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A qualitative exploration of women's sanitation-related bodily integrity, safety, and privacy in Kampala, Uganda

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A qualitative exploration of women's sanitation-related bodily integrity, safety, and privacy in Kampala, Uganda

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2019

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Abstract

A qualitative exploration of women's sanitation-related bodily integrity, safety, and privacy in Kampala, Uganda

By: Courtney Pico

Introduction: An estimated 673 million people (9%) still practice open defecation globally. Women and girls are disproportionally impacted by sanitation, not only because of biological differences, but also due to gender roles, socio-cultural norms, and barriers that contribute to unsafe sanitation experiences. The aim of this qualitative research is to explore bodily integrity, safety, and privacy related to women's sanitation experiences in Kampala, Uganda.

Methodology: This is a secondary analysis of 16 cognitive interviews that were conducted with women over 18 years old in three different neighborhoods (Kisenyi III, Upper Naguru and Naguru Godown) of Kampala, Uganda. The interviews were conducted as part of the MUSE Project, which aims to develop measures of women's sanitation-related empowerment in urban contexts. To develop a cohesive survey tool that can be used across different cultures, MUSE facilitated cognitive interviews with women in both Kampala, Uganda and Tiruchirappalli (Trichy), India. A brief quantitative survey was also conducted before each cognitive interview was facilitated to gather demographic information from each participant.

For analysis**,** the 16 cognitive interview transcripts from Kampala, Uganda focused on 'resources' were uploaded into MAXQDA 2020, a qualitative data analysis program. The textual data were analyzed using a thematic analysis approach to analyze women's perceptions of sanitation-related bodily integrity, safety, and privacy. The 16 transcripts were coded in MAXQDA. The coding process of the 16 cognitive interview transcripts allowed for the data to be reduced into meaningful categories to determine apparent themes that could be examined

across the data set. Codes were also further compared by variable in order to identify themes that emerged across type of sanitation (private, shared, or public), age, and situational preferences.

Results: Safety and privacy serve as integral components to bodily integrity and are not exclusive in women's sanitation experience. A majority of women's responses frequently related to two or all three of the subdomains in question. For most of the elicited responses, one subdomain often impacted the anther. Health issues were found to be related to safety concerns, lack privacy impacted feelings of safety, and suppressing the need to urinate or defecate due to safety concerns caused adverse health impacts. When women shared experiences that adversely impacted their overall physical and mental well-being (bodily integrity), they usually coincided with concerns for their safety. When women mentioned issues regarding their sanitation-related safety, these usually impacted their privacy and overall physical and mental well-being (bodily integrity). In addition, when women mentioned matters that impacted their sanitation-related privacy, these too usually impacted their overall safety and well-being (bodily integrity).

Discussion: . Findings from the thematic analysis showed that women's sanitation experiences in Kampala, Uganda adversely impacted their sanitation-related bodily integrity, safety, and privacy. Women's who shared anecdotes about how negative sanitation experiences adversely impacted their sanitation-related bodily integrity often also stated there was a negative impact to their sanitation-related safety. Barriers that created an unsafe sanitation experience, also impacted women's sanitation-related bodily integrity and privacy. In addition, situations that negatively impacted the women's sanitation-related privacy would then also negatively impact their bodily integrity and safety. The shared responses collected from the women in cognitive interviews, showed that there was a clear interconnectedness to the subdomains as their

responses often times included reference to an issue related to a combination of two or all three the subdomains.

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Contribution of Student

I worked with the MUSE Project team on this qualitive thematic analysis in order to explore the themes of bodily integrity, safety, and privacy from cognitive interview transcripts from Phase 1 of the MUSE Project. I completed the thematic analysis using MAXQDA under the guidance of my thesis chair Dr. Bethany Caruso and my thesis committee member, Dr. Sheela Sinharoy.

Chapter I: Introduction

There are 7.9 billion people on the planet, yet global sanitation hasn't developed fast enough to keep up with this number. Globally, 45% of the population has access to safely managed sanitation, 29% has access to basic sanitation, 8% has access to limited sanitation, 9% has access to unimproved sanitation and 9% still practice open defecation. This equates to roughly 2.4 billion people not having access to a safely managed sanitation facility. Although the global sanitation burden impacts billions of people, it is women and girls who carry the weight of this global burden (Sweetman and Medland 2017; UNICEF and WHO 2019)

Women and girls are most impacted by the global sanitation burden due to biological differences, gender roles, socio-cultural norms, and barriers to sanitation-related safety and privacy(Caruso et al. 2017; Caruso et al. 2017). These factors, coupled with poor sanitation facilities, put women and girls at risk of having their sanitation-related bodily integrity, safety, and privacy compromised. (Caruso et al. 2017; Caruso et al. 2017; Sweetman and Medland 2017).

Bodily Integrity

Bodily integrity is defined by van Eerdewijk et al. (2017) as "a woman or girl having control over her physical and mental well-being." (van Eerdewijk et al. 2017). Findings from previous research shows that women will withhold food and water to prevent the need of having to urinate or defecate, suppress the need to urinate or defecate, or wait until late night and early morning to safely find a private place to relieve themselves in the dark(Caruso et al. 2017; Caruso et al. 2017; Khanna and Das 2016; Routray et al. 2015; Sahoo et al. 2015). Women and girls adapt by suppressing when they feel that their safety or privacy is being compromised in their sanitation experiences. Research also shows that due to sanitation related environmental

and psycho-social stressors, women and girls also suffer from various mental health issues (Sclar et al. 2018). Research has shown that safety and privacy are main components of bodily integrity and are integral to "a woman or girl having control over her physical and mental well-being"(van Eerdewijk et al. 2017).

Safety

van Eerdewijk et al. (2017) defines safety as "enabling women and girls to live their lives free from acts or threats of violence (physical or sexual), or coercion" (van Eerdewijk et al. 2017). Research on women experiencing violence in their sanitation experiences has found that women and girls who rely on open defecation as a means to relieve themselves face a 40% higher risk of experiencing gender based violence (GBV) and non-partner sexual violence (NPSV) than those who use private or shared facilities (Sommer et al. 2015a; Winter and Barchi 2016). Additionally, studies that were conducted in India, Uganda, and Kenya found that participants routinely faced both physical and verbal assault in their sanitation experiences and that women who had an increased risk for violence at night would resort to suppression of urine and feces or using a bucket in their homes (Kulkarni et al., 2017; Schouten and Mathenge 2010; Tumwebaze et al. 2013). For many women in these studies, their concern for privacy largely impacted their feelings of safety and overall well-being in their sanitation experiences.

Privacy

Privacy is not defined in the empowerment framework by van Eerdewijk et al. (2017) however, it is defined by Sclar et al. (2017) as "an individual's ability to feel free from observation or disturbance by others" in their systematic review of sanitation and well-being, which discusses how privacy and safety are interconnected (Sclar et al. 2017). Previous research has found that issues related to privacy are the most common contributors as to why women feel

unsafe in their sanitation experiences along with making them more susceptible to situations that can compromise their safety and bodily integrity. Lack of access to safe sanitation has the greatest influence on privacy and safety for women and also causes women to then experience increased risk for violence and mental health issues such as anxiety, embarrassment, or shame if their privacy is compromised (Bisung and Elliott 2016; Hirve et al. 2015; Kulkarni et al. 2017; Sahoo et al. 2015; Sclar et al. 2017)

Importance of this research

Although the findings from previous research have shed some light, there is a gap in research explicitly looking at how safety and privacy are interconnected with issues and themes surrounding bodily integrity. Through this research on women's sanitation experiences in Kampala, Uganda, a comprehensive thematic analysis was conducted to address this gap by identifying themes that emerge across the three subdomains (bodily integrity, safety, and privacy) and how they are interrelated roles of safety and privacy on bodily integrity.

Chapter II: Lit Review

Global sanitation and the impact of improper sanitation on women

In 2015, the General Assembly of the United Nations identified proper sanitation as a human right (UNICEF) and WHO, 2019). However, 2.4 billion people globally still do not have access to safely managed sanitation and approximately 673 million people (9% of the global population) still practice open defecation (OD) due to lack of access to any form of sanitation facility (UNICEF) and WHO 2019). Although billions of people are impacted by the lack of safe sanitation facilities it is largely women and girls who are at an increased risk of physical and sexual violence, lack of privacy, and negative health impacts due to improper sanitation facilities (Sclar et al. 2018).

Although people having access to safely managed sanitation is an issue of global concern, Sub-Saharan Africa has some of the lowest rates of people having access to safely managed or basic sanitation. In Sub-Saharan Africa, only 18% of the population has access to safely managed sanitation, while 12% has access to basic sanitation, 18% has access to limited sanitation, 31% has access to unimproved sanitation, and 20% of the population still practices open defecation (UNICEF) and WHO 2019). From 2000 – 2017, 39 countries indicated an increase in the number of people in their population who practiced open defecation and a majority of those countries were in Sub-Saharan Africa (UNICEF) and WHO) 2019).

Women and girls face more of the direct consequences of poor sanitation than men and boys do, largely because women and girls experience and require different sanitation needs than men (Sweetman and Medland, 2017). Women and girls experience menstruation, pregnancy, childbirth, and menopause throughout their lifetime, which men and boys do not experience. Due to these life experiences, women and girls have additional sanitation requirements, like needing a

place to change and dispose of menstruation products, that are often overlooked due to patriarchal hierarchies that place loaded stigmas, taboos, and cultural norms on female sanitation practices (Sweetman and Medland, 2017). Gender roles, gender expectations, and socio-cultural interpretations of gender coupled with poor sanitary settings can also pose threats to the sanitation-related safety of women and girls (Caruso et al. 2017).

Biology, gender, and culture are not the only reasons women and girls face more direct consequences from WASH disparities. When women and girls lack access to safe sanitation facilities, they are at an increased risk for gender-based violence (GBV) and non-partner sexual violence (NPSV) (Sommer et al. 2015b; Winter and Barchi 2016). Additionally, multiple research studies have found that lack of access to safe sanitation has the greatest effect on sanitation-related privacy for women. Research has also found that women who experience a lack of safety and privacy due to sanitation infrastructure are also at an increased risk of violence and mental health issues, particularly anxiety, embarrassment, or shame (Bisung and Elliott 2016; Hirve et al. 2015; Kulkarni et al. 2017; Sahoo et al. 2015; Sclar et al. 2017).

Women's and girls sanitation-related experiences in Sub-Saharan Africa

Sanitation research in Sub-Saharan Africa has found that safety and privacy play pivotal roles in women's sanitation experiences. For example, a qualitative study using 130 women completed in Kibera, Kenya by Amnesty International found that multiple women in the focus groups reported that they did not feel safe walking to the latrines, and that most of the women reported experiencing rape or non-sexual violence when trying to practice open defection or attempting to walk to or from a latrine (Amnesty International, 2010). A different study in Kibera, Kenya completed by Schouten et al. (2010) utilizing 76 surveys on communal sanitation alternatives found that the study participants who identified as women reported not using the

communal toilets at night due to safety and security reasons (Schouten and Mathenge 2010). A study conducted by Tumwebaze et al. (2013) on the sanitation facilities in the urban slums of Kampala, Uganda found that more than half (51.7%) of participants were not satisfied with their sanitation facilities due to safety reasons, like cleanliness, and privacy reasons, like lack of privacy and too many people using the same facility (Tumwebaze et al. 2013).

Bodily integrity, safety, and privacy as critical sanitation-related resources for women

Bodily integrity, safety, and privacy, all play a significant role in women's and girls' sanitation experience. In their work conceptualizing empowerment, van Eerdewijk et al. (2017) indicate that bodily integrity and safety, are key resources that are critical to empowerment *(*van Eerdewijk et al. 2017). In their conceptual model, van Eerdewijk et al. define bodily integrity as " a woman or girl having control over her physical and mental well-being." (van Eerdewijk et al. 2017). They consider safety and security, which they define as "enabling women and girls to live their live free from acts or threats of violence (physical or sexual), or coercion" (van Eerdewijk et al. 2017). Although privacy is not discussed by van Eerdewijk et al. (2017) in the conceptual model, in the systematic review that discusses how privacy and safety are interconnected Sclar et al. (2017) defines privacy as "an individual's ability to feel free from observation or disturbance by others" (Sclar et al. 2017). Sclar et al. also identified privacy as linked to safety due to the influence that individual factors like gender and location of the sanitation facility can have on the sanitation experience (Sclar et al. 2017). The systematic review also found that in general, lack of access to sanitation had the greatest influence on safety and privacy. Further, sanitation research has shown that safety and privacy are main components of the overall health and well-being of women but the term "bodily integrity" is not explicitly used. Both safety and privacy are

integral to "a woman or girl having control over her physical and mental well-being"(van Eerdewijk et al. 2017).

Bodily integrity and the sanitation experience for women and girls

Sanitation-related bodily integrity has not been explicitly addressed through research as safety and privacy have. Much of the research that has been conducted thus far, however, has aligned with the definition by van Eerdewijk (2017), with a heavier focus on mental health and disease. Women have shared personal stories about negative impacts to their physical and mental well-being due to the ways they adapt their sanitation behaviors to compensate for when they feel their safety or privacy may be compromised. Ways that women adapt their sanitary needs due to feelings of stress or anxiety that are caused by lack of sanitation-related safety and privacy include: withholding food and water, suppressing the need to urinate or defecate, waiting until the late night and early morning to safely find a private place to relieve themselves in the dark, or using a bucket or bag inside their home for urination or defecation, especially at night (Caruso et al. 2017; Caruso et al. 2017; Khanna and Das 2016; Routray et al. 2015; Sahoo et al. 2015). Several of the studies that mentioned women practicing withholding food and drinks stated that they do so in order to avoid the need to defecate altogether (Khanna and Das 2016; Kulkarni et al. 2017). Studies have also found that if women feel that their privacy is compromised, then they will stop in the middle of urinating or defecating and stand to ensure that their body is not exposed until their privacy is restored (Caruso et al. 2017; Hirve et al. 2015; Kulkarni et al. 2017; Routray et al. 2015) In the study by Kulkarni et al. (2017), some women reported that they would carry spices and stones with them as a means to protect themselves and their overall physical well-being in case their safety or privacy was infringed upon while using their sanitation facility (Kulkarni et al. 2017). Uncontrollable circumstances largely related to safety and privacy like

acts of violence, peeping, or spying are why many women frequently experience negative mental health impacts and often feel safer when suppressing themselves, withholding food or drink, and using a bucket in their own home.

Safety and the sanitation experience for women and girls

Sanitation research has addressed safety and security as aligned with the definition from van Eerdewijk et al (2017), including assault and harassment. However, women have also voiced concerns about their personal safety related to animals, people, and dirty conditions of their facility when meeting their sanitation needs. The most predominant reasons women feel unsafe are due to risk of harassment; physical, sexual, and verbal assault; people; animals; disease; and dirty conditions (Caruso et al. 2017; Caruso et al. 2018; Jadhav et al., 2016; Kulkarni et al. 2017; Sahoo et al. 2015; Sclar et al. 2017; Sommer et al. 2015; Winter and Barchi 2016). Studies on violence and safety related to women's sanitation experiences found that women who used public latrines or practiced open defecation were at an increased risk for gender based violence (GBV) and non-partner sexual violence (NPSV)(García-Moreno et al. 2013; Sommer et al. 2015). Specifically, a study done by Winter and Barchi (2016) found that women who practice open defecation are at a 40% higher risk of facing GBV and NPSV than those who have access to a private or shared sanitation facility (Winter and Barchi 2016). Kulkarni et al. (2017) conducted qualitative research on safety in regards to the women's sanitation experience and found that women routinely face GBV and harassment when attempting to utilize public toilets or practice open defecation (Kulkarni et al. 2017). The same study also found that men were watching and taking pictures of the women and girls while they practiced open defecation, making inappropriate comments, and making the open defecation site a regular hangout spot (Kulkarni et al. 2017). The findings from this study by Kulkarni and other safety research on

sanitation shows that privacy is linked to safety in the women's sanitation experience cross-culturally.

Privacy and the sanitation experience for women and girls

In order for an individual, especially women and girls, to feel safe in their preferred sanitation facility, sanitation facilities need to be private. Research has shown that women and girls are more susceptible to peeping, spying, harassment, and physical and sexual violence due to a lack of privacy. For example the systematic review completed by Sclar et al., (2017) found that public sanitation facilities can promote an unsafe environment due to issues in the infrastructure, location, and maintenance of the facilities that does not uphold total privacy (Sclar et al. 2017). When looking at public sanitation facilities, multiple studies reported facilities to have no locks, broken or non-functioning doors, and low walls, all impacting privacy in the sanitation experience, especially for women (Corburn and Hildebrand 2015; Kulkarni et al. 2017; Sclar et al. 2017). Although private sanitation facilities can be seen as safer, these facilities may also have no locks, no door, no roof, broken walls, or be placed in an unsafe location which all have negative impacts on overall privacy (Khanna and Das 2016; Sahoo et al. 2015; Sclar et al. 2017). For example, two studies conducted in two different parts of India found that privacy and lack thereof was a dominant issue in the sanitation experience. Women in both of these studies stated that a lack of privacy induced emotional, social, and cultural stress (Hirve et al. 2015; Sahoo et al. 2015).

Research has also shown that women state their sanitation experiences can be shameful if their privacy was compromised and if they were seen by men while being exposed in order to relieve themselves (Sahoo et al. 2015). Women and girls will adapt their sanitation behaviors to promote better privacy for themselves by walking long distances to practice open defecation,

waiting until the early hours of the morning or late hours of the night to find privacy in the dark, or go to the facilities in groups or pairs in order to protect each other's privacy (Hirve et al. 2015; Khanna and Das 2016; Kulkarni et al. 2017; Routray et al. 2015; Sahoo et al. 2015; Sclar et al. 2017). Although all of this research shows how privacy not only impacts the safety but also the physical and mental well-being (bodily integrity) of women and girls, there is still a gap in research which looks at bodily integrity more broadly in relation to safety and privacy in the women's sanitation experience.

Gaps in the research on safety, privacy, and bodily integrity in relation to women's sanitation experiences

There has been increasing research on sanitation-related safety and privacy but bodily integrity has not been as engaged in current sanitation research. Research thus far has engaged aspects of bodily integrity like mental health but has not broadly evaluated the concept of bodily integrity as a whole. In a systematic review that evaluated the relationship between sanitation and mental and social well-being, Sclar et al. (2017) found important linkages between sanitation related safety and privacy. However, bodily integrity has not been explicitly engaged in research. Much of the research that has been done on women's sanitation experiences have looked at safety and privacy in terms of violence and sanitation facility location. However, research has failed to investigate how safety, privacy, and bodily integrity are interrelated in the women's sanitation experience. This thesis aims to explore the bodily integrity, safety, and privacy and how these themes may be interrelated for women in Kampala, Uganda.

Research Context

Emory University, with funding from the Bill and Melinda Gates Foundation (BMGF) is working towards generating ways to measure women's sanitation-related empowerment with an

emphasis on urban contexts. The The Measuring Urban Sanitation and Empowerment (MUSE) project aims to develop various scales and indices to measure women's empowerment in the context of urban sanitation (MUSE Project n.d.).

The project is comprised of four different phases with the goal of developing survey tools to assess "sanitation-related empowerment broadly, and/or by the domains and sub-domains." Measures will enable stakeholders to better understand women's empowerment in relation to sanitation and to determine what programs, initiatives, and policies need to be made in order to create change (Caruso et al. 2020)

The MUSE project operates around the BMGF definition of empowerment that was developed by van Eerdewijk et al (2017) in *A Conceptual Model of Women and Girls' Empowerment.* van Eerdewijk et al. define empowerment as "the expansion of choice and strengthening of voice through the transformation of power relations so women and girls have more control over their lives and futures" (van Eerdewijk et al. 2017). According to van Eeerdewijk et al. (2017) the three key domains of empowerment are agency, resources, and institutional structures. The resources domain houses the subdomains bodily integrity, safety, and privacy, which are explored in this thematic analysis to understand the interrelated nature among these subdomains from the lived experiences of women in Kampala, Uganda.

Utilizing MUSE Project data to explore bodily integrity, safety, and privacy

The aim of this qualitative research is to explore the themes that emerge related to bodily integrity, safety, and privacy from women's sanitation experiences in Kampala, Uganda. For this research a thematic analysis was conducted on the cognitive interview transcripts that were conducted as part of the MUSE Project in 2019. The purpose of having participants complete a cognitive interview was to assess content validity of newly developed survey questions, or, more

specifically, to assess if survey questions adequately measured the specific domain of empowerment and if they were understood by the study population as intended. The results from this research will be used to better understand women's sanitation experiences specifically for sanitation, in the urban slums of Kampala.

Application of findings

Currently, the Kampala Capital City Authority (KCCA) is implementing the City-Wide Inclusive Sanitation (CWIS) Program throughout the city of Kampala. The goal of the program is to increase access to improved onsite sanitation services (OSS) while an aim is to "establish a framework for women's participation in decision making and entrepreneurship in sanitation by assessing baseline conditions and putting in place forums that specifically steer inclusion of women in the sector at all levels and along the entire chain." *(OSS)* (Anon n.d.). Findings from this thematic analysis can help to inform government officials and actors about the actual conditions of sanitation facilites and the experiences women and girls have while utilizing them.

Chapter III: Methodology

Study background

The research is embedded within the MUSE project, which aims to develop and validate survey tools to assess women's empowerment in relation to urban sanitation. The conceptual model of women and girls' empowerment by van Eerdewijk et al. (2017) informs the MUSE project. The framework describes the three domains of empowerment: resources, agency, and institutional structures. Each of these domains also has related subdomains. In order for the MUSE project to develop a cohesive survey tool, cognitive interviews (CIs) were conducted with women in both Kampala, Uganda and Tiruchirappalli (Trichy), India using three different interview guides, which were the three domains of empowerment: resources, agency, and institutional structures.

Cognitive interviews were conducted in both Kampala and Tiruchirappalli to determine if the questions developed for the survey tools were understood and relevant in the study context, for concept elicitation, and to test out multiple questions around the same topic (Beatty and Willis 2007; Boateng et al. 2018). The questions that were similar on the cognitive interviews were phrased in different ways to determine which questions would work best for the developed survey tool. Questions that were determined as the best were then retained for the final survey. This qualitative analysis leverages cognitive interview data collected from 16 participants using the interview guide for the resources domain in urban Kampala, Uganda in July and August of 2019.

Study Setting

Kampala is the capital city of Uganda with a total of 44.3 million people where more than 62% of the population resides in urban slums (The World Bank 2020) (Uganda Bureau of

Statistics (UBOS). 2016). The population is about evenly split with 51% of the population being female and 49% of the population being male (The World Bank 2020). Those who live in the urban slum areas are classified as low-income urban dwellers. Due to the slums being densely populated, many households (34%) rely on using communal pit latrines (Uganda Bureau of Statistics (UBOS). 2016). According to the 2014 Census data for Uganda, 3% of households in the urban areas reported having no access to a toilet facility (Uganda Bureau of Statistics (UBOS). 2016).

Cognitive interviews were conducted in three neighborhoods of Kampala: Kisenyi III, Upper Naguru and Naguru Godown. These three neighborhoods were selected in partnership with the United Slum Dwellers Federation. Upper Naguru and Naguru Godown are both located in Naguru II and were chosen as study sites because they were both flagged as a Citywide Inclusive Sanitation (CWIS) model parish. CWIS initiatives are sanitation programs that are being implemented in urban middle and low income countries with the aim to ensure that everyone has access to safely managed sanitation (Worldbank n.d.).

Data Collection

Study Partners

Emory University MUSE Project staff partnered with Athena Infonomics to work on the ground in Kampala to help with data collection. Athena Infonomics works in Kampala to help build and maintain relationships with local organizations, and work on projects related to Citywide Inclusive Sanitation (CWIS) programming. Athena Infonomics hired local women from the Kampala area as data collectors. The women who were hired had previously worked for the government of Kampala or for various nonprofits on different data collection projects. All of the hired data collectors were experienced in qualitative methods and data collection. The data

collection team was trained by the MUSE project staff on gender, empowerment, WASH, ethics, consent, and the data collection instruments prior to data collection.

Cognitive Interview Guides

While a total of three cognitive interview guides (tools) were utilized for the cognitive interviews one representing each domain of empowerment: agency, resources, and institutional structures this research focuses on data collected with the tool focused on resources. The resource guide utilized questions focused on critical consciousness, bodily integrity, and assets.

Cognitive Interview facilitation

In each of the cognitive interviews participants were asked to answer the questions honestly based on their own sanitation experiences. The participants were walked through each question on the cognitive interview guide by an interviewer. If the participant had questions or if they were confused by a question, they were encouraged to think about the question out loud. This outward thinking process allowed for the data collectors to observe if the survey question was being understood in the way the MUSE team intended. If the participant was confused on the question, then they were asked by the interviewer to rephrase the question into terms that the participant understood. The outward thinking process also allowed for the research team to be able to identify any language or cultural context issues in the phrasing of the survey questions.

The cognitive interviews were facilitated by the data collectors hired by Athena Infonomics. In each cognitive interview, there was an interviewer and a note taker present. The data collectors were fluent in both Luganda and English. Data from the cognitive interviews was collected in either Luganda or English depending on what the participant was more comfortable with. If the participant was confused on certain words due to translation, then the interviewer or note taker would translate the word into a different language (usually the tribal language of the

participants ethnicity) for the participant to better understand the question being asked. A simple quantitative survey facilitated at the beginning of the cognitive interviews gathered demographic information from each of the participants. After the consenting process took place, enumerators read through the demographic questionnaire and the participants would verbally answer each question. Each of the cognitive interviews lasted between 60 -120 minutes due to the voluntary nature of the study. Participants were only interviewed one time and were not required to participate in any follow up discussions or surveys.

Recruitment

To recruit participants in Kisenyi III, the MUSE project team worked with the United Slum Dwellers Federation where two women helped to recruit local participants into the study. The two women from the Urban Slum Dwellers Federation office held roles as a community leader of the federation and a chairperson of the federation. In Upper Naguru and Naguru Godown, a local community leader helped to recruit study participants. All three of the women who aided in recruitment were well respected and trusted members of the community, who would in some cases also perform introductions of the enumerators before participants welcomed them into their households.

Eligibility

Women in the selected neighborhoods were eligible to participate if they were: over age 18 and spoke either Luganda or English. However, beyond these eligibility requirements and in order to gain variable insights, participants from different life stages were purposively sought: unmarried, married women from 25-40 years old, and women over the age of 40. The predetermined life stages were selected by the research team because prior research and data had shown that women in the three listed stages all have various experiences in regards to their

sanitation experience (B. Caruso et al. 2017)(Caruso et al. 2018)(Hulland et al. 2015)(Sahoo et al. 2015).

Data management

In order to preserve the privacy of the participants, all participant data was deidentified. Each set of field notes and transcripts of the cognitive interviews for every participant was given a 12 digit unique ID. All of the interviews were recorded and once the recordings were transferred onto a computer, the recordings were deleted from the recording device. After the team had conducted two cognitive interviews, a debriefing session was lead by a member of the MUSE project team with the data collection team and the note taker that was present during the cognitive interviews. The debriefings were conducted in order to evaluate how the cognitive interview sessions went and to debrief about what the participants may have said in the interviews.

Once all data collection was complete, the recordings from the cognitive interviews were then simultaneously translated and transcribed verbatim and deidentified. Two enumerators from the data collection team for Uganda aided the deidentification, transcription, and translation, and transcription review process of all cognitive interviews. After this process was complete, a third enumerator then went through and listened to 10% of each interview and independently translated and transcribed a small section of the transcript as a form of a "quality check". The transcription review process was completed by October 2019, and all transcriptions were completed in Microsoft Word in order for data to be utilized for data analysis.

Data Analysis

This exploratory qualitative analysis was completed to gain further insights regarding the subdomains of bodily integrity, safety, and privacy in relation to women's sanitation experience

in Kampala, Uganda. Only the transcripts from the cognitive interviews using the resource tool (n=17) were used for analysis because the interviews using this specific tool contained the richest data in relation to the three subdomains in question: bodily integrity, safety, and privacy. However, the analytic sample for this research is 16 as one of the transcripts could not be coded for analysis as it only contained the consenting process of the cognitive interview. In this specific transcript, it was noted that the recording device had died after the consenting process but the interviewer and note taker did not notice until the end of the interview process.

For analysis, the 16 cognitive interview transcripts that utilized the resource survey tool from Uganda were uploaded into MAXQDA 2020, a qualitative data analysis program. The textual data were analyzed using a thematic analysis approach to analyze women's perceptions on bodily integrity, safety, and privacy in regards to sanitation. Initially, all of the 16 transcripts were read through and analytic memos were written in order to begin the code development process. After multiple read throughs of the transcripts and the memos, a preliminary codebook was created a priori, with codes based on the subdomains in question (safety, privacy, bodily integrity). Following close review of the qualitative data, further inductive codes were created based on themes that emerged from the data which were then added to the codebook. Codes for the qualitative data analysis were developed to capture specific concerns, behaviors, and issues raised by participants in relation to safety, privacy, bodily integrity, sanitation, and situational preferences. The final codebook that was used for analysis consisted of 27 codes. Each code had a specific definition attached to it and an example of when to use the code. Both the definition and the example provided in the codebook for each code was a way to ensure that each code could not be confused with another code and that thorough coding of the transcripts could take place during analysis.

At the beginning of the analysis stage, both myself and another student (who was using MUSE project data from Tiruchirappalli coded one transcript that was rich in data regarding bodily integrity, safety, and privacy. After we each coded an individual transcript from our respective countries, we then met to walk through the coded transcripts line by line, code by code, in order to confirm we both had a mutual understanding of the code definitions. This process was conducted as a form of intercoder agreement as the other student and I shared the created codebook for analysis. Once this process was complete and all of the code definitions were agreed upon, analysis of the remaining transcripts began.

The coding process of the 16 cognitive interview transcripts allowed for the data to be reduced into meaningful categories to determine apparent themes that could be examined across the data set. Once coding was complete, MAXQDA was then further utilized to begin the data searching process in order to look at particular codes, issues, or themes one at a time (Hennink et al., 2020). MAXQDA was then used to retrieve coded segments to analyze both individual and pairs of codes to identify patterns that emerged and notes were taken on the emerging themes. Codes were also further compared by variable in order to identify themes that emerged across type of sanitation (private, shared, or public), age (18-25, 25-30, 40+), and situational preferences. After the initial data search was complete, significant themes discovered in this stage were then categorized and thick descriptions of each theme were written in order to understand the variation, context, depth, and nuances of each issue (Hennink et al. 2020). Qualitative conceptualization was useful at the end of analysis in order to understand the interconnectedness of the codes and themes that emerged during the analyzation process (Hennink et al. 2020). Detailed findings from the thematic analysis of this data are presented in the results section.

Ethics

IRB

Due to the nature of this qualitative research study, retrieving IRB approval was necessary. Before Phase 1of the MUSE project was implemented in Kampala, Uganda, data collection activities and protocols were reviewed and approved by Internal Review Boards (IRBs) at Emory University (USA; IRB 00110271), and Makerere University (Uganda; Ref. No. 2019-038).

Informed consent

Consenting of each participant took place before each cognitive interview began. Each of the data collectors were trained on the consenting process. All of the consent documents were in English and translated to Luganda if necessary. In the consenting process, each participant was explained what was expected from them. Participants were allowed to skip questions if it made them feel uncomfortable, to ask questions during any point of the cognitive interview, and could stop the interview at any point. Each participant was asked to sign the consent form. If participants could not write, they gave a thumb print as a signature while a note taker was present in order to serve as a witness to the process.

Chapter IV: Results

Participant Demographics

Participant ages ranged from 18-79 with the mean age of participants being 35 years old. Six (38%) of the participants were unmarried, 6 (38%) were married women aged 25-40 years old, and 4 (25%) were over 40 years old. Eleven (69%) participants completed more than primary education and 5 (31%) completed primary or less than primary. The most common religion among participants was Christian (non-Catholic) 9 (56%) and the two most common ethnic groups that participants belonged to were Acholi, 4 (25%) and Baganda 3 (19%). The living situations of the participants varied as 4 (25%) lived in a single family home, 7 (44%) lived in a compound with shared living spaces including their sanitation facilities, and 5 (29%) did not clearly specify(Table 1).

Participant sanitation inforamation

In terms of sanitation, only 2 (12%) participants used a private sanitation facility for only their household, while 5 (29%) used a community sanitation facility, 7 (41%) used a shared sanitation facility owned by the same landlord with more than one household, and 2 (12%) did not specify their sanitation facility type. The average number of households sharing a sanitation facility among those who reported their usual facility was a shared facility was 5 (2-10) and 86% of participants used a sanitation facility that was used by both men and women. In terms of overall satisfaction with their facility, 1 (6%) participant said they were satisfied, 3 (19%) said they were satisfied with the overall cleanliness of their facility, 7 (44%) said they were satisfied with the overall privacy of their facility, and 2 (13%) said they were with the overall safety of their facility (Table 2).

Women's sanitation-related experiences in regards to bodily integrity, safety, and privacy

There was an overlap of themes related to the bodily integrity, safety, and privacy. Women in the cognitive interviews frequently shared beliefs, thoughts, or concerns about how their sanitation-related bodily integrity impacted their safety, how barriers to their sanitation-related safety and privacy impacted their overall physical and mental well-being (bodily integrity), or how barriers to their sanitation-related privacy impacted their safety and their overall physical and mental well-being (bodily integrity). The issues that reoccurred amongst most of the cognitive interviews that impacted the women's sanitation-related bodily integrity, safety, and privacy include: health outcomes, pregnancy, suppression, situational preferences, interpersonal and domestic violence, animals and insects, darkness, types of people, and sanitation infrastructure. The women who mentioned these issues in their responses in the cognitive interviews also described the negative impact that these issues had on their sanitation-related bodily integrity, safety, and privacy simultaneously. These issues not only had negative impacts on the overall health and well-being of the women in the study, but also created a cause and effect reaction to the three subdomains. From the insights that the women shared, it was apparent that bodily integrity, safety, and privacy are not exclusive to each other but are interconnected. The most frequently mentioned themes related to the subdomains bodily integrity, safety, and privacy and how they are interconnected in the women's sanitation experience are touched upon in their individual sections below and are also cross referenced in the other sections in the following paragraphs.

Bodily Integrity

The definition of bodily integrity used for this study is "a woman or girl having control over her physical and mental well-being." (van Eerdewijk et al. 2017). Participants in this study expressed thoughts and concerns for issues that impacted their physical and mental well-being

such as infections, cleanliness of facility, pregnancy, suppression and violence. For the purpose of this research the definition of bodily integrity included issues related to infections, cleanliness of facility, pregnancy, suppression and violence and the 16 transcripts were coded for bodily integrity if any of those issues were mentioned.

Impact that poor sanitation facilities have on women's physical health outcomes

Cleanliness of the sanitation facility and perceived risk of catching a disease directly impacted women's sanitation-related bodily integrity. Many women reported that they experienced a negative health impact from using a dirty facility. Specifically, almost all of the participants expressed fear of catching a disease due to the cleanliness of their facility. Roughly half of the sixteen respondents reported that they had experienced one or more of the following from using a dirty sanitation facility: a Candida infection, itching of their pubic region, or stomach pain or cramps from using a dirty facility and or from suppressing the need to urinate or defecate. For example, one participant stated that "infections normally come as a result of using a dirty toilet." (age 28, shared facility). Another participant shared that "we are too many people using the small toilets and a lot of infections and diseases come with it" where she also shared that she herself had experienced a Candida infection three times and has had itching in her private parts (age 22, shared facility). A third participant shared the concern that "women can get disease like Candida or Syphilis" when using a dirty facility (age 19, shared facility).

Impact poor sanitation facilities have on women's mental health outcomes

In addition to the physical health outcomes reported surrounding bodily integrity, mental health outcomes were also noted. Almost all the participants mentioned having some sort of feeling of fear, anxiety, or stress around using their preferred method of sanitation, whether from people, animals, catching a disease, lack of privacy, or using their sanitation facility at night. For

instance, one participant stated that she "never feels calm at night" when using her sanitation facility because of the people and the darkness in and around the toilet" (age 22, shared facility). A second participant shared a similar notion, stating that she doesn't feel calm at night when using her facility "because she is always panicking and hurrying to finish and run back to the house" (age 40, shared facility). Notably, a different participant stated she never feels calm when using her facility because there is no lock and there is space between the wood and the door (age 24, shared facility). The infrastructure issues of this woman's sanitation facility shows how lack of privacy can cause mental health impacts for women. Lack of privacy causing this feeling of distress also illustrates how privacy can impact the bodily integrity of women in their sanitation experiences. Multiple women had similar responses like the examples mentioned as to why they felt distressed or uncalm when accessing their preferred sanitation facility. However, many of the participants listed direct fears that elicited negative mental health issues like stress and anxiety, that are talked about more in depth in the safety section below.

Pregnancy heightens health concerns and increases facility avoidance

Although not a dominant concern from participants, a few women mentioned how pregnancy caused them to be more worried about health concerns in regards to using a dirty sanitation facility. Two participants in particular mentioned that although in the last 30 days they did not fall ill or catch a disease from using a dirty facility, when they were pregnant they avoided using the facility due to fear of catching a disease. For example, one of the two women who mentioned this stated "when I was pregnant I avoided going to the toilet with my pregnancy because I didn't want to catch infections from the toilet because they say that pregnant women can easily catch Candida" (age 79, shared facility). Another participant stated that although she never suppressed herself, she knew of pregnant women who did suppress themselves to avoid

using a dirty facility(age 42, shared facility). The most notable remark from a participant who mentioned pregnancy in relation to her sanitation experiences stated that from using a dirty facility she "got Candida and had a miscarriage as the result" (age 43, shared facility).

Circumstances that cause women to suppress themselves

Along with health concerns that caused women to feel hesitant to use their sanitation facility or resort to suppression of urine and feces, about half of the participants mentioned varying circumstances such as work load or being in public spaces that caused them to suppress themselves as well. For most of the women who shared these anecdotes, if their preferred facility was extremely dirty, their workload was too heavy, or if they were out in public places (school, the market, work, and visiting friends or family), then they were more likely to suppress themselves. One participant shared that "because of the maggots and the toilet being dirty" she would suppress herself from using the toilet often (age 25, shared facility). Another participant stated "when I'm at work and I have a lot of work to do, then I try to suppress the urge" (age 40, private facility). A different participant shared that "[she] holds whenever [she] goes to the market because she cannot go there" (age 25, shared facility). Fear of the dark also caused women to sometimes suppress themselves, and is discussed further in the safety section. However, one participant who mentioned darkness stated that at night she sometimes suppresses herself if she had nobody to escort her to the facility because she feared being in the dark with people (age 40, shared facility). A number of the women in this study shared similar concerns where different safety issues had a negative impact on their overall physical and mental well-being, which are addressed further in the safety section.

Safety

The definition of safety used for this study is "enabling women and girls to live their live free from acts or threats of violence (physical or sexual), or coercion" (van Eerdewijk et al. 2017). However, participants in this study expressed safety concerns beyond this scope. In this research, the concept of safety expanded to include anytime women mentioned issues that caused threats to their safety, including physical, sexual and verbal violence, along with stray dogs, maggots, darkness and people.

Interpersonal violence in women's sanitation experiences

The majority of respondents mentioned that they feared physical or sexual assault, although almost all of them had never experienced it themselves. Almost every participant shared that they felt that women in their community face the risk of being physically harmed by men or boys when using or going to their usual sanitation facility. All of the women who mentioned this also shared the belief that women in their community risked being sexually assaulted when using or going to their usual sanitation facility as well. One of the participants explicitly stated that they themselves had been attacked. The participant that shared her experience stated that she was sexually assaulted when attempting to use her preferred sanitation facility and that the same man who attacked her attempted to rape her neighbor as well (age 22, shared facility). A second woman also shared that in her neighborhood "a girl was going to be raped at the shared sanitation facility but she overpowered the boys" (age 42, shared facility). Another participant stated that "there are always drunkards coming from the market who always rape women" when going to the sanitation facility (age 26, shared facility). Likewise, another woman shared that women could be easily raped when going to the toilet by "a drunkard and you might scream and no one helps you out either" (age 24, shared facility).

Domestic violence in women's sanitation experiences

While not the dominant opinion, four of the women did agree that women in their community were at risk of being hit by their husbands or partners if they did not ask for permission before going to the facilities. Of those who reported that women in their community could be beaten if they did not ask for permission, three of them also stated that women in their community also face the risk of being beaten if they are not escorted to their sanitation facility. For instance, one of the four women stated “my husband does not do this but there are some households where this is done” (age 24, shared facility) when explaining that women could be beaten if they are not escorted to their sanitation facility. Two of the women who shared this belief about domestic violence and escorting stated that sometimes if the woman of the house takes a long time getting to and from her preferred sanitation facility, the husband or partner will assume that she is off with another man and then beat her when she returns home.

Fear of animals and insects in women’s sanitation experiences

In addition to fearing assault from people, women expressed fear about stray dogs and maggots. Four of the participants said that they feared stray dogs although they had never experienced an attack when walking to or from their preferred sanitation facility. One participant stated that she “fears the dogs but they are not there every day” (age 18, shared facility). A second participant stated that she feared that the stary dogs would bite her especially at night (age 24, shared facility). In regards to maggots, one participant shared that she feared maggots especially during the rainy season as this is when they would come to the top of the feces in the latrine (age 22, shared facility). A second participant also stated that rainy season causes the maggots to come to the surface and because of her fear of them, she will suppress herself, which then causes her to have stomach pains (age 25, shared facility).

Darkness heightening feelings of insecurity

One of the most common inhibitors to safety in the sanitation experience among most of the respondents was lack of lighting in their preferred sanitation or on the path to their preferred facility. A majority of the women stated that during the day, their facility had enough light due to the sun. However, at night their fear of the darkness was exacerbated due to their facility not having a torch light or due to the pathway of the facility being extremely dark. One of the women stated that "at night it's not safe because there is no light but during the day its fine because the light is there" (age 40, public facility). Another participant stated that "sometimes she will suppress herself at night because they don't have a security light" for her shared sanitation facility (age 24, shared facility). Almost all of the women who participated in the cognitive interviews reported that they felt more at risk for physical or sexual assault at night because of the darkness as well. Due to the increase in fear of the darkness of the facility, fear of walking to and from the facility in the dark, and uncertainty of not knowing who could potentially be hiding in the dark (men, drunkards, thieves) almost all of the women interviewed opted to suppress themselves or use a bucket in their home for urination or sanitation at night.

Different types of people that made women feel unsafe

Different types of people elicited feelings of fear due to threatening behaviors like assault, robbery, spying or peeping, which were commonly reported by participants. Many of the respondents reported having a fear of one or more of the following types of people when attempting to access their preferred sanitation facility: men, boys, peeping kids, drunkards, thieves, and drug addicts. A majority of the respondents also reported that their fear of men, thieves, drunkards, and drug addicts increased at night. Nearly all of the women who stated that they feared they could be sexually, physically, or verbally assaulted feared that this would be done by men, boys, drunkards, or drug addicts. The women who reported feeling unsafe due to

thieves mostly stated that they felt unsafe walking to and from their sanitation facility because they could potentially get robbed or assaulted by these types of people. For almost all of the women in the study, the fear or lack of safety due to men, boys, kids, drunkards, thieves, and drug addicts was one of the predominant determining factors in why women would opt for a bucket in their home to urinate or defecate during the night versus using their designated sanitation facility.

Privacy

The definition for privacy that informed this analysis is “an individual’s ability to feel free from observation or disturbance by others” (Sclar et al. 2017). However, participants in this study expressed privacy concerns beyond this scope. Through our analysis, the definition of privacy was expanded to include anytime women mentioned infrastructural issues with their sanitation facility that they felt created barriers to their overall sanitation-related privacy such as: gaps in the walls, gaps in the doors, holes in the walls, no door, no lock, a broken lock, large gaps in the ceiling and walls, or the facility being close to a main road or walking path. Therefore, the cognitive interview transcripts were coded with this expanded definition.

The majority of study participants stated that the infrastructure of their preferred sanitation facility was a reason why they felt like their privacy could be compromised. One or more of the following infrastructural issues were mentioned by the participants as reasons that hindered their ability to have complete privacy: gaps in the walls, gaps in the doors, holes in the walls, no door, no lock, a broken lock, large gaps in the ceiling and walls, or the facility being close to a main road or walking path. For example, one participant stated “There’s not enough privacy here because there are holes in the door and also I have to keep holding the door for myself when I am urinating.” (25, shared facility). Most of the participants shared the same

response where they stated that the doors or locks were non-functional, or missing from their preferred satiation facility. About half of the women who reported having their privacy compromised stated that they would suppress themselves while they were already using the facility if they felt they were being watched, heard, spied or peeped on.

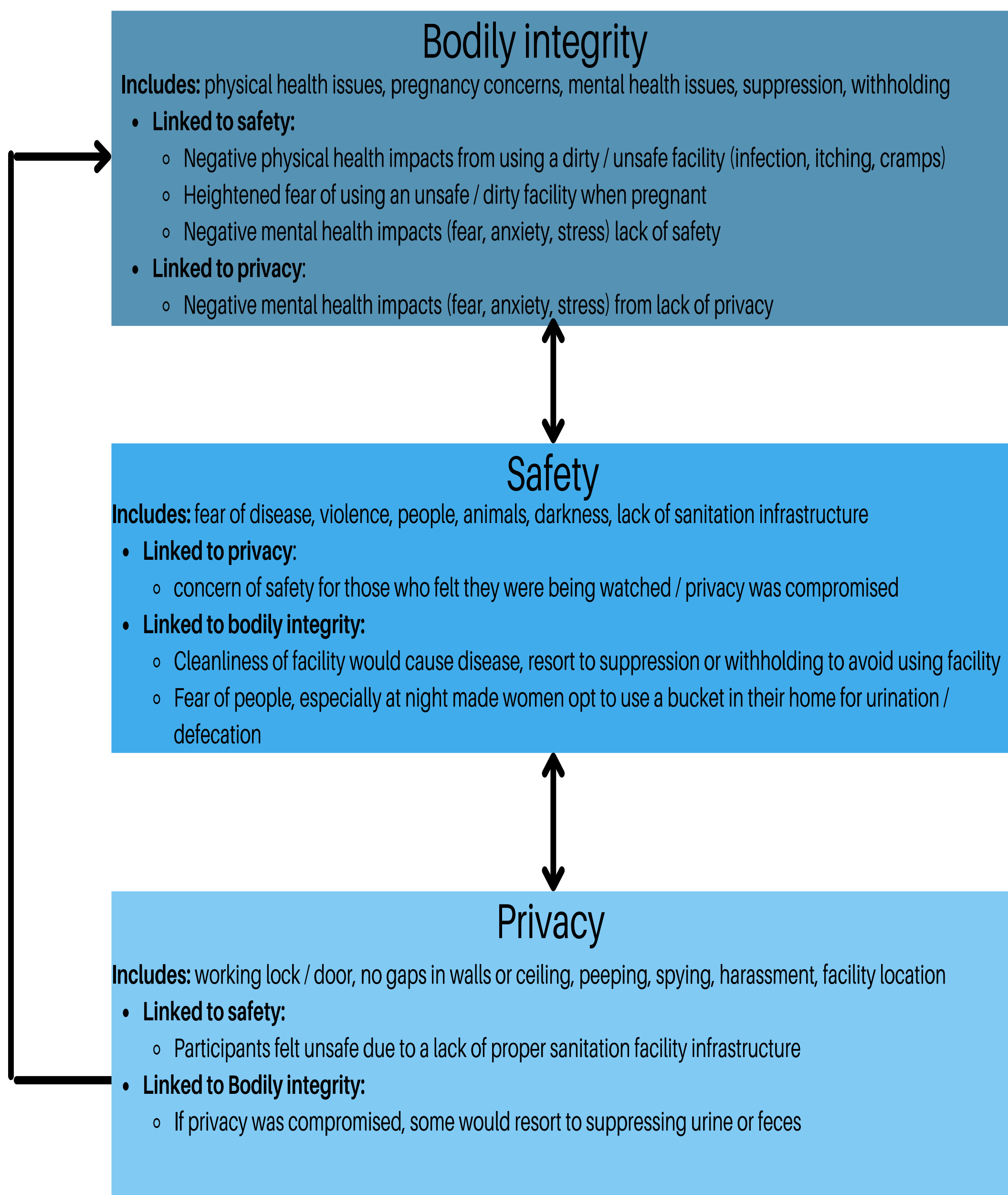
When many of the participants mentioned an issue that hindered their privacy, they often followed by stating that the lack of privacy in their sanitation facility also made them feel unsafe. A few of the women mentioned that due to the sanitation facility structure (gaps in the doors, gaps in the walls and ceiling, holes in the walls, no door, or no working lock, or the facility being close to a main road or walking path) they felt unsafe because this gave men and boys the opportunity to peep or spy on them or put them at an increased risk for sexual violence. The majority of the study participants stated they have either had or felt like they could have their privacy and safety compromised by men, boys, or kids when using their preferred sanitation facility due to infrastructural issues.

The inter-related nature of women's sanitation related bodily integrity, safety, and privacy

Assessment on the inter-related nature of women's sanitation-related bodily integrity, safety, and privacy was completed during analysis. Safety and privacy serve as integral components to bodily integrity in the women's sanitation experience. A majority of the participants responses from the cognitive interviews frequently related to two or all three of the subdomains in question. For most of the elicited responses, a thought, concern, or belief about one of the subdomains often impacted the others. When women shared experiences that adversely impacted their bodily integrity, they usually coincided with concerns for their safety. When women mentioned issues that created barriers to their safety, these barriers also usually impacted their privacy and bodily integrity. In addition, when women mentioned matters that

impacted their sanitation-related privacy, these too usually impacted their overall safety and well-being. In Figure 1, the most common links from one of the subdomains to the others are noted in their respective box. The black arrows are shown to depict the relationship that the subdomains have on each other where bodily integrity can impact safety and vice versus, safety can also impact privacy and privacy can impact both bodily integrity and privacy.

Figure 1: Visual representation of the interrelated nature of women's sanitation-related bodily integrity, safety, and privacy



Bodily integrity linked to safety

For many of the women in the study, something that negatively impacted their overall physical and mental well-being (bodily integrity) was often related to an issue revolving around safety. A majority of the women in the study stated the cleanliness of the facility made them feel unsafe as dirtiness meant diseases were prevalent in their facilities and they were at a high risk of contracting them. A few of the participants mentioned a heightened fear for their safety when pregnant where they would rely on suppressing their need to urinate or defecate so they did not put themselves or their unborn baby at risk by using a dirty facility. Safety also largely impacted bodily integrity at night as many of the women would opt for suppression of urination or defecation until the morning when it was light outside. Many of the women had an increased fear of men, drunkards, and thieves at night and felt that suppressing urination or defecation was safer than putting themselves at risk of danger walking in the dark to their facility. For many of the participants who stated this, suppression of urination or defecation often caused negative physical health impacts such as cramps, stomach pain, or infections.

Safety linked to bodily integrity and privacy

The majority of participants who stated they felt unsafe due to threats such as: physical, sexual and verbal violence along with stray dogs, maggots, darkness and people usually mentioned how an unsafe sanitation experience negatively impacted their overall mental and physical well-being. Women in the cognitive interviews mentioned that they felt an increased risk to their safety at night when most of the women were so concerned that they would opt to use a bucket in their home or would suppress the need to urinate or defecate until the morning. Suppression of urination or defecation at night for safety concerns often led to the women experiencing stomach pains, cramps, or infections. For most of the women, cleanliness of their

facility was a predominant safety concern and one of the most common reasons women would resort to suppression of urine or feces in order to avoid having to use the dirty facility. Suppression in relation to safety concerns of facility cleanliness would also cause many of the women to experience negative health impacts such as: stomach pains, cramping, and infections.

Many of the respondents also shared that lack of privacy exacerbated these safety issues. A majority of the women who felt unsafe in their sanitation facility stated that a lack of proper infrastructure allowed men and boys the ability to peep or spy on them when using the facilities. Women also felt that a lack of working lock and door at their facility decreased their safety and increased their risk of facing physical or sexual violence in their facility. For the women who felt their safety was compromised due to privacy related issues like infrastructure, they would suppress themselves until they felt like they were no longer in danger or that they could safely leave the facility. Women who experienced a lack of safety and privacy in their facilities often experienced negative mental health impacts such as shame, embarrassment, or anxiety.

Privacy linked to safety and bodily integrity

The participants who mentioned concerns for their privacy, also usually mentioned how a lack of privacy impacted their sanitation-related safety. A majority of the women who felt like their privacy and safety could be compromised said that it was due to infrastructural issues such as: gaps in the walls, gaps in the doors, holes in the walls, no door, no lock, a broken lock, large gaps in the ceiling and walls, or the facility being close to a main road or walking path. As above stated in the section on how safety is linked to bodily integrity and privacy, women in the reported that they felt an increased risk for their safety due to a lack of privacy. A lack of a working lock or door and holes in the ceiling and walls were reported as the top reasons women felt a lack of safety and privacy in their preferred facilities. Most of the women who said they

felt a lack of privacy impacted their sanitation experience, also shared that privacy played an important role in making them feel safe against threats of physical and sexual violence.

Some of the women who mentioned issues of privacy in their cognitive interviews also frequently mentioned how a lack of privacy could cause overall negative impacts to their health. Women who felt like their privacy could be compromised at their usual facility often experienced negative mental health impacts such as an increase in anxiety, fear, shame, embarrassment, or uncertainty when using their facility. A few women in the cognitive interviews also mentioned that if they felt like their privacy was compromised while in the facility, they would often resort to suppression of urine or feces and wait until they felt their privacy was less threatened. Compromised privacy also sometimes caused the women to leave the facility and suppress the need to urinate or defecate until they felt like it was safer to return to the facility. When these women felt a threat to their privacy, they would resort to suppression of urination and defecation, which would then cause the women to experience poor health symptoms like stomach pains, cramping, or infections.

Chapter V: Discussion

The aim of this thematic analysis was to explore sanitation-related bodily integrity, safety, and privacy and how they may be related in women's sanitation experiences. Findings from the thematic analysis that was conducted on the cognitive interviews, found that women's sanitation experiences adversely impacted their bodily integrity and safety. Likewise, situations that caused an unsafe sanitation experience, also impacted women's bodily integrity and privacy. In addition, situations that negatively impacted the women's sanitation related privacy would then also negatively impact their bodily integrity and safety. From the women's responses in the cognitive interviews, it was clear that there was an interconnectedness to the subdomains as their responses often times included reference to an issue related to a combination of two or all three the subdomains.

Multiple women in this study stated that they sometimes resort to suppressing themselves and although their reasons varied, the theme of suppression has been noted in other women's sanitation research as well. For this study, women noted that they would suppress themselves due to cleanliness of the facility, not having someone to escort them (especially at night), if they were in public spaces, and if their workload was too heavy. A qualitative study conducted in Odisha, India by Caruso et al. (2017) on women's sanitation experiences found that most of the women in the focus groups felt their sanitary needs disrupted household work and most of the women who felt this way would resort to suppression of urination or defecation in order to have time to complete their workload (Caruso et al. 2017). Likewise, a cross sectional study also in Odisha, India found that women who urinated or defecated at night had an increase in fear due to the darkness and one of the ways women would manage their fears was by suppressing themselves (Caruso et al. 2018). A systematic review and qualitative synthesis completed by Sclar et al.

(2017) found that women will suppress themselves from urination or defecation if they did not have a safe and private sanitation facility (Sclar et al. 2018). It is important to evaluate the findings from this research and past research on what makes women feel unsafe causing them to resort to suppression in order to build and promote safer sanitary environments for women.

In this study, women listed multiple experiences that made them feel unsafe or specific issues that caused them to fear for their safety such as: physical, sexual, and verbal assault, stray dogs, maggots, darkness, or people. In other sanitation research involving women in various countries, these themes were also apparent. For example, a study done by Hartmann et al. (2014) in urban India and another study done by Kulkarni et al. (2017) also in urban India found that women who use open defecation sites fear harassment and will compensate for those fears by withholding food and water and by suppression (Hartmann et al. 2014; Kulkarni et al. 2017). Women reported that they experienced multiple stressors in their sanitation experiences such as: drunk men, peeping or being watched by men, men exposing themselves, both physical and sexual assault, and rape (Sahoo et al. 2015). These finding were similar to the responses gathered from women in the cognitive interviews and further demonstrates how threats to women's sanitation-related safety can also negatively impact their sanitation-related bodily integrity and privacy.

In this research, a common theme that related to an increased fear for individual safety at night has also appeared in other women's sanitation related research in East Africa. In a mixed methods study in Kenya, Winter et al. (2019) found that women noted an increased fear for their safety at night where they also stated that if they went out at night, there was potential for them to be raped (Winter et al. 2019). Many women in this mixed methods study also shared that due to an increased fear for their safety, they would opt to use a bucket in their home at night. This

finding from Winter et al. (2019) was similar to the findings in this study in that many of the women felt an increased fear for their safety at night which led many to resort to using a bucket in their homes or suppression of urination or defecation until morning. Majority of the women also stated that if they went out at night, they were at an increased risk of experiencing non-partner sexual or physical violence which were consistent to the findings from Winter et al. (2019) (Winter et al. 2019).

———In multiple studies, women have mentioned that privacy or lack thereof has played a role in them feeling unsafe, stressed, or insecure. In the Sahoo et al. (2015) study mentioned above, women reported that peeping and flashing by men was more likely to happen to them if there was a lack of privacy during sanitation (Sahoo et al. 2015). In multiple sanitation related studies conducted in India and Kenya, findings showed that women reported that their sanitation facilities and conditions caused stress due to a lack of privacy (Bisung and Elliott 2016; Hirve et al. 2015; Hulland et al. 2015; Khanna and Das 2016; Sahoo et al. 2015). The findings in those five studies in India and Kenya were similar to the findings in this study where women reported feeling stressed and unsafe due to the infrastructural conditions of their facilities. Another study that was conducted by Fisher et al. (2015) in Uganda that utilized surveys to determine what factors influence privacy and safety reported that 46% of women would feel safer if there were locks / stronger security inside sanitation facilities, 47% of women wanted better or stronger walls, and 51% of women wanted better or stronger doors (Fisher, Cavill, and Reed 2017). The findings in the Fisher et al. (2017) study were consistent in the responses gathered from women in this qualitative study on women's sanitation related bodily integrity, safety, and privacy where they felt that if facilities had working locks or doors, and no gaps or holes in the ceilings or

doors, they would feel safer and be less likely to have their privacy compromised (Fisher et al. 2017).

A theme found in this research related to increased sanitation-related fears and safety concerns during pregnancy has also been found in other sanitation research (Caruso et al. 2017). In this research, four women shared that either they themselves or they knew of women in the community who suppressed themselves when pregnant in order to avoid using a dirty facility due to fear of catching a disease. In the qualitative study conducted by Caruso et al. (2017) in Odisha, India, one participant stated that when she was pregnant, she would not utilize the latrine but would open defecate due to her fear of catching a disease that could harm herself and her unborn baby (Caruso et al. 2017). In a study conducted by Padhi et al. (2015) that utilized prospective cohorts, it was found that pregnant women who practiced suppression of urination and defecation, or open defecation had a higher incidence of preterm birth and low birthweight along with infections and stress for the mothers (Padhi et al. 2015).

Strengths and Limitations

Strengths

A strength of the study was the qualitative open-ended nature of the cognitive interviews. By utilizing cognitive interviews for this research on women's sanitation-related bodily integrity, safety, and privacy, women were not confined to a specific response category. The open-ended nature of the cognitive interviews allowed the research team to gain in-depth insights from the women themselves producing richer data than a traditional quantitative survey would have. The study team knew that the events that they were asking about in regards to the women's sanitation experiences might not have occurred in the last 30 days but if it was impactful enough, the women would mention it during the interview.

Limitations

One of the notable limitations of this study is that respondents were directed to answer the questions based on what they had experienced in the last 30 days. Some of the participants shared that they had experienced something that hindered their sanitation experience but not in the last 30 days. Due to the 30 day limit, during analysis it appeared that some of the women may have withheld from sharing their experiences. Most of the participants stated something along the lines of “yes but not in the last 30 days” for multiple statements on the survey tool. Due to the limited scope of the “the last 30 days” this could have led for the research team to miss out on valuable data from the participants.

Chapter VI: Public Health Implications

Bodily integrity, safety, and privacy play impactful roles in women's sanitation experience. Barriers such as sanitation infrastructure, cleanliness, pregnancy, darkness, location, risk of disease and different types of people can create circumstances that have a negative impact on women and their sanitation-related bodily integrity, safety, and privacy. Further research and sanitation programing should take into consideration the immediate needs of women like providing cleaner facilities and facilities with better infrastructure (i.e. working lock and door, and a place for a safety light or torch) while also addressing social-cultural norms, so that sanitary situations that compromise women's bodily integrity, safety, and privacy occur less often.

Developing sanitation facilities with working locks and doors along with lighting and pathways with lighting to and from the sanitation location will ultimately produce a safer sanitation experience for women. Not only will sanitation facilities with locks and doors promote safety, but they will also promote privacy and decrease the instances of women feeling the need to suppress themselves until their safety and privacy is restored. Alongside this, facilities that are developed through CWIS projects need to consider interventions aimed at keeping the facilities clean and updating current facilities with broken or missing infrastructure in order to provide women with cleaner, safer, and more private facilities.

Findings from this qualitative research in Kampala, Uganda, show that the subdomains bodily integrity, safety, and privacy are interconnected as women frequently shared beliefs, thoughts, or concerns about how their sanitation related bodily integrity impacted their safety, how barriers to their sanitation-related safety and privacy impacted their bodily integrity, or how barriers to their sanitation-related privacy impacted their safety and bodily integrity. Most of the

participants responses in the cognitive interviews also encompassed ideals, beliefs, or concerns that related to how gender, cultural norms, and sanitation infrastructure all impact bodily integrity, safety, and privacy in the women's sanitation experience. When comparing the findings in this research to research that had been conducted previously on women's sanitation experiences, it is evident that themes related to the experiences of women in Kampala are not just unique to the women of Kampala, Uganda but women globally are experiencing infringements to their sanitation-related bodily integrity, safety, and privacy. Findings from this research coupled with findings from previous studies can help to inform other research conducted on WASH and women's empowerment, along with providing those working on sanitation programming with information on what still needs to be improved in their implementation of inclusive sanitation.

VII: Tables

Table 1: Demographic information for participants in cognitive interviews (N=16)

	All	
Cognitive Interview Participants	**16**	
Age (mean; range)	34.9	(18-79)
Life Stage		
Unmarried young women	6	37.50%
Married women; 25-40 years old	6	37.50%
Over 40 years old	4	25.00%
Education		
Completed primary or less than primary	5	31.25%
More than completed primary	11	68.75%
Type of Household[1]		
Single family home	4	25.00%
Compound with shared living spaces	7	43.75%
Number of people in household (mean;range)[2]	6	(3-16)
Marital status		
Single/never married	2	12.50%
Married	8	50.00%
Separated / divorced	4	25.00%
Widowed	2	12.50%
Religion		
Christian (Catholic)	3	18.75%
Christian (non-Catholic)	9	56.25%
Muslim	4	25.00%
Ethnic Group		
Acholi	4	25.00%
Baganda	3	18.75%
Bakiga	2	12.50%
Banyankore	2	12.50%
Banyoro	1	6.25%
Basoga	1	6.25%
Other	3	18.75%

1 Missing data from 5 cognitive interview participants.

2 Missing data from 1 cognitive interview participants.

Table 2: Sanitation demographic information for participants in cognitive interviews (N=16)

	All	
Cognitive Interview Participants	**16**	
Where participant goes for urination or defecation during the day		
Flush to piped sewer system	5	31.25%
Flush to septic tank	1	6.25%
Flush to open drain	7	43.75%
Pit latrine with slab	2	12.50%
Other	1	6.25%
Where is participants sanitation facility located		
In own dwelling	2	12.50%
In own yard / plot	8	50.00%
Elsewhere	6	37.50%
Is the participants usual sanitation facility lockable from the inside		
Yes	12	75.00%
No	4	25.00%
Does the participants usual sanitation facility have sufficient lighting		
Yes	14	87.50%
No	2	12.50%
Is there lighting on the path to the participants usual sanitation facility		
Yes	16	100.00%
Is the participants usual sanitation facility functional		
Yes	15	93.75%
No	1	6.25%
Minutes it takes participant to walk to usual sanitation facility (mean; range)	2.37	(1-5)
Is the participants usual sanitation facility shared with others outside of their household[1]		
Yes	12	75.00%
No	2	12.50%
Average number of households utilizing participants shared location (mean, range)[4]	5.42	(2-10)
Is the participants usual sanitation facility used by men and women or women and children		
Men and women	14	87.50%
Women and children only	2	12.50%
Satisfaction with usual sanitation facility		
Not at all satisfied	2	12.50%
Somewhat dissatisfied	5	31.25%
Neither satisfied or dissatisfied	4	25.00%
Somewhat satisfied	4	25.00%

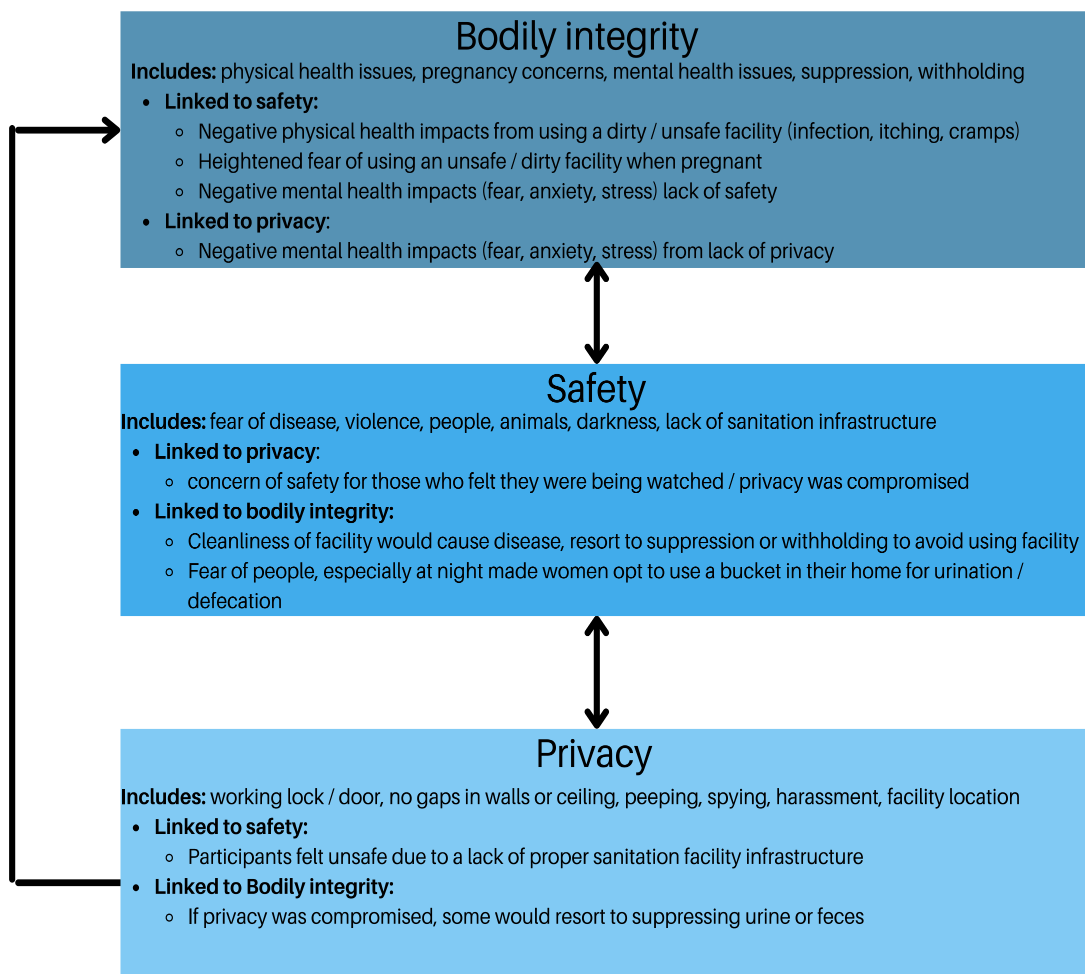
Very Satisfied	1	6.25%
Satisfaction with usual sanitation facility cleanliness		
Not at all satisfied	6	37.25%
Somewhat dissatisfied	1	6.25%
Neither satisfied or dissatisfied	3	18.75%
Somewhat satisfied	3	18.75%
Very Satisfied	3	18.75%
Satisfaction with usual sanitation facility privacy		
Not at all satisfied	2	12.50%
Somewhat dissatisfied	2	12.50%
Somewhat satisfied	5	31.25%
Very Satisfied	7	43.75%
Satisfaction with usual sanitation facility safety		
Not at all satisfied	2	12.50%
Somewhat dissatisfied	1	6.25%
Neither satisfied or dissatisfied	1	6.25%
Somewhat satisfied	9	56.25%
Very Satisfied	2	12.50%

1 Missing data from 2 cognitive interview participants.

2 Missing data from 1 cognitive interview participants.

VIII: Figures

Figure 1: Visual representation of the interdependent nature of women's sanitation related bodily integrity, safety, and privacy



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