 2017. <http://www.creccom.org>.
- Dammery, Sally. 2016. *First Blood: A Cultural Study of Menarche*. Clayton: Monash University Publishing.
- Daniels, Lisa, and Nicholas Minot. 2015. "Is Poverty Reduction Over-Stated in Uganda? Evidence from Alternative Poverty Measures." *Social Indicators Research* 121, no. 1: 115-33.
- Deroo, Leslie, and Jay Graham. 2015. "Monitoring and Evaluation of WASH in Schools Programs: Lessons from Implementing Organizations." *Journal of Water, Sanitation and Hygiene for Development* 5, no. 3: 512-20.
- Devnarain, Bhanumathi, and Carmel Matthias. 2011. "Poor Access to Water and Sanitation: Consequences for Girls at a Rural School." *Agenda* 25, no. 2: 27-34.
- Donahue, John M. 1998. "Review of Critical Medical Anthropology." *Medical Anthropology Quarterly* 12, no. 2: 257-58.
- Douglas, Mary. 1969. *Purity and Danger : An Analysis of Concepts of Pollution and Taboo*. London: Routledge & Kegan Paul.
- Farmer, Paul. 2006. *AIDS and Accusation: Haiti and The Geography of Blame*. University of California Press.
- FAWE, Uganda Chapter. 2005. "Menstruation as a barrier to gender equality in Uganda [ARCHIVED CONTENT]." *Communicating Development Research*.

- <http://webarchive.nationalarchives.gov.uk/20090321205646/http://www.id21.org/insights/insights-ed03/insights-issued03-art03.html>.
- "FIELD BULLETIN: Chaupadi In The Far-West." April 2011. United Nations Resident and Humanitarian Coordinator's Office, no. 1: 1-5.  
doi:[http://www.ohchr.org/Documents/Issues/Water/ContributionsStigma/others/field\\_bulletin\\_-\\_issue1\\_april\\_2011\\_-\\_chaupadi\\_in\\_far-west.pdf](http://www.ohchr.org/Documents/Issues/Water/ContributionsStigma/others/field_bulletin_-_issue1_april_2011_-_chaupadi_in_far-west.pdf).
- Freidenfelds, Lara. February 23, 2010. "The Modern Period: Menstruation in Twentieth-Century America." *American Anthropologist* 112, no. 1. doi:10.1111/j.1548-1433.2009.01213\_6.x.
- Furth, Charlotte, and Ch'en Shu-yueh. 1992. "Chinese Medicine and the Anthropology of Menstruation in Contemporary Taiwan." *Medical Anthropology Quarterly* 6, no. 1: 27-48.
- Gharib, Malaka. August 17, 2016. "A Swimmer's 'Period' Comment Breaks Taboos In Sports - And In China." NPR.  
<https://www.npr.org/sections/goatsandsoda/2016/08/17/490121285/a-swimmers-period-comment-breaks-taboos-in-sports-and-in-china>.
- Gottlieb, Alma. 1982. "Sex, Fertility and Menstruation among the Beng of the Ivory Coast: A Symbolic Analysis." *Africa: Journal of the International African Institute* 52, no. 4: 34-66. <http://www.jstor.org/stable/1160093>.
- Harris, Alex. May 25, 2017. "Five reasons we need to talk about periods." Plan International UK.  
<https://plan-uk.org/blogs/five-reasons-we-need-to-talk-about-periods>.
- Hennegan, Julie, Catherine Dolan, Maryalice Wu, Linda Scott, and Paul Montgomery. 2016. "Measuring the Prevalence and Impact of Poor Menstrual Hygiene Management: A Quantitative Survey of Schoolgirls in Rural Uganda." *BMJ Open* 6, no. 12: *BMJ Open*, 30 December 2016, Vol.6 (12).
- Hertz, Barbara, and Gene B Sperling. 2004. *What Works in Girls' Education: Evidence and Policies from the Developing World*. USA: Council on Foreign Relations, Inc.
- Hickey, Sam. 2013. "Beyond the Poverty Agenda? Insights from the New Politics of Development in Uganda." *World Development* 43: 194-206.
- Holden, Andrew. 2013. *Tourism, Poverty and Development*. London: Routledge.
- "Independent Nurse: Journals Watch - Asthma and Hayfever Linked to Irregular Periods. (Brief Article)." 2005. GP, 02.
- Johns Hopkins University. August 24, 2016. "Why Gender Is an Integral Part of Social and Behavior Change Communication Programs." Johns Hopkins Center for Communication

- Programs. <https://ccp.jhu.edu/2016/08/25/gender-integral-part-social-behavior-change-communication-programs/>.
- Kaufman, Michelle R., Rajiv N. Rimal, Maria Carrasco, Olaoluwa Fajobi, Anthony Soko, Rupali Limaye, and Glory Mkandawire. 2014. "Using Social and Behavior Change Communication to Increase HIV Testing and Condom Use: The Malawi BRIDGE Project." *AIDS Care* 26: 46-49.
- Kennaway, E. 1957. Anthropology and Menstruation. *The British Medical Journal*, 2(5045), 645-645. Retrieved from <http://www.jstor.org/stable/25383880>
- Knight, Chris. 1985. "Menstruation as Medicine." *Social Science & Medicine* 21, no. 6: 671-83.
- Konadu, Kwasi. 2007. *Indigenous Medicine and Knowledge in African Society*. New York: Routledge.
- LaVigne, Mike. 2016. The Manly Guide to Menstruation. CluedIn. <https://medium.com/clued-in/the-manly-guide-to-menstruation-833d97d811ea>
- Limoncelli, M. A. 2010. "Barriers to Girls' Secondary Schooling in Sub-Saharan Africa, Focusing on Nigeria and Uganda" Masters Thesis. (Order No. 1487357). Available from ProQuest Dissertations & Theses Global. (822457297). Retrieved from <https://search.proquest.com/docview/822457297?accountid=14593>
- MacDorman, Marian F., Donna L. Hoyert, T. J. Mathews, and National Center for Health Statistics, Issuing Body. 2013. Recent Declines in Infant Mortality in the United States, 2005-2011.
- Maloney, Alli. August 11, 2015. "Kiran Gandhi discusses free-bleeding while running the London Marathon, and using the period as protest." *The New York Times*. <http://nytlive.nytimes.com/womenintheworld/2015/08/11/kiran-gandhi-discusses-free-bleeding-while-running-the-london-marathon-and-using-the-period-as-protest/>.
- Marshall, Patricia A. 1992. "Research Ethics in Applied Anthropology." *IRB: Ethics & Human Research* 14, no. 6: 1-5.
- Martin, Emily. 2010. "Medical Metaphors of Women's Bodies: Menstruation and Menopause." In *Understanding and Applying Medical Anthropology*, 363-74. 2nd ed. New York, NY: McGraw-Hill.
- Mattingly, Cheryl, and Linda C. Garro. 2000. *Narrative and the Cultural Construction of Illness and Healing*. Berkeley: University of California Press.
- McElroy, Ann, and Patricia K. Townsend. 2009. *Medical Anthropology in Ecological Perspective*. 2nd ed. Boulder, CO: Westview Press.

- ""Menstrupedia" Aims to Break Taboo over Periods in India." April 11, 2014. Reuters Health Medical News.
- Moore, S. 1995. "Girls' Understanding and Social Constructions of Menarche." *Journal of Adolescence* 18, no. 1: 87-104.
- Montgomery, Paul, Hennegan, Julie, Dolan, Catherine, Wu, Maryalice, Steinfield, Laurel, and Scott, Linda. 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, no. 12: E0166122.
- Moronkola, O A, and V U Uzuegbu. 2006. "Menstruation: Symptoms, Management and Attitude of Female Nursing Students in Ibadan, Nigeria." *African Journal of Reproductive Health* 10, no. 3: 84-9.
- Musaazi, Mechtenberg, Nakibuule, Sensenig, Miyingo, Makanda, Hakimian, and Eckelman. 2015. "Quantification of Social Equity in Life Cycle Assessment for Increased Sustainable Production of Sanitary Products in Uganda." *Journal of Cleaner Production* 96: 569-79.
- Nichter, Mark, and Mimi Nichter. 1996. *Anthropology and International Health: Asian Case Studies*. 2nd ed. Vol. 3. Amsterdam: Overseas Publisher Association.
- Pillitteri, Sally Piper. 2011. "School menstrual hygiene management in Malawi: More than toilets." *WaterAid Report*. <http://www.ndr.mw:8080/xmlui/handle/123456789/313>.
- Rice, Carla. 2014. *Becoming Women: The Embodied Self in Image Culture*. North York: Univ. of Toronto Press.
- Rustad, Harley. May 01, 2013. "Nepalese Menstruation Ritual Hard to Discontinue." *The Globe and Mail* (Index-only). Toronto, Ont.
- Saillant, F. and Genest, S. 2007. *Medical Anthropology Regional Perspectives and Shared Concerns*. Malden, MA: Blackwell.
- Santer, Mirium, Sally Wyke, and Pam Warner. 2008. "Women's Management of Menstrual Symptoms: Findings from a Postal Survey and Qualitative Interviews." *Social Science & Medicine* 66, no. 2: 276-88.
- Scheper-Hughes, Nancy. 1990. "Three Propositions for a Critically Applied Medical Anthropology." *Social Science & Medicine* 30, no. 2: 189-97.
- Scorgie, Fiona, Jennifer Foster, Jonathan Stadler, Thokozile Phiri, Laura Hoppenjans, Helen Rees, and Nancy Muller. 2016. ""Bitten By Shyness": Menstrual Hygiene Management, Sanitation, and the Quest for Privacy in South Africa." *Medical Anthropology* 35, no. 2:

161-176.

Scrimshaw, Susan. 1978. "Stages in Women's Lives and Reproductive Decision-Making in Latin America." *Medical Anthropology* 2, no. 3 (1978): 41.

Shilling, Chris. 2005. *The Body in Culture, Technology & Society*. London: SAGE Publications Ltd.

Singer, Merrill. 1995. "Beyond the Ivory Tower: Critical Praxis in Medical Anthropology." *Medical Anthropology Quarterly* 9, no. 1: 80-106.

--- Singer, Merrill. 2004. "Critical Medical Anthropology". In *Encyclopedia of Medical Anthropology: Health and Illness in the World's Cultures*, edited by Carol R. Ember and Melvin Ember. Dordrecht: Springer Science+Business Media.

Singer, Merrill, and Hans A. Baer. 2007. *Introducing Medical Anthropology: A Discipline in Action*. Lanham, MD: AltaMira Press.

--- Singer, Merrill, and Hans. Baer. 2011. *Introducing Medical Anthropology A Discipline in Action*.

Singer, Merrill, and Pamela I. Erickson, eds. *A Companion to Medical Anthropology*. Chichester, West Sussex: Wiley-Blackwell, 2011.

Sommer, Marni. 2011. "An Early Window of Opportunity for Promoting Girls' Health: Policy Implications of the Girl's Puberty Book Project in Tanzania." *International Electronic Journal of Health Education* 14: *International Electronic Journal of Health Education*, Annual, 2011, Vol.14.

Straight Talk Foundation. March-April. Accessed November 13, 2017.  
<http://straighttalkfoundation.org/>.

"Study Reveals Greater Risk of Asthma for Overweight Women with Irregular Periods. (News)." 2002. *Practice Nurse* 24, no. 5: 16.

Sunny S Kim, Rahul Rawat, Edina M Mwangi, Roman Tesfaye, Yewelsew Abebe, Jean Baker, Edward A Frongillo, Marie T Ruel, and Purnima Menon. 2016. "Exposure to Large-Scale Social and Behavior Change Communication Interventions Is Associated with Improvements in Infant and Young Child Feeding Practices in Ethiopia." *PLoS ONE* 11, no. 10, E0164800.

Tamiru, Selamawit, Kuribachew Mamo, Pasquina Acidria, Rozalia Mushi, Chemisto Satya Ali, and Lindiwe Ndebele. 2015. "Towards a Sustainable Solution for School Menstrual Hygiene Management: Cases of Ethiopia, Uganda, South-Sudan, Tanzania, and Zimbabwe." *Waterlines* 34, no. 1: 92-102.



- Tan, Delfin A., Rohana Haththotuwa, and Ian S. Fraser. 2017. "Cultural aspects and mythologies surrounding menstruation and abnormal uterine bleeding." *Best Practice & Research Clinical Obstetrics & Gynaecology* 40: 121-33. doi:10.1016/j.bpobgyn.2016.09.015.
- "The Untruths Surrounding Sex Education in America." August 18, 2015. UWIRE Text, 1. Academic OneFile.  
[http://go.galegroup.com/ps/i.do?p=AONE&sw=w&u=mtlib\\_1\\_1195&v=2.1&it=r&id=GALE%7CA425880286&asid=0408bbf530b668a80a0a1c73684fce87](http://go.galegroup.com/ps/i.do?p=AONE&sw=w&u=mtlib_1_1195&v=2.1&it=r&id=GALE%7CA425880286&asid=0408bbf530b668a80a0a1c73684fce87).
- Thurén, Britt-Marie. 1994. "Opening Doors and Getting Rid of Shame: Experiences of First Menstruation in Valencia, Spain." *Women's Studies International Forum* 17, no. 2: 217-28.
- "Time to talk about menstruation: #PeriodEmoji." 2017. *The Lancet* 389, no. 10086: 2264. doi:10.1016/s0140-6736(17)31579-9.
- "UGANDA, UNITED KINGDOM: UK Guarantees Sh380b Development Grant for Northern Uganda through DFID. (Department for International Development)." May 24, 2011. Mena Report.
- UNICEF. February 2016. Supporting the Rights of Girls and Women through Menstrual Hygiene Management (MHM) in the East Asia and Pacific Region- Good Practice Guidance Note.
- Vindevogel, De Schryver, Broekaert, and Derluyn. 2012."Challenges Faced by Former Child Soldiers in the Aftermath of War in Uganda." *Journal of Adolescent Health, Journal of Adolescent Health*.
- Viv, Stav. October 19, 2017. "Periods Are Normal, Says First U.K. Commercial to Use Red Liquid on a Pad." *Newsweek*. <http://www.newsweek.com/periods-are-normal-says-first-uk-commercial-use-red-liquid-pad-688699>.
- WaterAid. March 2013. "Her Right to Education: How Water, Sanitation and Hygiene in Schools Determines Access to Education for Girls."
- Water Supply & Sanitation Collaborative Council (WSSCC). March 8, 2013. "Celebrating Womanhood How Better Menstrual Hygiene Management Is the Path to Better Health, Dignity and Business."
- Wendo, Charles. 2003. "Uganda, World Bank, and DFID Launch Sanitation Campaign." *The Lancet* 362, no. 9385.
- "What is Medical Anthropology?" Society for Medical Anthropology. 2017.  
<http://www.medanthro.net/about/about-medical-anthropology/>.
- Winkelman, Michael. 2009. *Culture and Health: Applying Medical Anthropology*. San Francisco: Jossey-Bass.

Womack, Mari. 2010. *The Anthropology of Health and Healing*. Lanham, MD: AltaMira Press.

Zambia Ministry of Education. 2016. "Menstrual Hygiene Management National Guidelines."  
Menstrual Hygiene Matters.