Menstrual Practices of Nepali-Bhutanese Women in Pittsburgh

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Submitted to the Graduate Faculty of the

Graduate School of Public Health in partial fulfillment

of the requirements for the degree of

Master of Public Health

University of Pittsburgh

2020

UNIVERSITY OF PITTSBURGH

GRADUATE SCHOOL OF PUBLIC HEALTH

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Abstract

The thesis explores how migration impacts Nepali-speaking Bhutanese female refugees' menstrual beliefs and behaviors in the Pittsburgh region. Women over the age of 18 from the Nepali-speaking Bhutanese community in the Pittsburgh region were recruited to participate in semi-structured interviews, focus group discussions, and a survey from March 2019 to December 2019. Three expert interviews helped inform the appropriateness and relevance of data collection instruments. A total of four interviews and two focus group discussions were conducted and 31 survey responses collected. The data from the qualitative sources were transcribed in order to code the participants' responses and systematically identify themes in the codes. Themes were grouped together for analysis and the socio-ecological model (SEM) was used to further interpret the data. Results suggest that migration influences menstrual practices in the context of the Nepali-Bhutanese community in Pittsburgh. As these women's socio-milieu transformed during migration to Nepal and subsequently to the United States, so did their constructions of menstruation. Further community-engaged research is required to investigate how the experiences and constructs of menstruation specifically influence this population's health care and seeking decisions, with a wider focus on sexual and reproductive health.

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1.0 Introduction

Although menstruation is a physiological process, menstrual knowledge, attitudes, and practices of women and girls are influenced by the sociocultural environment in which they live. In many non-Western countries, restrictive behaviors during menstruation are reinforced by beliefs that associate menstruation with impurity and dirtiness (Bennett, 1983; Cameron, 1998; Morrison et al., 2016). This can lead to menstrual shame for many women and girls. Experiencing menstrual shame is linked to poor health, risky sexual behavior, and embarrassment towards breastfeeding and childbirth (Hawkey, et al., 2017). It is essential to understand the cultural, societal, and religious influences on how women and girls experience menstruation, given that negative attitudes associated with menstruation can lead to negative health outcomes (Ussher et al., 2017; Sommer et al., 2015; Austin et al., 2008; Swenson et al., 1989).

Migrant and refugee women (MRW) may experience menstruation differently than non-MRW. MRW must simultaneously negotiate often divergent cultural ideologies of menstruation (Salad et al., 2015; Ussher et al., 2012). When MRW have prolonged, continuous contact with individuals and systems within a host country, it can result in changes at both the individual level, such as beliefs, attitudes, and identities, as well as at the group level, such as societal and cultural systems (Tadmor et al., 2009). This multidimensional process is recognized as acculturation. The ability to acculturate in Western countries is positively associated with both improved women's health (Leybas-Amedia et al, 2005), as well as health risks (Pilver et al., 2011), including sexual and reproductive health (SRH) (Lee & Hahm, 2010). Within the migrant and refugee population in the United States (U.S.), as with all countries receiving migrants and refugees, understanding

menstrual beliefs and behaviors of migrants and refugees is essential for designing and delivering appropriate public health messaging, health care and menstrual education.

Since 2005, approximately 7,000-10,000 Nepali-speaking Bhutanese refugees have resettled in the Pittsburgh, Pennsylvania, region of the United States. Many of these refugees are culturally Nepalese but were born in Bhutan. In the 1890s, the government of Bhutan recruited Nepalis as laborers to clear the jungles of southern Bhutan. Immigration from Nepal to Bhutan resulted in enclaves of Bhutanese people of Nepali descent, known as *Lhotshampa,* or "People from the South" (International Organization for Migration [IOM] Damak, 2008). It was in these southern communities of Bhutan that many of this study's participants were born. In the 1980s, the Bhutanese government revoked the *Lhotshampa*'s citizenship and adopted a "One Nation, One People" policy that led to an ethnic cleansing in the 1990s of the *Lhotshampa* (Das Shrestha, 2019). Many fled to Nepal, where the United Nations High Commissioner for Refugees (UNHCR) set up camps that in 1992 housed over 105,000 refugees (Roka, 2017). As of 2015, 18,000 refugees still lived in two of the seven original camps. After a series of unsuccessful negations between Nepal and Bhutan, in 2007 the UNHCR began a resettlement program for Nepali-speaking Bhutanese refugees. The UNHCR has subsequently resettled over 100,000 Nepali-speaking Bhutanese refugees throughout the world, with approximately 85,000 resettling in the U.S. (Das Shrestha, 2019). Beginning around 2008 with the first families, Pittsburgh has become a hub for primary and secondary migration of Bhutanese refugees of Nepalese origin.

This thesis examines how migration impacts MRW's menstrual beliefs and behaviors through the case of Nepali-speaking Bhutanese female refugees in Pittsburgh, Pennsylvania. Migrant women gain agency as they reconstruct traditional menstrual behaviors to fit into new social and cultural circumstances (Sharma, 2014). It is important to identify not only how women

increase their agency but also the landscape of current menstrual practices in the Pittsburgh Bhutanese community. Also critical to understand is why, if, and how women transfer these menstrual practices to their daughters.

The aim of this case study is to examine how menstruation is regarded and understood by a group of Bhutanese refugee women living in the Pittsburgh region. Specifically, the study will look at whether cultural and religiously informed beliefs around menstruation are still held in the study population. Additionally, this thesis aims to identify how migration to refugee camps in Nepal, and subsequent resettlement in the U.S., affect menstruation practices. Lastly, the research investigates the intergenerational transfer of those behaviors, practices, and beliefs. The results of this case study can help inform the design of future health and education programs for the target population.

To investigate the linkages between migration and menstrual beliefs and behaviors of Bhutanese women in Pittsburgh, this research reviews several interdisciplinary bodies of literature, including public health, anthropology, and sociology. Primarily, this research utilizes and expands upon current public health understandings of menstrual taboos, and migrant and refugee health. This thesis builds upon existing literature on the subject of acculturation to determine how women from the Bhutanese community in Pittsburgh negotiate the complexities of acculturating and incorporating potentially conflicting discourses on menstruation into their belief systems.

Comprising this thesis are several sections. The background and significance portion includes a literature review of current and relevant public health understandings of menstrual taboos, acculturation processes, and migrant and refugee health (Chapter 2). This is followed by a section on methods (Chapter 3), and by Chapters 4 and 5, which consist of the data results and a discussion of the research findings in the context of broader literature relevant to the research

question. The final chapter explores future research opportunities and proposes recommendations for future health programs and education for the target community.

The results of this thesis inform the design of culturally relevant health programs and education in migrant community centers, educational institutions, and the health care system health that serve a large number of clients from the Nepali-speaking Bhutanese community in Pittsburgh. Since menstrual health affects a woman's overall health, from menarche—the beginning of menstrual function—to menopause—the end of menstrual functions—it is crucial that service providers and educational institutions in Pittsburgh are aware of the cultural context in which MRW understand and experience menstruation. This will enable these entities to design and implement appropriate public health services and education.

2.0 Literature Review

Menstrual health is an area of study across an array of disciplines, including public health, anthropology, development, sociology, and economics. As an under-recognized social determinant of sexual and reproductive health among women and girls, and because of its effects on education and employment, psychosocial stress, and human rights, menstrual health must be analyzed and addressed through a multi-disciplinary approach. This review engages with several interdisciplinary bodies of literature to examine both the influences of women's menstrual constructs and identities, and how migration and different environments affect menstrual health.

2.1 Menstruation in Public Health

In the last decade, the body of literature on menstruation-related challenges faced by women and girls globally has grown. Now recognized by United Nations agencies and academics alike, menstrual hygiene management (MHM) has become central in discussions on gender equality and women and girls' health. Concerning women's and girls' health, menstrual shame, embarrassment, and religiously and culturally rooted taboos are just recently being explored, and programming is similarly expanding in the fields public health and development. This builds on a long history of anthropologists who have studied menstruation, taboos, culture, and purity in various contexts (e.g. Bennett, 1983; Douglas, 1966).

Historically, menarche and menstruation were predominantly examined in anthropological literature, with a focus on taboos, rituals, and framing them within reproduction

(Hoskins, 2002; Douglas, 1966). The topic seldom appeared in development programming or public health literature except when discussed in relation to family planning and contraceptive use in low and middle income countries (LMICs) (Sommer et al., 2015).

In the early 2000s, global health priorities for women's and girls' health focused on reproductive health, decreasing maternal mortality and morbidity and addressing the HIV epidemic (United States Agency for International Development [USAID], 2012). Therefore, development policy and programming references to menstruation were focused on girls and women between 15 and 49 years, the target age for sexual and maternal health, HIV, and reproductive interventions, excluding the age when girls largely experience menarche (DeMaria et al., 2019). Programming and policy for these global women's and girls' health priorities mostly referred to menstruation in its physiological capacity, and the socio-cultural aspects were often ignored. Sommer, Hirsch, Nathanson and Parker (2015) further suggest the absence of menstruation in global health literature and development programming was partially due to menstruation being regarded as a private, domestic issue that families were responsible for addressing. Therefore, governments, non-governmental organizations (NGOs), and other private and public institutions did not incorporate menstrual education in health programming. Today however, that trend has reversed, with multi-sectoral collaboration widely addressing the issue.

MHM first appeared in development work aiming to narrow the education gender gap. Girls' educational programming slowly began to include interventions for menstrual hygiene (Joint Monitoring Programme [JMP] of The World Health Organization [WHO] and The United Nations Children's Fund [UNICEF], 2016), and some grey literature was published by development organizations, NGOs, and private-public partnerships (Sommer et al., 2015). However, this literature was highly inaccessible and did not have a significant impact on health

and education sectors. It was not until 2004 that the water, sanitation, and hygiene (WASH) sector began to implement menstrual hygiene-related interventions in schools, recognizing the lack of information, education and infrastructure to address menstrual hygiene. In 2012, the JMP of the WHO and UNICEF included menstrual hygiene management in a WASH development proposal for targets and indicators. The 2030 Schools Target included "all schools provide all users with handwashing and menstrual hygiene facilities" (JMP of WHO and UNICEF, 2016 p3). WASH continued to implement programming and policy for menstrual hygiene management. The sector also advocated for multi-sectoral and multi-level participation, including education, gender, and sexual and reproductive health sectors.

As WASH continued to integrate MHM into programming, research on menstruation revealed a stark lack of menstrual knowledge and education in girls and women in LMICs, (JMP of WHO and UNICEF, 2016; Sommer et al., 2015). During this time, research also expanded approaches to menarche and menstruation from a solely physiological view to include socio-cultural perceptions and restrictive practices, some of which can result in the exlusion of women and girls from public life and exlusion from economic opportunities, contributing to gender inequality (United Nations Population Fund, 2019; Mohamed et al., 2018).

Around the same period that menstruation research began to shift, development programming began to address changing family structures in LMICs due to urban migration and adult deaths during the HIV epidemic in the early 2000s. Sommer et al. (2015) suggest that the change in family structure, including the separation of extended families and absence of parents, helped move menstruation from a private, domestic matter to a public one. Specifically, the idea that menstrual guidance and education was the responsibility of the family shifted so that they became a focus of state and public institutions.

The current body of literature on menstrual hygiene management, practices and behavior is vast and has moved beyond institutional-level programming and interventions. Recent studies have examined the secrecy and shame surrounding menstruation in many cultures and how taboos may affect women's and girls' health. Public health interventions developed to respond to these taboos appropiately when designing programs to address menstrual experiences and MHM.

One area of literature that is only now emerging is menstrual health and MHM in emergency contexts. The precarity, inadequate sanitation, and lack of health service infrastructure in many refugee camps and other emergency contexts create new and unique challenges to safely mangaging menstruation. As the numbers of refugees rise globally, addressing the menstrual health needs of women and girls living in emergency contexts is imperative.

2.2 Menstruation and Poor Health

Women's menstrual beliefs and practices influence health, and interaction with and access to health care. In many cultures, the menstruating body is associated with pollution and impurity, which can lead to stigma and feelings of shame and embarrassment (Chrisler, 2011; Lee, 2009). These feelings impact overall health, sexual behaviors and feelings towards pregnancy (Hawkey et al., 2017). The shame and secrecy surrounding menstruation impact girls' and women's ability to properly manage their menstruation (Sommer et al., 2014b; Marvan et al., 2008). In certain regions this is manifested by women and girls improperly cleaning and/or disposing of sanitary pads (Schmitt et al., 2017). Unhygienic cleaning of sanitary pads (such as drying them in the shade or under the bed) can cause discomfort and irritation (Schmitt et al., 2017) and infections and the

spread of bacteria (Sommer et al., 2014b). Women and girls may choose to dispose of sanitary pads early in the morning or late at night to avoid encountering men or will bury the pads in remote locations (Schmitt et al., 2017).

Menstrual shame and secrecy result in decreased knowledge about complications like reproductive tract infections and what healthy menstruation is, which can have long-lasting negative health impacts (Kaur et al., 2018). The relationship between menstrual shame and negative health outcomes highlights the need for designing appropriate public health responses by analyzing how shame, embarrassment, and taboos affect women's ability to appropriately manage their menstruation.

2.3 Intergenerational Knowledge Transfer

A mother's lack of knowledge and information around menstruation makes her less likely to educate her daughter on the topic. Furthermore, a mother's attitude toward menarche and menstruation will impact the menstrual education of her daughter (Bennet & Harden, 2014) and her feelings towards menstruation (Costos et al., 2002). A comparative study from Tanzania, Ghana, Cambodia and Ethiopia found that many parents lacked adequate information about menarche and menstruation and were subsequently less likely to educate or talk to their daughters about menstruation (Sommer et al., 2014a). This lack of intergenerational knowledge transfer is not unique to these countries. Studies from numerous other low- and high-income countries and cultural contexts have found little, inaccurate, or incomplete knowledge on the part of both parents and girls about menstruation (Sommer et al., 2014a).

This particular area of intergenerational knowledge transfer is described by Sharma (2014), who finds that female relatives play important roles when teaching younger generations about menstruation and traditional menstrual behaviors. However, Sharma notes that in Nepali populations residing in the United Kingdom (U.K.) and the U.S., mothers were less likely to teach their daughters about menstrual taboos than those living in Nepal and India. These taboos include restrictions on attending religious activities, cooking and touching items in the kitchen, touching certain plants and animals, and seeing male relatives (Sharma, 2014). The author finds that in the U.K. and U.S., Nepali women adjusted their attitudes and menstrual behaviors to fit their needs in the host country, and thus were less likely to pass on traditional practices to their daughters residing within the diaspora area as well (Sharma, 2014).

2.4 Menstrual Behaviors Among Migrant and Refugee Populations

Levels of migration and numbers of refugees continue to rise throughout the world. In 2019, the global refugee population was 25.9 million, and the number of international migrants globally was 272 million, approximately 3.5 percent of the world's population. Nearly half of these migrants were women, and 74 percent were of working age, indicating that approximately 100 million are mostly likely to be menstruating women (IOM, 2020).

2.4.1 Acculturation

In today's world of heightened intercultural contact, there is an increased emphasis on the process of acculturation, described by Berry (1995, p460) as the manner in which individuals

change both through being influenced by contact with another culture and by being participants in general shifts occurring in the individual's own culture. Berry (1995) argues that acculturation can take on two dimensions: the maintenance of original cultural identity and the maintenance of relations with other groups. This dichotomy can then be divided into four categories: integration, separation, assimilation, and marginalization (Ward & Rana-Deuba, 1999). The factors that influence an individual's and a community's process of acculturation can be mapped on to the socio-ecological model. At an individual level, factors include self-esteem, cognitive function, sex, ethnicity (Ward & Rana-Deuba, 1999), behavior, identity, and values (Berry, 1995). At the community or societal level, these factors include social structure, economic base, and political organization (Berry, 1995).

This process of acculturation is particularly relevant for the study of migrant and refugee health, as it has been found to have both positive and negative physical (Leybas-Amedia, Nuno, & Garcia, 2005), psychological and psychosomatic effects (Ward & Rana-Deuba, 1999). The Center for Disease Control (CDC) reports that failure to adjust to the asylum country's society can lead to the development of symptoms of anxiety, depression, and psychological distress (2013). Acculturation may increase or decrease health risks depending on specific behaviors and on a myriad of complex, societal circumstances, including economic status (Leybas-Amedia et al., 2005), migration status and cultural background (Lee & Hahm, 2010). Studies examining acculturation's impact on minority, migrant, and refugee women's health tend to focus on reproductive and sexual health, and health seeking behaviors and engagement with the health system. One study among Latina adolescents in the U.S. found that higher degrees of acculturation were associated with risky sexual behavior (Lee & Hahm, 2010). Another study conducted on the Mexico-U.S. border found that Hispanic women with higher degrees of acculturation had an

elevated level of seeking health services and preventative services, such as cancer screenings and were also more likely to participate in behaviors that increased health risks (Leybas-Amedia et al., 2005).

2.4.2 Refugee Camps

MRW may experience menstruation differently than non-MRW. Culture, society, and religion intersect to influence a woman's menstrual experience. For MRW, the experience of displacement or migration can further influence these intersections and their impacts on menstrual experiences. Managing menstruation presents distinct problems when the MRW are living in refugee camps. The taboo, secrecy, and shame associated with menstruation in many refugee camps in low-and middle-income countries can contribute to the difficulty of identifying contextually appropriate solutions for refugee women and girls to manage menstruation (Schmitt et al., 2017). One study of refugee camps in Lebanon and Myanmar found that refugee women and girls adapted the management of their menstruation to correspond to the local circumstances of the refugee camps (Schmitt et al., 2017). The new circumstances included lack of gender-segregated latrines and reluctance to use the latrines at night due to fears of violence, inadequate lighting, or ghosts. In Lebanon, many women and girls had difficulty finding a private space to change sanitary pads. Women and girls cited difficulty disposing of sanity napkins or drying reusable cloth napkins. However, since menstruation was a taboo subject, which contributed aid workers in the camps feeling ill-equipped to address women's and girls' menstrual management needs (Schmitt et al., 2017).

2.4.3 Resettlement in Western Countries

The numbers of migrants and refugees living and resettling in high-income countries continues to rise. As of 2019, over half of all international migrants—141 million people—lived in Europe (82 million) and Canada and the U.S. (59 million), which increased in 2019 by 25 million and 18 million, respectively (IOM, 2020). Major resettlement countries, including the U.S., Canada, Australia, the U.K., Norway and Sweden, took in approximately 92,400 refugees in 2018. Trends in the mobility and number of migrants and refugees all point toward an increase in coming years (IOM, 2020). This coincides with a small but growing body of literature on MRW's menstrual health needs in high-income countries.

A recent cross-cultural study based in Australia and Canada explored menstrual knowledge and beliefs of MRW in those countries and found associations between menstrual shame and menstrual knowledge (Hawkey et al., 2017). For MRW relocating to and resettling in the Global North[1], it is especially important to understand their cultural perceptions and practices of menstruation. Discourses on menstruation in the Global North and South impact women's health, yet differences in these discourses, when experienced at the same time, profoundly affect women's menstrual behaviors. MRW must negotiate these conflicting discourses as they transition between cultures both during resettlement and for years afterward.

For MRW in high-income countries, authors Hawkey, Ussher, Perz, and Metusela (2017), Sharma (2014), and Cicurel and Sharaby (2007) all argue that some women shift menstrual behaviors to adapt to the new country's expectations of menstrual behavior and discourse. In some

[1] The Global North refers to a term that describes the North–South divide of the world's socio-economic and political division.

cases, women use the new social reality to give up traditional menstrual behaviors. Hawkey et al. (2017) found that for some women, menarche celebrations marking a girl's entrance into womanhood and/or marriageability were thought to be "redundant, outdated, or inappropriate, with no sense of loss" (p1479). Other participants in their study adapted their menstrual behaviors to conform to a Western discourse of menstruation. Menarche ceremonies may become celebrations, rather than having the marked purpose of announcing to the community the girl's marriageability (Hawkey et al., 2017). In Israel, Ethiopian Jewish migrants adapted traditional menstruation huts to adhere to Israeli building laws, which allowed women to continue to observe various degrees of menstruation rituals that empowered them (Cicurel & Sharaby, 2007).

To date, only Hawkey and authors (2017) and Sharma (2014) have examined menstrual experiences of MRW in Western countries (excluding those based in refugee camps). However, unlike Hawkey and authors (2017), whose study participants included women from a variety of ethnic groups, Sharma (2014) analyzes the change in menstrual rituals for only Nepali migrants in three countries within the Nepali diaspora, as well as women living in Nepal. This thesis expands upon the findings from Hawkey et al. (2017) and Sharma (2014). Using the Bhutanese community of Pittsburgh as a case study, this thesis furthers conclusions about the impacts of migration on menstrual beliefs and behaviors.

2.5 Menstrual Health Provisions for Migrants and Refugees

Globally, MRW are at a higher risk of experiencing unwanted pregnancy, induced abortion, and obstetric complications as compared to the general population (VanLeeuwan & Torondel, 2018). The growing number of international migrants and refugees calls for a reorientation of

health systems for migrant health. Specifically, this includes health policies directed towards MRW and health care providers' perceptions and practices when caring for this population (Suphanchaimat et al., 2015), as well as their recognition of social structures' implications for health disparities (Metzl & Hansen, 2014). With respect to menstrual health, an under-recognized and yet vital component of SRH, Hawkey et al. (2017) and Sharma (2014) illustrate the wide variety of knowledge, attitudes, and practices within specific migrant and refugee populations.

The relevant literature that examines the health experience of migrants and refugees in the Global North is largely focused on health promotion and prevention (Salad et al., 2015; Carroll et al., 2007), and knowledge and attitudes of health care professionals (Suphanchaimat et al., 2015), with a specific focus on sexual, reproductive, and maternal health (Mengesha et al., 2018; Mengesha et al., 2017). Although menstruation is included under the umbrella of these health subjects, literature that examines how migrants and refugees engage with health systems regarding menstrual health specifically is lacking.

MRW's social, physical, and political environments can influence their menstrual health and menstrual health behaviors, and thus overall SRH and access to SRH care. The SEM is a framework that allows for examination of the dynamic relationship between an individual and her environment, and the multifaceted interrelationships between the levels of the model (i.e. individual, interpersonal, organizational, and societal). It is appropriate to use the SEM to examine the interrelationships between a woman, her migration or refugee experience, her SRH experiences and access to SRH care. The SEM illustrates the multiple factors and influences on a MRW's SRH, and their interrelationship. The model therefore also allows for a deeper understanding into the structural barriers faced by MRW when accessing SRH.

The table below depicts the multiple levels of the SEM and factors influencing MRW's engagement with SRH care as described by Mengesha and authors (2017, p7). The third column includes examples of factors drawn from the study (Mengesha et al. 2017), which was conducted with 21 health care providers (HCPs) in Australia from late 2015 to early 2016 (**Table 1**).

Table 1: Factors influencing MRW's engagement with SRH services

SEM Level	Factors	Example
Individual	• Age • Geographic origin • Length of stay in host country • Educational status • **SRH experience in home country** • Resettlement and migration priorities	**SRH experience in home country** HCPs in the study (Mengesha et al., 2017) found that women who had not had exposure or access to SRH services or promotion in their home countries may not seek these services out or be aware their exist while living in the host country, thereby comprising a migrant or refugee woman's SRH-seeking behavior –SRH literacy
Interpersonal	• **Gender roles in SRH decision making**	**Gender roles in SRH decision making** Husbands were found to be heavily involved in women's SRH health decisions and seeking, which can lead to challenges to HCPs during consultations, or contraception use as a source of conflict between an MRW and her husband (Mengesha et al., 2017, p17)
Organizational	• **Navigating the health system**	**Navigating the health system** Language was a major barrier and challenge for MRW to enter the healthcare system. There was a lack of materials on SRH available in other languages. SRH services were also perceived by HCP to not be adequately advertised in other languages
Societal	• Taboo nature of SRH • Gender norms • Lack of budget • Cost of services	**Taboo nature of SRH** HCPs perceived that due to the taboo nature of SRH in MRW cultures, it was difficult for them to inquire about and request, or to find out where services were offered

MRW are at a particularly higher risk of experiencing negative SRH and maternal health outcomes because of migration circumstances, cultural and religious beliefs around SRH, a lack of appropriate health information, and a lack of knowledge about the host country's health system. This can lead to negative health outcomes, including unplanned pregnancy, poor use of family planning methods, and low STI screenings (Mengesha et al., 2018; Suphanchaimat et al., 2015). MRW may negotiate and address SRH needs differently due to complex social realities that may be a result of migration and corresponding structures (migration policy, housing, federal assistance). For instance, a loss of social networks, cultural and religious barriers, language barriers, and other resettlement priorities (including housing and schooling) may impact how MRW access SRH services (Suphanchaimat et al., 2015).

The findings of Mengesha et al. (2017) support the work of other studies examining MRW health experiences, which found correlations between the length of time MRW have spent in a host country and their level of education with greater sexual health knowledge. Their findings further affirm that MRW's experiences accessing health care in their home countries can influence their health seeking behaviors in host countries, given that certain health services may not exist in their home countries (Mengesha, et al., 2017).

The literature establishes correlations between low utilization of SRH services by MRW and HCP preparedness, knowledge, and awareness. Both educational background and ongoing professional trainings on cultural awareness have a profound effect on whether HCPs are likely to personally engage with MRW, as well as the quality of care they can offer (Mengesha et al., 2018). One study in Australia found a low number of HCPs with cross-cultural training and a lack of cultural awareness being taught in higher medical education (Suphanchaimat et al., 2015). However, once HCPs received training, levels of comfort treating MRW increased. Given that

MRW's socio-ecological environment impacts their interaction with the health care system, it is important that both structural competency and an awareness of the patient's environment be included in trainings.

2.6 Culturally and Religiously Informed Menstrual Behaviors

Globally, attitudes, behaviors, and beliefs surrounding menstruation vary. In some countries in the Global South, traditional practices of restrictive behaviors during menstruation are reinforced by beliefs that associate menstruation with impurity, pollution, taboos, and dirtiness, leading to menstrual shame for many women (Cameron, 1998; Bennett, 1983). Restrictive practices, as defined by Mohamed and authors (2018), are "any kind of restriction placed on menstruating girls and women (either self-imposed or imposed by others), and are influenced by prevailing socio-cultural, religious or traditional beliefs and norms" (p2). The presence of menstrual taboos in various cultures is in many cases accompanied by varying degrees of restrictive behaviors during menstruation (JMP of WHO UNICEF, 2016). These include, but are not limited to, decreased mobility, seclusion, dietary restrictions, exclusion from religious ceremonies, limited intercourse, separation from family or certain family members, and decreased participation in community life (Mohamed et al., 2018). These practices can be found across major religions (Hawkey et al., 2017). In Judaism, some practicing women refrain from intercourse with their husbands during menstruation and seven days after, as outlined under the laws of *niddah* (Cicurel & Sharaby, 2007). In western regions of Nepal, some Hindu women refrain from intercourse, seeing male relatives, cooking, and eating certain foods during menstruation. Furthermore, many women sleep in sheds separated from family living quarters (Baumann, et al.,

2019b; Sapkota et al., 2013). Restrictive behaviors can isolate and stigmatize women and girls, which may contribute to gender inequality and human rights violations (United Nations Population Fund, 2019).

2.6.1 Menstrual Behaviors Among Women of Nepalese Origin

In Nepal and within the Nepali diaspora, certain restrictive behaviors during menstruation can put women and girls at risk for poor health outcomes. In Nepalese, *na chune* or "untouchable," is used to refer to menstruating women (Baumann, 2019c; Sharma, 2014). Restrictive behaviors are linked to the belief of some that menstrual blood is dirty and polluted (Cameron, 1998; Bennett, 1983). The origins of the belief can be found in Hindu religious texts, which depict how Indra, the Hindu king of the gods, killed a Brahmin (Sharma, 2014). Indra, guilty of the murder, gives women one-third of the blood spilled, which appears monthly as menstrual blood (Baumann, 2019a; Sharma, 2014). Therefore, women's bodies are temporarily seen as impure, hence the restrictions during menstruation. In traditional Hindu writings, the restrictions include instructions not to "anoint her body, bathe in water, touch fire, eat meat, and look at the planets" (Sharma, 2014, p. 19). In another religious text described by Sharma (2014), it is prohibited that women sleep with their husbands. A man's vitality and strength is diminished if he sleeps with a menstruating woman.

The traditional Nepalese behaviors prescribed for menstruating women range from seclusion, or *chhaupadi* (Baumann, 2019a; Ranabhat et al., 2015), to maintaining a certain diet during menstruation (Sapkota et al., 2013). Other restrictions include being permitted to carry out religious rites, entering religious sites, touching fruit, gathering water from wells, watering plants,

milking cattle, or touching fruit trees (Baumann, 2019a). A specific timeline for when to bathe and when to resume full activities is based on the day of the period (Sharma, 2014).

2.7 Nepali-Speaking Bhutanese Community of Pittsburgh

Members of the Bhutanese community in Pittsburgh represent various stages of migration. Many have lived in other areas of the United States or world before migrating to Pittsburgh; others arrived directly from the refugee camps in Nepal. A whole generation of Bhutanese children has been born and/or are growing up in Pittsburgh, many with very little or no memory of refugee camps. The community is ethnically and religiously diverse, comprised of various castes. Hindus, Buddhists, Christians, and Muslims are all represented in the community.

The Bhutanese community in Pittsburgh is well-established, with the first families arriving more than ten years ago. Leadership within the community comes from the Bhutanese Community Association of Pittsburgh (BCAP), a registered 501(c)3 that provides a range of services, including social service resources, citizenship preparation, English language classes, mental health awareness and trainings, and community events. BCAP is recognized as a registered organization by the Pittsburgh City Council, which declared December 9th as Bhutanese Community Day.
Recent studies have demonstrated that Pittsburgh's Bhutanese community faces similar challenges to those that exist in other U.S. cities with high number of Bhutanese refugees. The CDC reported that suicide rates in for Bhutanese refugees are higher than any other refugee group in the U.S. (2013), and that mental health symptoms were experienced at a higher rate than the general public. The most common challenges related to mental health included language barriers, worries about family back home, separation from family, and difficulty maintaining cultural and religious

traditions. Women were reported to have a higher rate of symptoms of depression than men (Vonnahme et al., 2014). A recent study examining the levels of integration into local society of Bhutanese refugees in Madison, Scranton, and Pittsburgh found that rates of successful integration were positively correlated with age, gender, and background (Roka, 2017). Young, educated males were found to have the easiest time, while the elderly, and especially elderly women, struggled to integrate. The study also found that in all three cities, communities were most concerned about the mental health of the elderly. This group have lower levels of English language proficiency and literacy, which had negative implications for gaining employment, passing the U.S. citizenship test, and overall integrating into U.S. cultural and society (Roka, 2017). Currently, in Pittsburgh and the surrounding region, specific migrant groups are often seen as culturally homogenous. Viewing migrant groups, such as the Bhutanese community in Pittsburgh, as homogenous ignores any variation that is present within the group and hinders appropriate service provision responses to the unique issues present within groups.

Furthermore, service provision and systems may have low structural competency and awareness of the acculturation process, which can hinder providers ability to address social structures that enable inequality and stigma. Preliminary research for this study found that many girls in the Bhutanese community of Pittsburgh receive inadequate menstrual education in school. This education may also contradict the cultural menstruation practices girls learns at home. A deeper analysis of acculturation's impacts on menstrual behaviors in Pittsburgh's diverse Bhutanese community can benefit the local education institutions and service provision systems by illustrating the social structures that impact this population's health outcomes.

3.0 Methods

This thesis is based on data gathered from three key informant interviews, four semi-structured interviews, two focus group discussions (FGDs), and a survey of 31 respondents to gain a deeper understanding of how migration can impact Nepali-speaking Bhutanese female refugees' menstrual beliefs and behaviors, in order to tailor public health programs and education for this population. The researcher worked in close partnership with Bhutanese community leaders during the recruitment and data collection phases of this case study. The three data collection instruments were revised based on data gathered during key informant interviews. The interviews and focus groups were conducted prior to the design of the survey instrument. Data gathered from the FGDs and the interviews helped identify issues around menstruation that were salient to women in the Bhutanese community, and how they understood the topics of menstruation and menstrual behaviors. The findings were then used to support the design and development of a survey well adapted to the sample**.** Analysis of the survey used descriptive data to reinforce findings from the qualitative data analysis. The combination of data from these three sources provides a more complete and comprehensive understanding of the research problem than a single source could on its own. Mixed methods enabled the researcher to concomitantly use the strengths of qualitative methods to explore a relatively new topic in the Pittsburgh area and inform the design of the qualitative method, which aimed to measure magnitude, strength, causes and trends of the phenomenon. The methods of recruitment, participation, and analysis were approved by the University of Pittsburgh's Internal Review Board (approval number STUDY19030045).

3.1 Sampling, Recruitment, and Community Partnership

An informal partnership between the researcher and community leaders was fundamental to conducting this case study. The partnership permitted the researcher an entrance into the community, and introductions made by community leaders of the researcher signaled to community members that the researcher had been vetted, and thus lent her credibility through the organizational affiliation. Community leaders invited the researcher to present the aims and intended use of the case study to members of the Bhutanese community in Pittsburgh, which facilitated recruitment of participants. During the first BCAP women's group meeting in which the researcher presented the proposed research, she observed the range of ages represented by those in attendance. The researcher did not purposely target participants of certain ages and generations to participate in the semi-structured interviews and FGDs.

The sampling frame used for this project was women over 18 years who actively participated in various BCAP events, including an affiliated women's group that met approximately once a month. There was no maximum age restriction during recruitment. These meetings were used to identify possible participants for FGDs and semi-structured interviews.

BCAP provided the facilities to hold the FGDs and in-person surveys.

3.2 Key Informant Interviews

Key informant interviews (KIIs) were conducted with the former Vice-President of the Bhutanese Community Association of Pittsburgh (BCAP) in Pittsburgh, the director of the Gender, Adolescent Transitions, and Environment Program at the Mailman School of Public Health at

Columbia University in New York City, and the executive director of the Nepal Fertility Care Center in Kathmandu, Nepal. The data collected from the KIIs informed the development of the semi-structured interview schedule, FGD guide, and survey.

3.3 Semi-structured Interviews

This thesis used semi-structured interviews to explore Pittsburgh-based Bhutanese female refugees' menstrual behaviors, a previously unstudied issue in this specific community. Four individual semi-structured interviews were conducted with Nepali-speaking Bhutanese refugee women living in the Pittsburgh area during the Spring of 2019. Participants were identified and recruited during BCAP's monthly women's meetings. Interviews took place in various locations convenient for the participants, including the Brentwood Library, the University of Pittsburgh, and participant homes. All four interviews were conducted in English without translation support as all participants were fluent in English. The semi-structured interviews aimed to learn more broadly about the individual participant's menstrual knowledge, attitudes, and practice (KAP) in three specific contexts relevant to their migration patterns: Bhutan, Nepal, and the U.S. The interviews examined the shifts or changes in the participant's menstrual KAP due to contextual factors and influences. The interviews explored these key concepts with questions based on interview guides used in studies on menstrual KAP, specifically in Nepal and Southeast Asia, and more broadly MRW health. Questions were revised based on feedback from a key informant to maximize appropriateness for women in the Bhutanese community of Pittsburgh. The interview covered the following issues specifically:

- Individual and family migration history;

- Individual definitions and perceptions of menstruation;
- Community/societal definitions and perceptions of menstruation;
- Menarche experience;
- Practices followed during menstruation;
- Change in practices and understanding of menstruation; and
- Community and women's health services.

The complete semi-structured interview guide can be found in Appendix A.

3.4 Focus Group Discussions

Using the SEM, this thesis frames culturally and religiously rooted menstrual behaviors as being determined, at least in part, by both individual and societal factors. Therefore, it was appropriate to use FGDs to collect data as this approach is particularly suited for topics that may be determined or influenced by group dynamics or social and cultural interactions (Gibbs, 1997). The primary aim of the FGDs was to learn more about the shared menstrual KAP among the Nepali-speaking Bhutanese community of Pittsburgh. Secondarily, the FGDs provided a social interaction context that would allow participants to express cultural consensus concerning specific topics.

Data were collected in two FGDs with groups with Bhutanese refugee women in March of 2019 (n=12) and September of 2019 (n=16). All participants were in BCAP's monthly women's group. The FGDs were facilitated in English by the researcher. Bilingual FGD participants translated questions, responses, and discussions from English to Nepali and vice versa so that all participants could fully contribute. The discussions took place inside of BCAP during the monthly

women's group meetings. The first FGD lasted approximately 47 minutes, and the second FGD continued for 52 minutes.

All interviews and the FGDs were audio-recorded with the verbal consent from the participants, except for one interview participant who declined to be audio-recorded. Audio recordings of the interviews and FGDs were transcribed verbatim, and the data were entered into NVivo in order to code the participants' responses and systematically identify themes in the codes. Themes were grouped together for analysis.

3.5 Survey

Women identifying as Nepali-Bhutanese and not living in Bhutan or Nepal were invited to complete a self-administered survey. The criteria for survey participation was not constrained to the Pittsburgh Bhutanese community. The survey's purpose was to measure the extent and prevalence of certain menstrual behaviors and beliefs in the target population. Demographic questions were included in the survey with the purpose of measuring relationships between individual characteristics (age, religion, ethnicity, birthplace) and menstrual behaviors based on previous research that found caste/ethnicity to be a significant predictor of menstrual knowledge and practices (Baumann, 2019b).

The survey was disseminated electronically using Qualtrics Survey System. BCAP leadership shared links to the survey through e-mail, and volunteers who taught English literacy to members of the Bhutanese community shared the link directly to their social media pages. The electronic survey was only available in English. A paper survey was disseminated during monthly women's meetings at BCAP. This survey was available in both English and Nepali. Six women

elected to complete the survey in English and two chose the Nepali version. Bilingual facilitators at the BCAP meetings assisted participants who were not fully literate in English or Nepali to complete the survey.

The survey was drafted using existing survey tools and asked questions concerning menstrual knowledge, attitudes, and practices (KAP) and MRW health topics. Qualitative data from the KIIs, semi-structured interviews, and FGDs were used to finalize the survey to ensure cultural and contextual appropriateness and to include relevant questions and language that were not included initially.

The final survey included questions on factors that may have impacted the respondents' menstrual KAP, including basic demographics, family structure, religion, country of origin and time lived Bhutan, Nepal, and the U.S. The survey also aimed to quantify respondents' menstrual knowledge and attitudes with questions about respondents' beliefs on perceptions of menstruation, menstrual education, preparedness, and knowledge pre-and post-menarche, and inter-familial and intergenerational menstrual knowledge transfer. Respondents were then asked to report on specific culturally and religiously rooted menstrual practices, including avoidance of certain activities, and with whom she may avoid these activities. Using a Likert scale, respondents were asked to report their attitudes of observing certain behaviors during menstruation.

Table 2: Survey Outline

Demographic Questions 12 questions Age, place of birth, years lived in Bhutan/Nepal, age of migration
Menstruation and Menstrual Perceptions 6 questions Age of menarche, reaction to menarche, menarche disclosure, perception of menstruation, menstrual information transfer
Menstrual Behaviors 6 Questions Avoidance of activities, types of activities avoided, persons with whom activities are avoided, daughter and menstrual behaviors
Menstrual Behavior Attitudes and Opinions 4 Likert Scales Results of menstrual behaviors, permissible menstrual behaviors, importance of teaching girls menstrual behaviors

The full survey can be found in **Appendix B**. The results of the survey were analyzed using Qualtrics's data analysis software. Results of the survey used descriptive data to corroborate findings from the qualitative data analysis and were used to inform the discussion section of this case study.

4.0 Results

The results discussed in this thesis are based on data collected through the above described KIIs, surveys, semi-structured interviews, and FGDs.

4.1 Key Informant Interview Results

The KIIs explored three subject areas with overlapping themes for the purpose of informing questions in the semi-structured interviews, FGDS, and the survey:

- Menstrual taboos, practices, and research in Nepal;
- Research and programming on MHM within migrant, minority, and refugee populations in U.S. and LMICs; and
- History and overview of the Bhutanese community of Pittsburgh.

The interview with the director of Gender, Adolescent Transitions, and Environment Program at Columbia University explored the current scope and trends of public health research on menstrual health. Data from this interview informed the questions on the interview schedule and FGD guide pertaining to refugee status and living in refugee camps.

A second interview with the executive director of the Nepal Fertility Care Center provided information on potential cultural representations of the target community. Data from this interview helped form questions specific to reinforcing ethnicity and nationality in the context of the ethnic cleansing in Bhutan of the *Lhotshampa*, or ethnic Nepalis, during the 1980s and 1990s. Although refugees fleeing Bhutan were culturally and ethnically Nepali, they were not Nepali by citizenship. Therefore, adopting or performing Nepali cultural practices once in Nepal may have been a way

to demonstrate and reinforce their "Nepali-ness." The data from this interview allowed the researcher to revise the questions regarding the timing of migration from Bhutan to Nepal, as well as questions on birthplace and years spent in each country, with a specific focus on shifts in menstrual behaviors during time spent in refugee camps in Nepal.

The final KII was held with the former Vice President of BCAP and member of the Bhutanese community of Pittsburgh. During this interview, feedback was given on the appropriateness of the interview schedule, FGD questions, and survey. Based on her recommendation, questions about the respondents' ethnicity were eliminated. She suggested that questions regarding caste and ethnicity may make respondents feel uneasy or uncomfortable. Furthermore, on her advice, choices for which restrictive practices women might perform were expanded to be more applicable to the target community.

4.2 Interviews and FGDs

This section reports on data collected from semi-structured interviews and FGDs. All participants in the semi-structured interviews identified as Hindu, were born in Bhutan, had at least one child, were between the ages of 25 to 46 years old, and were fluent in English. The two FGDs were held in March (n=12) and September (n=16) of 2019. All participants of the FGDs were attendees of BCAP's monthly women's group. FGDs participants' ages ranged from 20 to approximately 80 years old. Levels of English proficiency ranged from none (only Nepali), to being completely bilingual in Nepali and English. Participants in both the FGDs and four semi-structured interviews were all women who had resettled in Pittsburgh. They were all born in

Bhutan, had lived as refugees in Nepal, and had lived for at least one year in a refugee camp in Nepal. All were resettled in the United States by the UNHCR, either to Pittsburgh, or to another region of the United States, but then subsequently moved to Pittsburgh.

The qualitative results from the data collected during the FGDs and semi-structured interviews fall into four distinct areas:

- First period;
- Sanitary products;
- Generational Divide; and
- Daughters.

4.2.1 First Period

Many of the participants in the FGDs and interviews described their first period as scary or frightening and associated it with shame. Many did not feel that they had the information necessary to understand what was happening. Some said that they learned about menstruation in school, but none of the participants in the FGDs or interviews received information from their mother. This led to feelings of unease and shame that appeared to be experienced by women of all ages. As one woman in the first FGD expressed,

> *So there is that anxiety about not having [my period yet]. That was already there. But I didn't honestly [get my period], until I was sixteen. I didn't know how it was going to happen. There even was no health classes. Nothing was there. All of a sudden, I found it, blood in my panties. So, then I had to come home and tell my older sister (FGD1).*

Similar to the woman above, all the participants interviewed said, as was customary during their childhood, they did not disclose their first period to their mother. Rather, they told an older female relative, usually a sister or a cousin. They explain that this is in contrast to common practices in the U.S. where daughters are likely to disclose menarche to their mothers:

> *And I couldn't tell my mom, that was the thing, you are not supposed to tell mom. Here. You know. You go and tell mom. But we had that fear. Like mom… We had to hide something from mom. So, I told my older sister and she went and told mom and mom came and said you have to sleep in this area only (Int1).*

All the participants interviewed and who participated in the FGDs had their first period while living in Bhutan or Nepal. Three of the four women interviewed said their mother sent them to stay with a neighbor or relative for ten days, in adherence to common practice. During the first FGD, one woman said her mother sent her to stay with friends for 20 days. This practice is derived from the belief that girls experiencing their first period cannot see or hear immediate male family members. One participant from the first FGD described,

> *When my older sister had her first period she was not even allowed to stay home. She was asked to go and live my aunt. That was the practice then. So my, my two older sisters had to go to my aunt's house and live there and sleep on the floor (FGD2).*

When asked about subsequent periods during their childhood in Bhutan, two participants said that they stayed in a separate section of the house. During the first FGD, some participants said they would

still stay with a friend or relative during subsequent periods, but only for three to four days. One woman recounted,

> *We had a big house, so she [mother] gave me a place to sleep. You know? Things like that. So, that was me. And when my older sister had her first period she was not even allowed to stay home. She was asked to go and live with my aunt. That was the practice then. So, my two older sisters had to go to my aunt's house and live there and sleep on the floor (FGD1).*

Two participants identified a certain time or event that changed or influenced their mother's practice of sending them away or separating them from other family members during their periods. For instance, one participant said that because of the education she and her sisters received about menstruation in school, they were able to petition their mother not to send them away or separate them during their periods:

> *We were learning at school [that] having period is something… it's a natural phenomenon that the girl will have. And it's nothing wrong. You know? It's not a taboo is what we were learning in the school. So, yes. I think it was us who changed mom's mind, not mom who decided. Mom got liberated or something (Int1).*

The second participant cited an episode in the refugee camps in Nepal when her sister, after her first period, practiced *Rishi Panchami* (she refers to it as a *puja*), a festival held one day a year in which menstruation women and girls purify themselves of sins committed during menstruation through water, prayer, and fasting (Baumann, 2019c). After fasting for 24 hours beforehand, her sister fainted during

the festival. The participant's mother felt guilty for making her daughter partake. After the incident, the participant said, her mother no longer strictly enforced the practice of *Rishi Panchami*:

> *And in the camp, we celebrate… Not celebrate, but there's one occasion when women do fasting and offer* pujas *and all. And that is for the new year if you have committed any crime or mistake, kind of. But it's more focused on menstruation. Like if you have touched… Or you are not supposed to touch. If you do this ceremony celebration,* puja*, more like a religious one. When my sister was so young, I think she just had her first period, and she fainted during that, when she was walking around, like any other people. Like we don't eat until we offer flowers and water or whatever. And then she fainted. And my mom [was] like, 'Oh, I should have prevented you from doing that!' But she didn't force us at that point. But since we are in the camp, living in the camp, we're right one after another. So we were influenced, I guess. But from that time on I guess we didn't have to (Int2).*

In her recounting of the event, the woman also noted that the proximity of living quarters in the camp influenced the sisters' gradual lack of adherence to certain restrictive practices. The accounts given by participants about their first period suggest that it may have been a taboo subject for intergenerational dialog. None of the participants received any menstruation education from their mothers and thus turned to female relatives, such as sisters or cousins, at menarche. The female relative then typically relayed the information to the mother, who directed the participant as to which practices she would adhere.

4.2.2 Sanitary Products

The availability of and access to sanitary products influenced many participants' practices around menstruation. While cloth pads either given by the UNHCR or made at home were in common use in both the refugee camps and Bhutan, one participant explained that the generation before her did not have these available to them:

> *They were like, the ladies in Bhutan and even Nepal, wear this* lungi, *or we call it wrapper here, like a skirt. They would just put it like this* [participant mimes tucking a *lungi* between her legs] *and walk in the field. How difficult is that? So my sister has a bitter, you know, like experience with that. And whenever we talk, it makes me… gives me goosebumps. But how did she manage? She said she would bleed all the way from going to cut the grass for you know like, getting fodder for cows and things like that (Int1).*

One participant in the second FGD described using a piece of cloth and safety pins to form a pad, but since there were no toilets in the school she attended in Bhutan, girls had to wear their pads all day without the ability to change them. Another participant in the second FGD recounted that women used to weave cloth pads from raw cotton. Cloth pads were also used in the refugee camps in Nepal. The UNHCR provided refugees with a piece of cloth, which women and girls then fashioned into a reusable pad. The reusable pads avoided the waste management problem that disposable sanity pads would create:

> *And then in the camp, people didn't have sanitary pads, but the UN agents provided a piece of cloth, where we could make it as a pad, and use it and wash it and reuse it. Because in the camp,*

the problem was disposal. You know where would people dispose if they were given a sanitary pad? It would be disaster (Int 1).

Now, in Pittsburgh, many women use disposable sanitary napkins. None of the participants in either the FGDs or interviews said they regularly used tampons. Participants in both cited the improvements to women's ability to take care of their health by using disposable sanitary pads, as well as the ability to keep one's period private:

And now, you know, coming to America and you know, with all this fancy sanitary stuff. It is getting better. People are taking care of their health. (FGD1)

I don't speak aloud that I am going through this. (Int1)

Previous methods used in Nepal and Bhutan for menstrual hygiene management were not conducive to keeping one's period a private matter. When coupled with the proximity of living areas in the refugee camps, or the large family compounds in Bhutan, it may have been even more complicated if one wanted to keep a period secret. In the United States women have the ability, if they choose, to not disclose their menstruation.

4.2.3 Generational Divide

Living patterns have changed for many of these women since arriving in the United States. Some were resettled with large portions of their families, including in-laws, parents, and siblings. Many others have chosen to move from the first U.S. city where they lived to another in order to be closer to family. These two waves of migration to Pittsburgh have resulted in a Nepali-Bhutanese community of an

estimated 7,000-10,000 people. However, unlike in Bhutan and Nepal where women moved in with their husband and in-laws upon marriage, many couples in Pittsburgh do not live in the same house (or in some cases same city, state, or country) as their in-laws. All the participants who were interviewed (25-46 years old) recognized that the generation before them still observe restrictive behaviors during menstruation and expect them (the participants) to practice these behaviors. During the first FGD, one participant stated she feels she does not have a choice whether to follow the practices:

> *I don't know what to say. I am following in front of my in-laws and my parents. I am living with my in-laws (FGD1).*

Overall, restrictive behaviors of the younger generation may have lessened given decreased daily interaction with the older generation (in-laws and parents), who still observe and reinforce many restrictive behaviors. One woman noted,

> *But with my in-laws, if I was living with my in-laws, I shouldn't be doing that. That would be too much for them to take it. They are brought up in different world, so they want, you know, separate. Husband and wife separation. Not serving food to them during that three days' time. Things like that are still practiced. (Int1)*

Not living with their in-laws or extended family in Pittsburgh presents logistical and practical challenges associated with certain behaviors during menstruation. Previously in large family compounds in Bhutan and the refugee camps in Nepal, if a woman was menstruating, another woman in the family, such as a mother- or sister-in-law assumed the household responsibilities (cooking, cleaning) the

menstruating woman was prohibited from doing. As one participant in the first FGD pointed out, if she cannot cook or serve food for her family, no one else will do it:

> *I don't practice that in my house right now, I mean, I'm on my period today. So I go home, I cook, I do my things, I have no choice because who will do it for me? And then during the time I'm having my period, there is no extra bed for my husband to sleep, so we sleep together (FGD1).*

During an interview, one woman indicated that she would practice restrictive behaviors during menstruation when she was around her in-laws out of respect:

> *…when we have religious celebration, in the name of someone who has passed away, like my father-in-law passed away four, five years ago, but yearly, what we do is a death anniversary… That day if I am on my period, at least the first three or four days, I don't serve food because it's someone [else's] belief (Int2).*

Another participant in the second FGD iterated that she felt compelled to maintain a certain appearance of still believing in practicing restrictive behaviors during menstruation in the presence of the older generation. However, she herself had questions about the validity of the taboos and thus conducted her own hypothesis test:

> *I was told the same thing and a lot of us were told the same thing. If we were to touch any plants during our menstrual period, the plant will die. And I myself did experiment last summer. I used to believe, but I tried to learn what is exact. So on my first day of my period, I went to Home Depot, I*

bought five tomato plants, and I told my mother-in-law, 'This is my garden for this year, please do not plant anything on this garden. I want to plant this tomato.' And I brought those tomatoes and I planted the tomatoes in a separate spot. I was taking care of it every single day. And they didn't die! They grow well, they produced tomatoes, we ate. It was enough until February of last year. Those five tomatoes. I don't know. In front of them [older women], I have to say I still believe, I still follow. But for myself and my kids I will not (FGD2).

4.2.4 Daughters

All four of the participants who were interviewed indicated that they had taught or would teach their daughters that menstruation was a natural process and how to properly use sanitary products for healthy menstrual hygiene, and would pass on positive attitudes about menstruation. One participant interviewed who does not practice restrictive menstrual behaviors, said her daughter had asked about them:

I liked explaining what it used to be. So last time hearing she had a lot of questions for me. What did you do? How long? [There are] certain things I don't like about our own norms and practices, so I want to change [them]. I don't want to talk to my daughter [about them]. But some things I definitely want her to learn too. So safety wise, I want things to be safe, and nice and healthy for her (Int1).

However, the participant continued on to say that there are girls in the community that are being taught restrictive behaviors. She says,

But the thing is that I see in high school girls now, and when I bring up this conversation, a lot of girls agree to the old norms, I′m surprised. So you know, they say no, no, my mother said that we are not going to do this, so I′m not going to do it (Int1).

Of the women interviewed, two noted they had discussed menstruation with their preteen daughters and had placed sanitary pads in their backpacks. Three of the four participants interviewed felt that some women in their community were not knowledgeable about what menstruation was or how to manage their menstrual cycles in a healthy way. This had implications for these women's daughters, who, the participants said, were not receiving adequate menstrual education, even at school:

She [the mother] herself is twenty-eight, I would think. So, she had her first baby when she was sixteen. So her, the girl who is now nine or ten, not even ten I think, she had her first period when she was in school. And they called, the school called home, and this mom didn't know what to do. And she froze. You know. She didn't know what was going on?... But in that case, that happened at school and somebody called, and when she came home mom and daughter did not have any conversation. Like mom just took it as, you know like "ok"... So mom didn't have anything to talk to her. So she didn't know that she was supposed to tell her (Int1).

Participant responses reflect similar constructions of material events and situations concerning menstruation, as experienced by them. The data provide a broader cultural context for certain restrictive behaviors during menstruation. The underlying themes of individual knowledge, material environment and technology change, and social (re)construction, when mapped onto the SEM, can help illustrate the ways in which women construct their experiences of restrictive menstrual practices.

4.3 Survey Results

Thirty-one self-administered surveys were completed. Surveys were available in both Nepali and English. Twenty-three surveys were completed electronically, and eight hard copy surveys were completed during monthly BCAP meetings. Of the electronically administered surveys, two were automatically ended when respondents answered “Male” to the first question. Because of the overall low response rate, incomplete surveys were included in the descriptive analysis. The mean age of respondents was 35.5 years with age ranges of 16 to 50 years. Three-quarters of the respondents were born in Bhutan, and under one-quarter born in Nepal. Over half of respondents were Hindu, and one-quarter of respondents were Buddhist. The majority had lived in the U.S. between six to ten years. Living patterns were diverse, with a just over one-quarter of the respondents living with a husband only, and just under one-quarter living with a husband and children (**Table 3**).

Table 3: : Demographic characteristics of survey respondents

	Survey(n=31)
Age Category, No. (%)	**Responses (25)(%)**
45-54	9(36)
35-44	6(24)
18-24	6(24)
25-34	4(16)
Birthplace	**Responses (24)(%)**
Bhutan	18(75)
Nepal	5(21)
Other	1(4)
Religion	**Responses (24) (%)**
Hindu	15(63)
Buddhist	6(25)
Christian	3(13)
Years in U.S.	**Responses (21) (%)**
6-10	15(63)
11-15	4(16)
1-5	2(8)
Living With	**Responses (23) (%)**
Husband only	6(26)
Husband and children	5(22)
Parents only	4(17)
Children only	3(13)
Husband, children, and In-laws	2(9)
Husband, in-laws, and siblings	1(4)
Siblings only	1(4)
Husband, siblings, and children	1(4)
Age of Menarche	**Responses (19) (%)**
15	6(32)
11	4(21)
14	3(16)
13	2(11)
10	2(11)
16	1(1)

4.3.1 Knowledge and Perceptions Pre- and Post-Menarche

Responses about menstrual preparedness pre-menarche were almost equally distributed among not having learned anything, having learned something, and being unsure. Twenty-nine

percent (n=6) of respondents had not learned anything regarding menstruation before menarche and 24 percent were unsure if they had or not.

Of the 48 percent of respondents who did receive information related to menstruation before menarche, 58 percent said they received this information from their mothers, and 17 percent said the information came from a sister. Cousins, other relatives, and friends were also identified as sources of information related to menstruation (**Table 4**).

Table 4: Menstruation Information Source Pre-Menarche

Question: Who told you about menstruation before menarche?

Answer	%	Count
Mother	58.33%	7
Sister	16.67%	2
Cousin	8.33%	1
Friend	8.33%	1
Other relative	8.33%	1
Teacher	0%	0
Other	0%	0
Total	100%	12

Additionally, the most common reactions to menarche were not positive, and included Scared (70 percent), Confused (30 percent), Discomfort (30 percent), and Emotional disturbance (25 percent). None of the respondents selected happy (**Table 5**).

Table 5: Which of the following describes your reaction to your first menstruation? Check all that apply

Answer	Responses (n=20)(%)
Scared	14 (70)
Confused	6 (30)
Discomfort	6 (30)
Emotional Disturbance	5 (25)
Expectant	1 (5)
Happy	0 (0)
Other	1 (5)

When asked to choose what best described the way they thought about menstruation, 71.43 percent of respondents said "Physiological/natural process," nearly 15 percent responded "Untouchability," and less than 5 percent said "Curse from God," "Don't know," or "Fertility." None of the respondents chose "Blessing/celebration" or "Disease" (**Table 6**).

Table 6: Perceptions of Menstruation

Question: The following answers are ways of thinking about menstruation. Which of these BEST fits what you think about menstruation?

Answer	%	Count
Physiological/natural process	71.43%	15
Untouchability	14.29%	3
Curse from God	4.76%	1
Don't know	4.76%	1
Fertility	4.76%	1
Blessing/celebration	0.00%	0
Disease	0.00%	0
Total	100%	21

4.3.2 Menstrual Behaviors

Many respondents avoided certain activities during menstruation (67 percent) (**Table 7**). Of those respondents who did, 23 percent avoided celebrations and festivals, and 23 percent avoided cooking. Fourteen percent avoiding touching certain items, including plants, and 14 percent chose "Other." Fewer respondents reported avoiding activities such as housework, consuming certain foods, and serving food (**Table 8**).

Table 7: Restrictive Behaviors

Question: Do you avoid doing certain activities during menstruation that you usually do when you are not menstruating?

Answer	%	Count
Yes	66.67%	14
No	33.33%	7
Total	100%	21

Table 8: Types of behaviors avoided during menstruation

Question: What type of activities do you avoid when menstruating? Check all that apply.

Answer	%	Count
Avoid celebrations and festivals	22.73%	5
Avoid cooking	22.73%	5
Avoid touching certain things, including plants	13.64%	3
Avoid housework	9.09%	2
Avoid sleeping with husband	9.09%	2
Avoid eating certain food	4.55%	1
Avoid serving food	4.55%	1
Avoid cleaning	0.00%	0
Other	13.64%	3
Total	100%	22

Respondents opinions of what behaviors are permissible during menstruation were captured in a Likert scale (**Table 9**). There was high variation in these responses for most behaviors. However, all respondents disagreed (61.54 percent) or strongly disagreed (38.46 percent) that women are not allowed to see members of the family from the maternal side. Respondents most strongly disagreed (25 percent) or disagreed (16.67 percent) with going to temple and participating in religious ceremonies during menstruation.

Table 9: Importance of Avoiding Certain Behaviors During Menstruation

Question: While menstruating, women are not allowed to...

Question	Strongly Agree		Agree		Somewhat agree		Neither agree nor disagree		Somewhat disagree		Disagree		Strongly disagree		Total
See family members from maternal side	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	61.54%	8	38.46%	5	13
Cook/touch utensils	7.69%	1	23.08%	3	0.00%	0	0.00%	0	0.00%	0	61.54%	8	7.69%	1	13
Touch/sit/talk with male members of family	7.69%	1	7.69%	1	7.69%	1	7.69%	1	0.00%	0	38.46%	5	30.77%	4	13
Stay/go in another's house	7.69%	1	15.38%	2	7.69%	1	0.00%	0	0.00%	0	38.46%	5	30.77%	4	13
Go to temple/participate in religious ceremonies	25.00%	3	16.67%	2	16.67%	2	8.33%	1	0.00%	0	33.33%	4	0.00%	0	12

4.3.3 Social Attitudes and Behaviors

The importance of certain activities and behaviors had a distinct social aspect. Over half of the respondents (53 percent) reported avoiding activities more while with some people than with others. Of the respondents who reported this, 46 percent avoided activities more around their parents, followed by friends and other relatives at 15 percent. Others reported they avoided certain activities more when around in-laws and husbands (**Table 10**). Fifty-five percent of the respondents had a daughter and when asked the importance of their daughter avoiding certain activities during menstruation, 43 percent responded, “Very Important” and 15 percent reported “Moderately Important” (**Table 11**).

Table 10: Avoiding Acitivity with Certain People During Menstruation

Question: With whom do you experience more avoidance of activities?

Answer	%	Count
Parents	46.15%	6
Friends	15.38%	2
Brother/sister in-law	7.69%	1
Husband	7.69%	1
In-laws	7.69%	1
Siblings	0.00%	0
Children	0.00%	0
Other relatives	15.38%	2
Total	100%	13

Table 11: Importance of Daugher's Avoiding Activities During Menstruation

Question: How important is it to you that your daughter avoid certain activities when menstruating or when she begins menstruating?

Answer	%	Count
Extremely important	0.00%	0
Very important	42.86%	3
Moderately important	14.29%	1
Slightly important	0.00%	0
Not at all important	42.86%	3
Total	100%	7

5.0 Discussion

5.1 Intersections in Literature

This thesis explores how living in refugee camps and resettlement to the U.S., when experienced consecutively, influence a woman's menstrual behaviors in the Nepali-speaking Bhutanese community of Pittsburgh. The literature that informed this thesis demonstrates that time spent in refugee camps and resettlement to host countries has both distinct and overlapping impacts on menstrual behaviors. Sharma (2014) states the length of time spent in a host country and location of migration correlate with a woman's decision to alter menstrual behaviors. Schmitt and authors (2018) show that local circumstances, such as sanitation infrastructure and availability of sanitary products in refugee camps can also change menstrual practices. Sommer and authors' (2015) explanation that menstrual health management became more of a public health issue when family structure began to shift during the HIV epidemic is relevant for this study as well. Although Sommer et al. (2015) attribute the shift partially to urban migration and to the HIV epidemic, the same argument can be applied to refugee and migrant communities.

Social reconstruction, or change in family living arrangements and community cohesion for resettled refugees, can disrupt menstrual behaviors that relied on collective social pressure, as Sharma (2014) claims. For Bhutanese families in Pittsburgh, the experience of displacement in refugee camps and changing family living structures may shift menstrual behaviors. As Mengesha et al. (2018) highlight, MRW are at a higher risk for negative health outcomes than host-community women. It is therefore important that local services in Pittsburgh to address migrant communities' health be aware

that women in the Bhutanese community reconstruct and reinterpret their menstrual behaviors to fit their new social reality.

5.2 Socio-Ecological Model

Mengesha and authors' (2017) framing of MRW's SRH experiences in Western healthcare in the SEM is applied to this case study. Although Mengesha and authors (2017) specifically examine MRW's SRH, the SEM is appropriate to analyze menstrual behaviors to highlight the interrelationships between MRW and their socio-milieu. These interrelationships are supported with evidence from various studies (Kaur et al., 2018; Mohamed et al., 2018; Hawkey et al., 2017; Sharma, 2014; Sommer et al., 2014; Sapkota et al., 2013; Cicurel & Sharaby, 2007). By using the SEM, this study aims to illustrate the study participants' menstrual behaviors and knowledge – and the context in which those occur - so that local health systems, educational institutions, and migrant community centers can respond with appropriate interventions and programs addressing the menstrual health and menstrual education needs of women in the Bhutanese community of Pittsburgh.

This thesis uses the SEM specifically to organize and understand the contextual factors existing at multiple levels of the participants' lives and how they impact the participants' experiences and behaviors. The data collected from the survey, interviews and FGDs are used to examine how societal and environmental situations and individual knowledge that arise from migration have impacted and transformed the participants' menstrual behaviors

The overarching themes that emerged from the data – individual knowledge, material environment and technology change, and social (re)construction – can be mapped on to the SEM in order to

understand how each influences an individual's menstrual health. Each theme is prevalent on various levels of the SEM, illustrating the complex web of individual menstrual experiences and socio-milieu. Individual Knowledge is present on the Individual and Interpersonal levels. The second theme identified in the data, Material Environment and Technology Change, falls into the Individual and Organizational levels. Lastly, Social (Re)construction is found at both the Interpersonal and Societal levels.

5.3 Individual Knowledge

All the participants interviewed, and many of those in the FGDs, had no preparatory menstrual education or support from their mothers prior to and at menarche. In addition, data from the survey revealed that over 50 percent of respondents were unsure about receiving or did not receive preparatory menstrual education, and almost half experienced feeling "Scared" at menarche. Several studies have found that when a mother does not provide her daughter with menstrual education or support or a framework for understanding menstruation, a daughter is more likely to associate menstruation with shame or negative feelings (Costos et al., 2002) and practice unhealthy menstrual hygiene habits (Al Omari et al., 2015).

Although this case study's data show that some mothers in Pittsburgh's Nepali Bhutanese community do teach their daughters about menstruation, a cross-cultural study conducted with recent migrant and refugee women in Canada and Australia found that when educating their daughters, some mothers were hesitant and did not have the tools to convey information to their daughters regarding menstruation. They were also likely to pass on cultural beliefs that "might reinforce menstrual shame and stigma" (Hawkey, et al., 2017, p1485). The data from this study

indicate that knowledge transfer of both incomplete menstrual information and associations between menstruation and shame may still occur in the Nepali Bhutanese community in Pittsburgh.

Previous studies have found that women from both Western and non-Western cultures are paradoxically taught that menstruation is a source of shame, and a process to be celebrated because they can now procreate (Hawkey et al., 2017). As in the literature, this study found that many women in the Pittsburgh Bhutanese community chose to self-exclude from participating in religious events or celebrations during menstruation because of the concept that menstruation was shameful and impure. Although many of the participants recognized that menstruation is natural and in itself not a sin, many still admitted they felt ashamed to enter temple during menstruation and therefore would not go. This indicates that the paradox of menstrual significance continues to a certain extent and that concepts of menstruation being both a natural process and one of impurity are not mutually exclusive.

In her book, *Purity and Danger*, Mary Douglas (1966) offers a framework for understanding the duality of menstruation as both holy and celebratory. Douglas's theory explains that what a society defines as "dirt" is simply, "matter out of place" (p36). The explanation is appropriate for examining ideas about menstrual blood. Within culturally and religiously rooted menstrual practices in Bhutan, Nepal, and the diaspora, as menstrual blood crosses the boundaries from inside the body (to be celebrated) and outside of the body (sinful), it becomes matter out of place. Douglas's clarification of what is deemed clean and unclean helps inform the paradox the participants face.

The concept of acculturation further offers a framework in which to understand the paradox and participants' interpretation and performance of menstrual taboos. The integration approach of acculturation, as offered by Ward and Rana-Deuba (1999), most closely represented the

participants' decisions around menstrual behaviors. This approach, described as individuals who value cultural maintenance but also favor intergroup relations, helps inform the variations and changes in behavioral development and expression around menstruation. These changes are manifested in participants' choice to perform restrictive menstrual behaviors (avoidance of cooking and cleaning) only around older generations, while rejecting these behaviors when alone or with their peers and younger generations. The exception is avoidance of religious ceremonies and sites during menstruation. Thus, the process of acculturation allows Bhutanese women in Pittsburgh to accommodate information from Nepali and Bhutanese cultures and from the host-community, drawing values from each.

5.4 Material Environment and Technology Change

The evolution of and access to sanitary products throughout the participants' lives impacted their behavior during menstruation. Lee (2009) found that women often associated menstrual blood with ideas of pollution, impurity, and shame. The change in sanitary products appears to have had two relevant effects. First, with technology change came increased autonomy over disclosing one's period. Only a generation before that of the participants in this study, in Bhutan menstrual blood was absorbed directly into a woman's sari, which was difficult, if not impossible, to hide. As products became available to women that limited their intimate interaction with menstrual blood, they gained autonomy about when and to whom they disclosed their menstruation. Secondly, before arriving to the U.S., most of the participants managed their menstruation with reusable, washable pads, which put them more intimately in contact with menstrual blood. In Pittsburgh, women in the Bhutanese community reported mainly using disposable sanitary napkins. When

viewed through the lens of traditional menstrual taboos in the Bhutanese community, intimate interaction with menstrual blood may reinforce associations of shame and impurity. The intimate interaction with menstrual blood has decreased with the availability of new sanitary products within this community. This may be one reason for the decline in women's overall perception of, or belief in, menstrual taboos attached to shame and impurity, which potentially can influence menstrual behaviors.

5.5 Social (Re)construction

In Bhutan and Nepal, women traditionally went to live with in-laws when they were married. Although living with one's in-laws is still the preferred arrangement, new patterns have emerged in the United States. Many women among the Nepali-speaking Bhutanese in Pittsburgh do not live with their in-laws. This case study found that women who lived with their in-laws often reported practicing restrictive behaviors because their in-laws were less likely to tolerate non-adherence to these practices, suggesting generational pressure regarding experiences of menstruation. Women who did not live with their in-laws practiced restrictions in the presence of their in-laws, but at home they did not. This contrast suggests that respect for one's elders greatly influences a woman's menstrual behavior, but she will likely not pass those practices on to her daughter. Furthermore, as the younger generation gets older, these practices may become less relevant. Exceptions to this shift are exclusion from religious practices and attending temple.

These findings illustrate how living situations change the physical nature of a woman's menstrual experience and therefore, the possible social aspects of restrictive behaviors as well. The change in proximity to family members (in the refugee camps and in the United States) did not

allow for the same behaviors to be performed. Therefore, migration seems to significantly influence cultural practices by changing social arrangements.

6.0 Conclusion

In the last decade, the world's population of migrants and refugees has grown at an alarming rate due to climate change, civil conflict, poverty, and human rights violations. In 2019, the levels of displacement were the highest on record with 70.8 million forcibly displaced people and 244 million migrants worldwide (UNHCR, 2020). It is vital that host and asylum countries respond appropriately to incoming migrants and refugees as this trend is not soon to cease. As women represent almost half of all migrants and over half of the worldwide refugee population, understanding their experiences, opinions, needs, and priorities is integral to ensuring the responses and policies designed to protect and assist them are relevant and adequate.

One of the most important institutional responses to ensure that MRW are well-resettled is from the health care system. As Mengesha et al. (2018) and Hawkey et al. (2017) found, there are differences between and within MRW groups regarding levels of health knowledge, attitudes, and practices. This is especially true for health issues that may be culturally and religiously associated with shame and secrecy, such as menarche, menstruation, and menopause. The different levels of knowledge and preparedness have implications for both health care programs and services for MRW and MRW's interaction with the local health care system. Multi-level approaches to migrant health problems also highlight the value of bringing MRW voices into the process of designing solutions.

In Pittsburgh, the Nepali-speaking Bhutanese community is well-established. However, health care, migrant resource services, and the education system in Pittsburgh continue to fall short in meeting this population's culturally specific needs. Migrant women and girls have unique menstrual and reproductive health experiences. Health and educational institutions in Pittsburgh

are well-positioned to respond as it is home to one of America's leading health care providers, a hub of medical research, innovation, and a flourishing tech industry.

This project examined how women in the Bhutanese community of Pittsburgh reconstruct culturally and religiously rooted menstrual practices to fit into their current socio-milieu. The findings support previous research that demonstrates menstrual behaviors and practices constantly change over space and time within certain communities. Women in this study made sense of these practices and beliefs within the context of the landscape of migration and resettlement. They chose when and how to perform these practices and beliefs, and what to teach their daughters about menstruation. This case study helps to fill the current gap of knowledge about this community's menstrual behaviors and practices and informs the design of culturally appropriate menstrual and reproductive health care and education for migrant groups. It also aimed to help fill the overall gap in literature on MRW's menstrual health in Western countries.

The literature review for this project drew on the history of menstruation in public health and on the work of researchers prominent in the areas of migrant and refugee health, menstrual health, and culturally and religiously informed menstrual behaviors, with a specific focus on Southeast Asia. Findings from the literature review identified intersections within and between various bodies of literature and the current gaps on MRW's menstrual health in Western countries. The literature review also supported the design of all three data collection instruments.

This thesis gathered data from KII to inform the design of the interview and FGD schedule, as well as the survey. Semi-structured interviews were conducted with four women from the Nepali-speaking Bhutanese community of Pittsburgh, and two FGDs were held with attendees of BCAP's monthly women's group, all of whom were members of the community. Thirty-one

responses from the survey were collected as well. Data from all three sources was then analyzed and major themes were identified.

Findings from this study suggest that migration influences menstrual practices in the context of the Nepali-Bhutanese community in Pittsburgh. As these women's socio-milieu transformed during migration to Nepal and subsequently to the United States, so did their construction of and response to menstruation. This research demonstrates that women's menstrual practices are influenced by their individual knowledge and understanding of menstruation, their access to and affordability of improved menstrual technologies, and their social reconstruction, all of which are altered by migration. Women have adapted their menstrual practices to make sense of and accommodate the context in which they live.

Different living patterns (social reconstruction), continued menstrual education (individual knowledge), and access to new sanitary products (material environment and technology change) have enabled women to exercise more autonomy over decisions surrounding behaviors during menstruation. Examining participants' material experiences and situations allows for an understanding of how their sociocultural context has impacted their practice of restrictive behavior during menstruation. The data indicate that because of a lack of a coherent framework to understand menstruation, many women initially associated shame and impurity with menstruation prior to and after their first period. As newer sanitary products became available and living patterns changed, women had the ability to explore and re-create their own constructs of menstruation.

With this exploration often came the awareness of menstruation as a physiological process. Women have used their circumstances and new tools available to them (time, space, separation from in-laws) to develop new understandings of menstruation and alter restrictive behaviors. New living arrangements in Pittsburgh supported changing behaviors by giving women a choice when

and where to practice them under certain conditions. The research shows that respect towards elders still heavily influences a woman's decision to practice restrictive behaviors. This suggests that as the younger generation gets older, these practices may become less relevant. An exception to this is restriction from religious practices or attending temple. This paradox—believing menstruation is natural and not a sin but still refraining from going to temple or participating in religious activities because of the sin that would create—is still common among many women's menstrual behaviors.

6.1 Limitations

This study has several limitations, including the small sample size and use of chain referral for participant interviews, which may have resulted in a lack of variation of participants and data and may not be representative of the overall Nepali-speaking Bhutanese community in Pittsburgh. A further limitation is that participants were not interviewed in their own language, and the FGDs relied heavily on the use of an bilingual participants. Although many of the participants were proficient or fluent in English, or were able to respond through an interpreter, conducting data collection in their native language may have allowed for richer data.

The age of the participants in the FGDs ranged from approximately 20 to 80 years old, which added to the variation in perceptions on menstrual behaviors and beliefs and highlighted a generational division between older and younger participants. Given this division, additional FGDs organized and divided by age groups might have enabled younger participants to speak more freely about menstrual practices without the pressure of upsetting or contradicting the beliefs of older participants.

Data from the survey have limitations as well. The electronic version of the survey was only available in English and respondents had to be familiar and comfortable with electronics and technology (computers, smart phones) to compete the survey. This may have resulted in a sample that had higher levels of education and literacy than the overall population, indicating that self-selection bias may have occurred. Furthermore, because of the relatively small sample size of respondents, the survey had insufficient power and therefore results are not generalizable to the overall population of women in the Bhutanese community of Pittsburgh. However, descriptive data were included in analysis for the results and used to describe the variation within respondents, which reinforced findings from the qualitative data. Further research needs to be conducted to examine if this type of variation can be extrapolated to the general Bhutanese population in Pittsburgh or in other communities of migrants and refugees, given that these groups go through similar processes of acculturation.

Data from all surveys were analyzed, even if surveys were only partially completed. Broader and more strategic dissemination of the survey, as well as follow up, may have resulted in a higher response rate. The surveys were designed to be self-administered but based on the incompleteness of many of the surveys, surveys administered by the researcher could have ensured surveys were completed entirely, and thus provided for richer and more comprehensive survey data.

The structure of the survey could have been improved as well. Survey questions on location of birth and number of years a respondent lived in Bhutan and Nepal before arriving to the U.S. were designed to allow for high variation in place of birth and years living in Bhutan and Nepal. However, based on observations during the completion of the paper surveys at BCAP, this series of questions was confusing. Use of the Likert scale to measure participants perceptions of certain

behaviors during menstruation was likewise cumbersome and difficult to understand for many respondents. On the paper version, the survey flow instructions were not easily differentiated from the questions, causing confusing for many of the respondents. While all data collected from the survey questions were deemed valuable, the presentation and structure of the questions could have been made more concise and easier to understand.

6.2 Recommendations

Research on menstrual knowledge, attitudes, and practices in low-income countries and refugee and emergency-settings continues to grow and inform the development of policy and health care strategy globally. However, attention must also be paid to the growing number of migrants and refugees living in high-income countries where access to health care may be better, but services may not necessarily be attuned to the specific health needs of certain migrant and refugee populations. Furthermore, these populations may experience additional barriers to accessing health services and health education than their native peers. Based on previous research that has found women's and girls' cultural backgrounds and experiences influence their overall interaction and experiences with health care (Mengesha et al., 2017), training HCP to recognize structural influences on health outcomes is crucial, especially in the context of migration. Furthermore, as groups of migrants in high-income, Western countries negotiate often conflicting cultural ideals, especially those associated with menstruation and health, new beliefs and behaviors will emerge. Health systems, educational institutions, and migrant and refugee services are well positioned to facilitate and deliver menstrual health services, messaging, and education that

considers the evolving continuum and variation that exist for women and their constructions and experiences of menstruation.

Women in the Bhutanese community of Pittsburgh have a variety of menstrual behaviors, knowledge and preparedness that are influenced and shaped by complex, societal circumstances, including migration and acculturation. The participants in this study negotiate the challenges of acculturation differently, but certain menstrual taboos are still prevalent and practiced in the community, such as avoiding religious ceremonies and sites during menstruation. The literature and data from this case study demonstrate that menstrual behaviors and beliefs of the participants are influenced by the sociocultural environment in which they live. Identifying appropriate areas for programs and interventions can be done by using the SEM to map the complexities and variability of the participants menstrual decisions.

6.2.1 Intrapersonal Level

Previous research affirms that the level of a mother's menstrual knowledge and comfort engaging in discussions around menstruation influence if, how and when she will talk to her daughter about menstruation, and the content of the knowledge transfer. Data from the interviews suggest that some women in the Bhutanese community may feel unprepared, ill-equipped, or uncomfortable to provide their daughter with information on menstruation. Other mothers may rely on historical forms of menstrual knowledge transfer, with female relatives educating daughters about menstrual health and practices.

The Intrapersonal Level of the SEM includes a woman's peers, partners, and family members that influence her menstrual behavior and contribute to her menstrual experience. BCAP is well positioned within the community to deliver menstrual health education aiming to increase

menstrual knowledge around practices, beliefs, and the physiological aspects of menstruation. Women and girls from the Bhutanese community should lead educational classes, with technical and material support from a partner group, such as Planned Parenthood of Western Pennsylvania. This would ensure menstrual education is tailored to the community and delivered it in a manner that is appropriate to community values. Menstrual health programs, classes, or workshops could be conducted during the monthly women's meeting and youth groups in order to reach both mothers, female relatives, and daughters. It may be beneficial to design programs with these groups together and separately, given that daughters may receive conflicting information from different sources in their lives, including their mothers, communities, educational institutions, and peers. Additional classes and groups should engage men and boys in order to increase their awareness and knowledge around healthy and safe menstruation.

6.2.2 Organizational Level

Of the 54 Pittsburgh Public Schools, ten schools are designated as English as a Second Language Regional Centers, in which concentrated language instruction is offered to non-native English speakers (Pittsburgh Public Schools, 2020), including migrants and refugees from Central America, Africa, the Middle East and Asia. These schools—six elementary, four middle, and two high schools—are located in areas of the City of Pittsburgh in which higher concentrations of migrants and refugees live, including the area in which many Bhutanese have resettled. These students receive classes with both exclusively other ESL students, and together with the general school population.

The Pennsylvania State Board of Education requires that students of all grades receive planned instruction aligned with academic standards in health and physical education. Reproductive health is integrated into the health curriculum at middle school and high school levels (Commonwealth of Pennsylvania, 2020). However, based on the findings of this case study, girls within the Bhutanese community attending Pittsburgh Public Schools may not receive sufficient menstrual education to healthily manage their menstruations. Additionally, they may receive conflicting information about menstruation from their mothers, family members, and peers.

The English as a Second Language (ESL) Regional Centers are well suited to provide menstrual education that acknowledges the complexities and variation of menstrual decisions and knowledge among the migrant and refugee students. Menstrual education within this context should begin in late elementary school. It should employ participatory, interactive, and engaging methods which assess boys' and girls' biological knowledge about menstruation, as well as culturally and religiously informed menstrual behaviors within their communities. Given that ESL students are from an array of backgrounds and thus may have different menstrual behaviors and beliefs, instructors should use prompts to facilitate discussion and engage students in dialogue about the cultural differences in menstrual knowledge and behavior. Menstrual education should aim to improve students' individual knowledge and attitudes about menstruation while respecting alternative discourses that students may encounter in their own communities. Girls should gain the knowledge and information to be able to manage menstruation with safety and dignity using appropriate materials (based on preference and affordability), both at school and at home.

6.2.3 Societal Level

Because menstrual practices are often culturally and religiously rooted, health care services on menstruation must be sensitive to culture and the diversity of beliefs and practices, as well as recognize the structural barriers to accessing menstruation education and knowledge that exist. Structural competency, which is used most often within healthcare, is the ability to discern how issues that are clinically defined as symptoms, diseases, and attitudes are influenced by 'upstream' social determinants of health (Metzl & Hansen, 2014). Results of this case study substantiate the need for HCPs to recognize structural barriers MRW face to secure accurate menstrual information, advice, and support that many participants reported existed in the Bhutanese community. These barriers suggest an integration of a structural competency approach in HCP training could address menstrual health—and more broadly sexual and reproductive health—disparities (including education, behaviors, and practices).

The level of HCP preparedness, knowledge, and cultural awareness can affect the health seeking behaviors and utilization of SRH by MRW (Mengesha et al., 2018). Furthermore, by recognizing structures that shape HCPs' interactions with MRW—such as immigration and refugee policies, political trends, health insurance systems, and health system funding mechanisms—HCPs can gain a deeper understanding of the structures that are shaping clients' health outcomes. With that understanding, HCP will be better equipped to recognize opportunities to support patients as they navigate these structures.

It is crucial to include cultural awareness and structural competency as pillars in HCP's training. Trainings must emphasize that while migrant or refugee groups may share common beliefs, groups are likely not homogenous (Mengesha et al., 2018; Hawkey et al., 2017), given the influence of social structures and societal, organizational, intrapersonal and individual level factors

on MRW's levels of knowledge and comfort regarding menstruation. HCPs should assess the cultural beliefs and knowledge of a patient, as well as her level of desire for information, education, and consultation. As the literature also notes, some newly arrived MRW may not have the knowledge necessary to associate menstruation with fertility or have limited knowledge of SRH. Results from this study corroborate such findings, suggesting that health services designed to meet the needs of women from this community should be sufficiently flexible to accommodate different levels of SRH knowledge and different menstrual constructions, beliefs, and behaviors. HCP trainings that utilize the SEM in a structural competency approach would allow HCP to analyze the social and environmental conditions that influence MRW's SRH and menstrual health knowledge and practices.

6.2.4 Future Research

In conclusion, as the Nepali-Bhutanese community in Pittsburgh continues to age, and a new generation will have spent more time in Pittsburgh than in their or their family's country of origin, restrictive behaviors during menstruation may decrease. This does not negate the urgent need for menstrual health programming and education for this population that recognizes the structural barriers that influence menstrual knowledge and practices. This study found that religiously and culturally rooted menstrual behaviors and beliefs are continuously being reshaped and re-experienced by women and girls; menstrual health programming and education must accommodate the spectrum and evolution of these practices. This requires further research on how the experiences and constructs of menstruation influences their health care and seeking decisions, with a wider focus on sexual and reproductive health. Particularly important are programs targeting younger generations who may not receive adequate information about menstruation in educational

institutions. The health programming recommendations for SRH services, and menstrual health and education require further community-engaged research into the subject. The experiences, needs, priorities, and opinions of women in the Bhutanese community should directly inform the above-mentioned services, and community-engaged research should be the vehicle that carries their voices to inform these health policies and programs.

6.2.5 Advocacy

As migration patterns across the globe continue to shift and expand, countries receiving migrants and refugees must respond with institutional flexibility to adequately meet the needs of newcomers and ensure their human rights. Furthermore, Western countries must build opportunities to integrate the vast knowledge and talent migrants and refugees have so as not to lose their extraordinary contributions to society. As a regional leader in health care, with powerful research universities and a growing center for tech innovation, Pittsburgh has ample resources at its disposal to ensure new migrant and refugee groups from all over the world have the ability and tools necessary to achieve healthy and happy lives.

Appendix A Semi-structured Interview Guide

Can you tell me a little bit about yourself and your family?

How long have you been in Pittsburgh?

Where were born?

Did you live in Bhutan? If so, when and for how long did you stay?

How long did you live in Nepal?

Which caste/ethnic group do you identify with? (e.g., brahmin, chhetri, janajati, etc.)

Do you have family here?

Whom do you live with?

What do you think of when you hear the word menstruation? How do you define menstruation?

What other words do you use to describe menstruation?

Where did you learn about menstruation/who taught you about menstruation?

Can you tell me about the first time you learned about menstruation?

Can you tell me about your first period?

How did you feel?

Where were you?

How did you manage?

Were you in the camps in Nepal or Bhutan?

Growing up and living in Nepal/Bhutan, what was the perception of menstruation in your community?

What practices did people follow during menstruation back in Nepal/Bhutan? How did they manage?

Did people talk openly about menstruation in your community? Explain.

Now that you live in the U.S., what practices do you follow in your household during menstruation?

Are there specific rules that you must follow? Explain.

Are there things that you can/cannot touch? If yes, which things?

Do you follow different sleeping arrangements during menstruation? Where do you sleep?

Are there any other activities that you do/ do not do when you are menstruating?

Has your understanding of menstruation changed since you migrated to the U.S.?

If so, how?

If no, why not?

Why do you think your understanding of menstruation has/hasn't changed since migrating to the U.S.?

Have your menstrual practices changed since you migrated to the U.S.?

If so, how?

If no, why not?

Why do you think practices have/haven't changed since migrating to the U.S.?

Are there any similarities in how women in your community (Bhutanese refugees) manage menstruation in the U.S. compared to Nepal?

What about key differences?

What do programs or interventions aimed at helping Nepali women in Pittsburgh manage their menstrual cycles need to consider?

What do programs need to consider for helping Nepali women in Pittsburgh more generally?

Are there any other thoughts or comments that you would like to share?

Appendix B Survey Tool with Flow

Q1 What is your gender?

- Male (1)
- Female (2)

Skip To: End of Survey If What is your gender? = Male

Q2 What is your age?

_____

Q3 What is your religion?

- Hindu (1)
- Buddhist (2)
- Christian (3)
- Muslim (4)
- Other (5) _____
- None (6)

Q4 Whom do you live with at present? (Check all that apply)

- [ ] Parents (1)
- [ ] In-laws (2)
- [ ] Husband (3)
- [ ] Siblings (4)
- [ ] Brother/Sister In-law (5)
- [ ] Children (6)
- [ ] Friends (7)
- [ ] Other Relatives (8)
- [ ] Alone (9)

Q5 Where were you born?

- ○ Bhutan (1)
- ○ Nepal (2)
- ○ U.S. (3)
- ○ Other (4) _____

Display This Question:

If Where were you born? = Bhutan

Q6 How long did you live in Bhutan?

- Less than a year (1)
- 1-5 years (2)
- 6-10 years (3)
- 11-15 years (4)
- 16-20 years (5)
- Over 20 years (6)

Display This Question:

If Where were you born? = Bhutan

Q7 How old were you when you left Bhutan?

- Less than a year (1)
- 1-5 years (2)
- 6-10 years (3)
- 11-15 years (4)
- 16-20 years (5)
- Over 20 years (6)

Q10 How long did you live in Nepal?

- 0-5 years (1)
- 6-10 years (2)
- 11-15 years (3)
- 16-20 years (4)
- Over 20 years (5)

Q11 How old were you when you left Nepal?

- Less than a year (1)
- 1-5 years (2)
- 6-10 years (3)
- 11-15 years (4)
- 16-20 years (5)
- Over 20 years (6)

Display This Question:

If Where were you born? Other Is Not Empty

Q30 How long did you live in another country?

- 0-5 years (1)
- 6-10 years (2)
- 11-15 years (3)
- 16-20 years (4)
- Over 20 years (5)

Display This Question:

If If Where were you born? Other Is Not Empty

Q31 How old were you when you left another country?

- Less than a year (1)
- 1-5 years (2)
- 6-10 years (3)
- 11-15 years (4)
- 16-20 years (5)
- Over 20 years (6)

Q12 For how many years have you lived in the U.S.?

- Less than a year (1)
- 1-5 years (2)
- 6-10 years (3)
- 11-15 years (4)
- 16-20 years (5)
- Over 20 years (6)

Q13 The following answers are ways of thinking about menstruation. Which of these BEST fits what you think about menstruation?

- Physiological/natural process (1)
- Blessing/celebration (2)
- Curse from god (3)
- Untouchability (4)
- Fertility (5)
- Disease (6)
- Don't know (7)

Q14 At what age did you have your first menstruation?

_____

Q15 Which of the following describes your reaction to your first menstruation? Check all that apply.

- ☐ Happy (1)
- ☐ Scared (2)
- ☐ Discomfort (3)
- ☐ Emotional disturbance (4)
- ☐ Expectant (5)
- ☐ Confused (6)
- ☐ Other (7) _____

Q16 Before your first menstruation, had you learned anything about menstruation?

- ○ Yes (1)
- ○ No (2)
- ○ Unsure (3)

Q17 Did anyone tell you about menstruation before your first menstruation?

- ○ Yes (1)
- ○ No (2)
- ○ Unsure (3)

Display This Question:

If Did anyone tell you about menstruation before your first menstruation? = Yes

Q32 If so, who told you about menstruation?

- ○ Mother (1)
- ○ Sister (2)
- ○ Cousin (3)
- ○ Other relative (4)
- ○ Friend (5)
- ○ Teacher (6)
- ○ Other (7)

Q18 From whom did you receive information about menstruation? Check all that apply.

- ☐ Mother (1)
- ☐ Sister (2)
- ☐ Cousin (3)
- ☐ Other relative (4)
- ☐ Friend (5)
- ☐ Teacher (6)
- ☐ Other (7)
- ☐ No one (8)

Q19 Do you avoid doing activities during menstruation that you usually do when you are not menstruating?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Do you avoid doing activities during menstruation that you usually do when you are not menstruating... = Yes

Q20 What type of activities do you avoid when menstruating? Check all that apply.

- ☐ Avoid celebrations and festivals (1)
- ☐ Avoid certain food (2)
- ☐ Avoid housework (3)
- ☐ Avoid cooking (4)
- ☐ Avoid cleaning (5)
- ☐ Avoid touching certain things, including plants (6)
- ☐ Avoid sleeping with husband (7)
- ☐ Avoid serving food (8)
- ☐ Other (9) _____

Q24 Some women experience more avoidance of activities while with some people than with others. Do you?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Some women experience more avoidance of activities while with some people than with others. Do you? = Yes

Q25 With whom do you experience more avoidance of activities?

- ☐ Parents (1)
- ☐ In-laws (2)
- ☐ Husband (3)
- ☐ Siblings (4)
- ☐ Brother/sister in-law (5)
- ☐ Children (6)
- ☐ Friends (7)
- ☐ Other relatives (8)

Q21 If you have a daughter, will or does your daughter avoid certain activities when menstruating?

- ○ Yes (1)
- ○ No (2)
- ○ Do not have daughter (3)

Q22 How important is it to you that your daughter avoid certain activities when menstruating or when she begins menstruating?

- ○ Extremely important (1)
- ○ Very important (2)
- ○ Moderately important (3)
- ○ Slightly important (4)
- ○ Not at all important (5)

Q23 For the following questions, please indicate whether you agree or disagree with the following statements.

	Strongly Agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
Menstruation signals the body is functioning normally (1)	○	○	○	○	○	○	○
God will curse family members if cultures/practices are not followed during menstruation (2)	○	○	○	○	○	○	○
An increase in supplementation of nutritious food is necessary during menstruation (3)	○	○	○	○	○	○	○
Men will become sick when menstruating women touch them (4)	○	○	○	○	○	○	○
Certain plants will die when menstruating women touch them (5)	○	○	○	○	○	○	○
Menstruating women should not eat certain food (6)	○	○	○	○	○	○	○
Restriction in household tasks during menstruation is **NOT** significant (7)	○	○	○	○	○	○	○

Self-esteem increases after menstruation (8)	○	○	○	○	○	○	○

Q26 While menstruating, women are...

	Strongly Agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
Not allowed to go to temple/participate in religious activities (1)	○	○	○	○	○	○	○
Not allowed to see members from maternal side (2)	○	○	○	○	○	○	○
Not allowed to cook/touch utensils (3)	○	○	○	○	○	○	○
Not allowed to touch/sit/talk with male members of family (4)	○	○	○	○	○	○	○
Not allowed to stay/go in another's house (5)	○	○	○	○	○	○	○
Allowed to enter the kitchen after a bath on the 4th day of menstruation (6)	○	○	○	○	○	○	○

Q27 For the following questions, please indicate how important it is that when menstruating, women...

	Extremely important (1)	Very important (2)	Moderately important (3)	Slightly important (4)	Not at all important (5)
Not go to temple/participate in religious activities (1)	○	○	○	○	○
Not to cook/touch utensils (2)	○	○	○	○	○
Not to touch/sit/talk with male members of family (3)	○	○	○	○	○
Not to stay/go in another's house (4)	○	○	○	○	○
After 4 days of menstruation, take bath and only then allowed to enter kitchen (5)	○	○	○	○	○

Q28 For the following questions, please indicate how important it is that girls are taught that when menstruating they...

	Extremely important (1)	Very important (2)	Moderately important (3)	Slightly important (4)	Not at all important (5)
Not go to temple/participate in religious activities (1)	○	○	○	○	○
Not to see members from maternal side (2)	○	○	○	○	○
Not to cook/touch utensils (3)	○	○	○	○	○
Not to touch/sit/talk with male members of family (4)	○	○	○	○	○
Not to stay/go in another's house (5)	○	○	○	○	○
After 4 days of menstruation, take a bath and only then allowed to enter kitchen (6)	○	○	○	○	○

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