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Rinchen Doma

# An Exploration of Women's Sanitation-related Decision-making, Leadership, Collective Action, and Freedom of Movement in Urban Tiruchirappalli, India

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# An Exploration of Women's Sanitation-related Decision-making, Leadership, Collective Action, and Freedom of Movement Experiences in Urban Tiruchirappalli, India

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2020

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An abstract of
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## Abstract

An Exploration of Women's Sanitation-related Decision-making, Leadership, Collective Action, and Freedom of Movement in Urban Tiruchirappalli, India

By Rinchen Doma

**Introduction:** Sanitation research in rural and urban India has emphasized the disproportionate burden that unsafe and inadequate WASH can have on women and girls. However, there is a gap in research exploring women's agency in relation to their sanitation experiences, and agency is an integral domain of their empowerment.
**Aim:** To explore sanitation-related agency, specifically the sub-domains of decision-making, leadership, collective action, and freedom of movement among women in urban Tiruchirappalli, India.
**Methods:** This is a secondary analysis of data generated from cognitive interviews conducted by Emory University that aimed to validate survey tools to measure women's empowerment in urban sanitation across countries in South Asia and Sub-Saharan Africa. Eleven interviews were carried out to explore the sub-domains of agency related to sanitation and were qualitatively analyzed to explore key themes and patterns emerging about women's decision-making, leadership, collective action, and freedom of movement. The participants were purposively sampled across two neighborhoods based on their age and life stage.
**Results:** Women reported strong support for women's sanitation-related leadership and decision-making abilities, sharing personal anecdotes of sanitation initiatives organized collectively by women in the community. While women were regularly considered experts on sanitation-related issues due to their role as primary caretakers in the household, several limitations prevented complete freedom to participate in sanitation-related initiatives. These limitations spanned all levels, including societal norms that constrained women's involvement, local authorities' lack of response to women's initiatives, and women's lack of self-confidence in leadership roles.
**Conclusion:** This qualitative analysis highlights the value of strong trust among women and confidence in their ability to make important sanitation-related decisions at all levels of society. Interventions must recognize their expertise in large or small sanitation-related issues and highlight successful women-led sanitation initiatives to further enable women to participate. Communities should have spaces where women's sanitation-related opinions can be comfortably shared and practice governance that respects and encourages women's engagement in addressing sanitation issues. WASH programming must engage with authority figures, leaders, and officials when seeking to increase women's agency and involvement with sanitation-related issues. Outreach programs where sanitation leaders and authority figures interact with the general community and especially encourage local women's participation in sanitation initiatives can help address the exclusivity within sanitation leadership.

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# INTRODUCTION

While the UN General Assembly has recognized access to safe and clean drinking water and sanitation as a human right, and approximately 829,000 people die each year due to diarrhea because of unsafe drinking water, sanitation, and hygiene (WHO, 2022), WASH access for all remains a critical challenge. Globally, 2 billion people still lack access to safely managed drinking water services (UNICEF & WHO, 2021). 46% of the world's population do not have access to safely managed sanitation services and 670 million people lack access to any hand-washing facilities (UNICEF & WHO, 2021). Goal 6 of the Sustainable Development Goals seeks to ensure the availability and sustainable management of water and sanitation for all. According to a report by the WHO and UNICEF in 2021, the proportion of people using safely managed sanitation services has increased from 47% in 2015 to 54% in 2019 (UNICEF & WHO, 2021). The utilization of safely managed drinking water services has also seen improvement. However, there remains extensive progress to be made in this field.

With increased population growth, climate change, and prevailing inequities, WASH challenges can exacerbate poor health outcomes, obstacles with WASH, and limit the self-determination of vulnerable populations. Research by Muller indicates that population growth has burdened water delivery systems and sanitation facilities in urban regions (Muller, 2016). The benefit of achieving SDG 6 extends beyond health and access to WASH and tremendously contributes to improving livelihoods and socio-economic outcomes - especially for women and girls (UN, 2021). Few studies based in low-middle income countries have found that women utilize water more than men due to the increased household and childcare responsibilities; they are also known to bear the primary responsibility of collecting, carrying, and providing water for the

household (Sorenson et al., 2011; Graham et al., 2016; Fisher et al.,2017; Mekonnen & Hoekstra, 2016; Stevenson et al., 2016). This means that decreasing quality of and access to WASH facilities/resources disproportionately affects women in varying aspects of their lives.

In India, there has been rapid progress in improving access to WASH. From 2015 to 2020, the country's population using safely managed sanitation facilities increased from 36% to 46% (UNICEF & WHO, 2021). The nationwide campaign - Swacch Bharat Mission (SBM) or the Clean India Campaign – has contributed to this achievement for WASH in their country. The program's ultimate goal was to stop open defecation by promoting better hygiene practices and the construction of toilets. However, despite the recorded decrease in prevalence, open defecation remains a critical issue (Caruso et al., 2022). According to the Joint Monitoring Programme (JMP), 15% of India's population still practices open defecation daily (UNICEF & WHO, 2021). While this shows drastic improvement from 2015, when 29% of the population was reported practicing open defecation, it still means that approximately 209 million people in the country practice open defecation today. Additionally, unsafe disposal of child feces is also persistent, increasing the chances of fecal contamination and exposure to diseases such as diarrhea and soil-transmitted health infections (Majorin et al.,2019; Caruso et al., 2022). 229 million people in the country continue to lack access to improved sanitation facilities, defined as facilities "designed to hygienically separate excreta from human contact". (UNICEF & WHO, 2021).

Reflecting the global landscape, the cost of unsafe sanitation in India is heavily incurred by women compared to their counterparts. Research by Khanna and Das (2015) has highlighted how

existing social norms such as restrictions on where and when to go out for defecation or how a lack of accessible and safe toilet facilities in urban slums or resettlement areas influence sanitation issues for women and girls in rural India and place them at increased risk of gender-based violence and dangerous health outcomes (Khanna & Das, 2015). Studies based in Odisha, India have also indicated how women's sanitation and hygiene-related concerns were attributed to physical stressors (such as lack of privacy, cleanliness, and adequate infrastructure at sanitation facilities), social stressors (such as lack of freedom of movement, conflicts over sanitation, lack of household support, and sanitation-related shame), and sexual violence stressors (such as gender-based violence, peeping by men at sanitation facilities, and teasing on route to or from sanitation locations) (Sahoo et al., 2015; Hulland et al.,2015; Caruso et al., 2017). Furthermore, studies in Pune and rural Odisha have also provided evidence to suggest that women experienced psychosocial impact and high symptoms of anxiety, depression, and distress related to sanitation behaviors even if they had access to a facility (Hirve et al., 2015; Sahoo et al., 2015; Caruso et al., 2018).

Sanitation research has begun to explore the importance of developing a gender-sensitive lens in WASH program implementation. SDG 6 has emphasized the need to pay particular attention to the WASH needs of women, girls, and vulnerable populations if the target is to 'achieve access to adequate and equitable sanitation and hygiene for all and end open defecation (UN, 2021). At present, most evidence is primarily centered around overall *access* to WASH facilities; interventions follow a similar course with emphasis on technological or infrastructure-related aspects of sanitation improvement (World Bank, 2002; O'Reilly, 2010). Measuring access solely ignores how women's agency, or a lack thereof, is intrinsically tied to sanitation services and

their utilization. Social inequities gendered socio-cultural norms, and power relations all factor into women feeling agency is restricted or challenged when needing to access sanitation facilities that already exist (O'Reilly, 2010; Eaton et al., 2021). A systematic review found that the agency domain of women's empowerment, in relation to their water and sanitation experiences, was the least researched compared to the resources and institutional structures domains (Caruso et al., 2021). There lies an apparent gap in the literature surrounding agency with women's sanitation experiences. WASH organizations can utilize such evidence to inform programs that directly and indirectly empower women and girls through quality WASH.

This thesis builds on qualitative data collected in Tiruchirappalli, India through the MUSE project which aims "to develop and validate quantitative survey instruments to measure women's empowerment in relation to sanitation in urban areas of low-income and middle-income countries" (Sinharoy et al., 2022). Cognitive interviews were carried out to assess the face validity and content validity of the scales for each of the three domains to ensure items were adequately measured (Sinharoy et al., 2022). This thesis focuses on the Agency domain, which lies at the heart of the empowerment processes. Literature on empowerment often refers to the notion of agency and defines it as the ability of women and girls to act upon their goals, influence and make decisions, and express their opinions without the fear of negative repercussions (Kabeer, 2005). The MUSE project is informed by a conceptual model and definitions of empowerment by Van Eerdewijk et al. (2017) who, inspired by Kabeer and others, define agency as "the ability to pursue goals, express voice, and influence and make decisions free from violence and retribution" which is further broken down into four subdomains of Leadership, Collective Action, Decision-making, and Freedom of Movement (van Eerdewijk et

al., 2017). Exploring WASH-related agency through its sub-domains allows the gender and WASH discourse to move beyond *access*. Existing literature has demonstrated the integral role women and girls play in the household to provide water and care for the family members' health and well-being. This calls for a need to discuss agency at the individual level, with freedom of movement to and from sanitation facilities, and at the household and community level, with the ability to make decisions and collectively work alongside other women to lead sanitation-related change.

This study aims to explore women's agency, specifically the sub-domains of decision-making, leadership, collective action, and freedom of movement, in relation to their sanitation-related experiences in urban Tiruchirappalli, India.

# LITERATURE REVIEW

## Why is WASH important?

The COVID-19 pandemic has spotlighted the importance of handwashing, sanitation, water, and hygiene practices on a global scale. These fundamental practices are now re-emphasized to prevent disease and illness, with the benefits observed in reducing the spread of COVID-19 and other transmissible illnesses like the flu (UNICEF, 2021). The pandemic also reemphasized the large disparities that exist among people who have access or the agency to practice successful and informed WASH behaviors – an estimated three billion people still do not have access to handwashing facilities with soap (Caruso & Freeman, 2020; Freeman & Caruso, 2020; Stoler et al., 2021; UNICEF, 2021). The world observed stark inequities in accessibility and utilization of safe and adequate sanitation facilities across communities. Women and children in rural areas, urban slums, and underserved communities were disproportionately affected by the impacts of COVID-19 on sanitation practices (UN, 2020; World Bank, 2020); an accurate reflection of the inequities and discrimination that have continued to exist within the larger sphere of WASH.

Safely managed and adequate drinking water, sanitation, and hygiene (WASH) are integral for human well-being. All three components are highly interdependent, with the absence of one affecting the presence of the other two. Availability of readily accessible WASH facilities and services prevents the spread of disease and possible infection and is also essential for upholding the dignity and self-worth of vulnerable populations. According to the Joint Monitoring Program, 2 billion still lack access to safely managed drinking water, and more than half of the global population does not have access to safe sanitation (UNICEF & WHO, 2021). Inadequate WASH facilities and access have led to 829,000 diarrheal deaths each year, specifically with poor

sanitation as the leading cause of 432,000 of these deaths. Further, more than 700 children under five die every day from diarrheal diseases (UNICEF & WHO, 2020). The level of access to safe and adequate WASH differs between rural and urban communities and across socioeconomic status; the majority of the affected populations reside in low- and middle-income countries where sanitation infrastructure, existing norms, and inequities can act as barriers to achieving safe sanitation. This is not to say that high-income countries do not have any WASH problems or challenges. Despite having "developed" sanitation infrastructure and policies, there are evident disparities in access and quality of services that remain rooted in racism, injustice, and discrimination (Mattos et al., 2021). Thereby, we observe that globally, the marginalized and minority communities face the brunt of sanitation-related injustices.

Existing evidence, such as the systematic review by Sclar et al., demonstrates that accessing safe water and sanitation facilities has numerous social, physical, and health impacts on individuals and their households (Grebmer et al., 2015). Poor sanitation is linked to several diseases such as typhoid, diarrhea, cholera, dysentery, polio, and exacerbating stunting (WHO, 2019). A study in 2016 estimated that 1.6 million deaths and 105 million Disability-adjusted Life Years (DALYs) were attributed to inadequate WASH; these statistics also only included diseases that could be quantified which indicates an even more considerable WASH-attributable disease burden (Pruss-Ustun, 2019). UNICEF's 16-nation study showed that children under five are also 20 times more likely to die from diseases related to unsafe water and sanitation rather than conflict in emergencies (UNICEF, 2019). Recent research has also highlighted that sanitation is fundamentally essential in addressing malnutrition. When children constantly fight off the

bacteria and germs introduced by poor sanitation conditions and practices, energy and nutrients integral for growth are diverted (Warshaw, 2014).

Furthermore, lack of adequate sanitation facilitates the transmission of soil-transmitted helminths eggs, passed in the feces of infected people. Improving sanitation conditions can help break this cycle and prevent STH infections (Strunz et al., 2014). For example, a 2014 systematic review and meta-analysis found that WASH interventions that included access to sanitation facilities and handwashing with soap were associated with 33-70% lower odds of STH infections (Strunz et al., 2014). Another systematic review in 2017 indicated that sanitation was associated with 35% lower odds of hookworm infection, 27% lower odds of A. lumbricoides infection, and 20% lower odds of T. trichiura (Freeman et al., 2017). A study based in India found that open defecation is associated with an elevated risk of adverse birth outcomes. Pregnant women are also more susceptible to diseases such as cholera, diarrhea, STHs, and typhoid caused by contaminants resulting from inadequate WASH facilities and services (Patel et al.,2019). In 2019, Patel concluded that women with no access to the toilet have a higher chance of adverse pregnancy outcomes than those who have access to toilets (Patel et al., 2019). No access to toilets also exacerbates people practicing open defecation. Without access to improved sanitation and facilities that reflect the needs of a vulnerable population, the global progress being made towards reducing maternal mortality can only go so far.

To reiterate, the benefit of improving sanitation goes beyond the physical and biological impacts mentioned above and, among others, elevates dignity, self-determination, safety, and overall well-being, especially true for women and children (Sclar et al., 2018; WHO, 2022). Regarding

sanitation, some stressors can be attributed to an individual's expected roles, reported financial stressors with building or accessing a toilet (Sahoo et al., 2015), restrictions on where or when an individual can urinate or defecate, discomfort with accessible sanitation or the fear of using unsafe or unclean latrines (Hulland et al., 2015; Nallari, 2015; Sahoo et al., 2015; Bisung & Elliot, 2017; Sclar et al., 2018). A study based in rural Odisha, India by Caruso et al. emphasized that despite having an accessible sanitation facility, women and girls still faced high distress, anxiety and depression, and negative mental health outcomes while urinating or defecating (Caruso et al., 2018). Sclar et al. published the first systematic review that explored how sanitation influences mental and social well-being; factors such as locations of sanitation facilities and the individual's gender identity impacted the way populations perceived their privacy and safety (Sclar et al.,2018). Understanding the root of these psychosocial outcomes and stressors remains integral to implementing successful interventions and policies.

Sustainable Development Goal 6 reads, "Ensure availability and sustainable management of water and sanitation for all" with "paying special attention to the needs of women and girls and those in vulnerable situations"; SDG 6.2 specifically aims for safely managed sanitation services by 2030. This expands upon the previous Millennium Development Goal 7c, which aimed to halve the global population without sustainable access to clean and safe water sanitation facilities by 2015. The latter target was reached in 2010, 5 years before the deadline, with 2.6 billion people gaining access to 'improved' drinking water sources, and 2.1 billion people gaining access to 'improved' sanitation (United Nations MDG Monitor, 2017). Improved sanitation is achieved "when sanitation facilities are adequately and hygienically designed to separate excreta and human contact" (UNICEF & WHO, 2021). Despite the increase in global WASH access,

countries in Sub Saharan Africa and South Asia still face major challenges; with the rapid growth of urban populations in these regions, there is an increased proportion of people in the urban areas who are living without access to improved sanitation or face inadequate sanitation experiences. According to Moe and Rheingans (2005), reasons such as political instability, lack of prioritization of adequate infrastructure, implementation of culturally inappropriate interventions, comfort with antiquated approaches, or lack of local involvement can contribute to a country's declining sanitation conditions (Moe & Rheingans, 2006). There is a limit to how much existing sanitation infrastructure can successfully bear when it doesn't simultaneously develop with the growing population density. Furthermore, many communities lack appropriate monitoring and evaluation of existing interventions that help guide on improving or challenging them (Moe & Rheingans, 2006).

## Women and WASH

During the 1977 United Nations Water Conference, leading WASH experts and organizations explicitly recognized the central role of women in the management and provision of water and sanitation. In Sub-Saharan Africa and Central and South Asia the responsibility for WASH-related activities, especially for water collection, is primarily considered the women and girls' role in their household (UNICEF & WHO, 2021). Simultaneously, the burden of adverse outcomes attributable to inadequate WASH coupled with social norms that justify gender-based disproportionately impact women and their wellbeing. UNICEF estimated that globally women and girls spend 200 million total hours a day collecting water (UNICEF, 2016). In countries where the primary responsibility of collecting water falls on women and girls, time that could be spent on education, economic opportunities, and leisure is lost (Sorenson et al., 2011; Graham et

al., 2016). The use of common sanitation facilities, practicing open defecation, and walking long distances to secure water also place women and girls at increased risk of gender-based violence and a multitude of safety and privacy concerns (UNICEF, 2018). Furthermore, when family members fall ill due to a lack of safe drinking water or environmental hazards from poor sanitation, the responsibility of caring for them usually falls on the women as well (UNWATER, (n.d)).

The mounting evidence of the disproportionate impact of inadequate WASH and related practices has led to the use of a gender-sensitive lens in the WASH sector. Fisher et al.'s assessment of sector-specific WASH interventions concluded that the WASH sector has uniquely distilled, not diluted, gender issues through recognizing the importance of equitable sanitation infrastructure for empowerment (Fisher et al., 2017). Studies have also highlighted that water and sanitation programs are more sustainable and effective when women are fully involved; interventions are now aimed at empowering women by increasing equitable access to WASH infrastructure and centering the needs and experiences of women and girls (Leahy et al., 2017; World Bank, 2022). In 2012, a study in Vietnam by Halcrow et al. showed that WASH interventions that trained women with technical skills led to economic empowerment in addition to confidence and increased decision-making (Halcrow et al., 2012; Dery et al., 2019). Women's WASH-related programming is also shifting its focus on reaching women and girls marginalized by other aspects of society, such as race, class, caste, and disabilities, and challenges the unequal power relations (Carrard et al., 2013 & UNICEF, 2020). Caste has created barriers to sanitation interventions and exacerbated disparities due to purity issues, stigma related to cleaning, access to facilities, and latrine design (O'Reilly et al.,2017). Regarding disability, many services and

environments still do not meet the needs for privacy, physical accessibility, and hygiene for safe and adequate sanitation and hygiene practices (Scherer et al., 2021). Gender does not exist in a vacuum and intersects with systems to oppress, disempower, and allow privileges (Yuval-Davis, 2006; Dery et al., 2019).

## Sanitation in India

India has made remarkable progress towards SDG 6 across the country. In October 2019, the government of India declared that the country had become open-defecation-free and the Joint Monitoring Programme (JMP) reported that India had had the biggest drop in open defecation since 2015 (UNICEF & WHO,2021). The Swachh Bharat Abhiyan (Clean India Mission) has contributed to these improvements in WASH facilities in the country. UNICEF has also been working with the Ministry of Jal Shakti on an initiative named *Swajal* to enable rural communities to manage and access safe water sources. Through technical assistance with water safety planning, behavior change, and community participation (with an emphasis on women's participation), Swajal has contributed to approximately 18.6 million people gaining access to a safe and reliable drinking water source (UNICEF, 2021).

However, the claim that India is 100% open-defecation free may not be valid as JMP indicated that at least 15% of the total population still practices open defecation (UNICEF & WHO,2021). Regarding sanitation, access to sanitation facilities in India has improved in the past five years (NFSH-5, 2019-2020). Nationally, 45.9% of the population have access to safely managed sanitation services, 25.4% use basic sanitation services, 12.1% have access to limited sanitation services and 1.7% use unimproved sanitation services. Additionally, 67.6% of the population

have basic hygiene services, 29.5% have limited hygiene services and 2.75 have no handwashing facilities (UNICEF & WHO,2021). While the data from JMP and NFHS-5 demonstrates substantial progress in access to clean water, sanitation, and hygiene services, there is still a crucial need for increased improvement in sanitation services and related behavior in the country. Caruso et al.'s study in rural Odisha highlighted high levels of unsafe child feces disposal in their study locations. It urged WASH approaches to work toward reducing fecal contamination in the household environment (Caruso et al., 2022).

Additionally, they also highlighted the need for the Government of India to ensure child feces disposal is included when determining regions of the country as open-defecation-free (Caruso et al., 2022). In the state of Bihar, 99% population now has access to improved drinking water sources which stands the highest in the country (NFHS-5, 2019-2020). 17 states and UTs have recorded above 90% of the population having access to improved sources of drinking water (NFHS-5, 2019-2020). Urban residents have indicated better access to these sources across all 22 states, with an increased disparity observed in Manipur, Meghalaya, Tripura, and Maharashtra. While Bihar has shown incredible progress in access to drinking water, it ranks the second-lowest state in access to improved sanitation facilities, with Ladakh having the lowest access. Every second person in Bihar has no access to unshared and improved sanitation facilities (NFHS-5, 2019-2020). There still exists an inequity in the utilization of and access to adequate sanitation environments.

Despite the overall progress observed with WASH in urban India, these inequities are extremely pronounced in urban slums where high population densities have burdened the existing systems;

poverty and social determinants explain the high levels of inadequate WASH practices or access in these communities. SBM has committed to improving sanitation coverage through infrastructure development, user incentives, and community mobilization. However, a study by Hulland et al. in 2015 emphasized the importance of water access for the ideal shift in sanitation behaviors (Hulland et al., 2015). Therefore, this calls for coordination and collaboration at all levels of government divisions and the public/private sectors to ensure that the social and physical barriers are adequately addressed.

## Impact of Sanitation on Women and Girls in India

### Open defecation

The gender-related disparities and inequities prevalent across communities in India are reflected in women's and girls' sanitation experiences. The absence of sanitation facilities has posed increased risks and challenges that men hardly experience. In urban and rural Odisha, 63% of respondents of Hulland et al.'s study did not have access to sanitation facilities and were forced to practice open defecation, with a higher prevalence in the rural populations (Hulland et al., 2015). Sahoo et al. found that open defecation by women in Odisha was common in all their study sites, even among those with access to sanitation facilities such as latrines or toilets (Sahoo et al., 2015). Women practice open defecation and usually go during dawn or dusk for privacy to avoid interference with their household/work responsibilities. Not only does open defecation cause health problems such as chronic constipation, urinary tract infections, or stomach problems, it poses a lot of safety-related issues as well (Sahoo et al., 2015). 1 in 3 women reduces their consumption of food to minimize toilet use, whereas up to 1 in 4 reduce their water

intake to minimize toilet use (Water for Women, 2020). Women are then at increased risk of being attacked by snakes or other wild animals, harmed by vehicles passing by, or compromised safety and privacy (Koppikar, 2017). Men are less likely to face these risks because cultural norms make it acceptable for men to be seen urinating or defecating in the open. However, it is important to note that some women may prefer to openly defecate when secluded spaces are readily available. Women have expressed feeling united or enjoying socializing while going to these locations with their friends (Singh, 2013, p. 954; Caruso et al., 2017). Elderly or pregnant women have also voiced challenges with fetching water for defecation when using toilets and so would instead prefer defecating outside near a water source (Caruso et al., 2017).

**Long Distances**

Covering long distances to collect water or access sanitation facilities takes up valuable time and places women at increased risk of harm. According to Water for Women, 76% of women travel long distances to use a sanitation facility due to a lack of local services or facilities (Water for Women, 2020). In rural communities and urban slums in India, women are often regarded as the primary water purveyors for the household (Varua et al., 2017; Pouramin et al., 2020); this responsibility is entrenched in society as the duty of an 'ideal' woman or housewife. Time spent collecting water or traveling long distances to use sanitation facilities has contributed to neglected education, lost opportunities, and health impacts on not only the woman herself but also her family (Basu et al., 2015; Kher et al., 2015). Traveling to distant water sources, shared toilets with poor lighting, and open defecation also increases the safety risks for women. Women in urban and peri-urban areas have shared experiences of gender-based violence that are linked to toilet insecurity at home or close to them (Lennon. 2011; Khanna & Das, 2015; O'Reilly, 2016).

However, even when sanitation facilities were available, women in rural Orissa still faced sanitation insecurity and expressed mental health challenges with high levels of stress, anxiety, and depression when urinating, defecating, or managing menstruation (Caruso et al., 2018). 'Invisible' barriers such as social norms and gender roles in relation to women's agency, household roles, feelings of security, and external pressure are evident in their sanitation experiences and behaviors (Caruso et al., 2017).

**Toilet Design and Management**

The lack of inclusion of women's needs and experiences when designing and building toilets has also contributed to hesitancy to use such facilities or caused negative sanitation experiences. In the slum areas of Mumbai and Pune, women expressed uneasiness with using community toilets that had men and women's toilet stalls facing each other or had street-facing stall entrances (Burra et al., 2003, Dasra, 2012). Public toilets in Delhi were poorly maintained and had inadequate MHM provisions which posed privacy-related issues and hygiene concerns (Larrousse, 2006). Given the lack of private washing services or limited space, women in urban areas of Delhi opt for using disposable menstrual products rather than reusable cloth products to prevent uncomfortable situations. Despite almost 100% rural sanitation coverage and a rise in the construction of private toilets for households, more progress is still to be made. Women in cities in Ahmedabad and Delhi have stated the need for more hygienic public toilets for women as the number of functioning toilets for men outnumbers those for women. According to a study by Praja Foundation in Mumbai, the number of toilets for men was one-third of the toilets for women with 10,778 toilets for men as opposed to only 3,903 for women (Praja Foundation, 2017). Action Aid also conducted a survey in Delhi where 66% of women stated not having flushing facilities, 52% didn't have handwashing facilities, and 61% lacked any soap (Action

Aid, 2016). Women also tended to avoid the public and shared washrooms due to unhygienic conditions caused by a lack of maintenance and management (Habibullah, 2021). This can disproportionately affect pregnant women and women with UTIs who need to use sanitation facilities regularly, or otherwise cause health impacts on women who find themselves restricted from urinating (Hartmann et al., 2015). A study based in rural Odisha highlighted how women's non-involvement in sanitation-related decision-making could be related to their low socio-economic status and lack of influence on household financial decisions (Routray et al., 2017). Routray et al. also revealed how NGOs constructing household latrines sought the opinions and approval of the male head rather than female family members, even if they are elder members such as the mother-in-law or grandmother (Routray et al., 2017). The lack of accommodations for women's sanitation needs reflects society's bias against women's presence in public spaces or the workplace and can be traced back to the belief that women belong at home.

**Life Stages**

Sanitation-related stressors and experiences have varied across life stages that are attributed to their expected role, sanitation needs, and additional gendered social norms. Studies in rural Odisha by Hulland et al. and Caruso et al. found a variation in sanitation concerns and experiences across life stages (Hulland et al., 2015; Caruso et al., 2017). Newly married and unmarried women expressed more concerns about potential health risks or lack of privacy and resources for menstruation, urination, and sanitation-related activities than women married for more than three years or women older than 47 years of age. Unmarried women also discussed feeling worried about leaving behind socializing during open defecation if they were to get married (Caruso et al., 2017). Hulland et al. emphasized how the sources of sanitation-related

stress and the degree to which it impacted women varied based on their life stage (Hulland et al., 2015). For example, while defecation was ranked as the highest stress for adolescents, menstruation and carrying water were indicated as the highest stress for newly married and pregnant women (Hulland et al., 2015). According to Sahoo et al., social regulations and norms highly tie into women's agency and freedom of movement when it comes to sanitation (Sahoo et al., 2015). Younger girls and adolescents had more freedom and support with an increased familiarity with the community they live in and having family accompaniment during challenging times. However, they face challenges managing menstruation as certain communities separate girls during menstruation due to hygiene concerns or 'impurity' or available facilities lack adequate privacy or resources such as dustbins/water supply (Sahoo et al., 2015). When an adolescent transitions into the newly married period, she reportedly faces more social restrictions. Newly married women face new restrictions about when and where they can defecate and the people they can move around with. This is exacerbated by having to relocate to her in-law's home which can bring challenges of an unfamiliar environment. Again, pregnant women face similar challenges with added restrictions placed by society to protect their children (Sahoo et al., 2015).

The existing literature surrounding women's sanitation experiences in India presents the need for sanitation interventions to move beyond access to facilities and address sanitation-related environmental, social, and sexual stressors. Policies and programs that aim to increase empowerment may be able to improve women's feelings of safety, confidence, and agency with sanitation.

## Empowerment: Agency

This thesis explores women's agency in relation to sanitation experiences in urban Trichy, India. For this research, the concept of empowerment is based on the empowerment model developed by van Eerdewijk et al. in partnership with the Bill & Melinda Gates Foundation. 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. It is both a process and an outcome" (van Eerdewijk et al., 2017). In this definition, choice refers to "the ability of women and girls to make and influence choices that affect their lives and future" whereas voice concerns "the capacity of women and girls to speak up and be healthy, and to shape and share in discussions and decisions – in public and private domains – that affect their lives and future" (van Eerdewijk et al., 2017). Finally, power is referred to as the "force in their lives" which "seeks to challenge and transform the contrasting to women and girls' control over themselves" (van Eerdewijk et al., 2017). As seen with the disproportionate impact of inadequate sanitation conditions on women and girls, existing sanitation systems, structures, policies, and norms contribute to the disempowerment of women with unequal distribution of resources, lack of agency, and compromised safety. Empowerment in sanitation seeks to challenge and change; it tackles the walls and limitations created by disempowerment and addresses the systematic and social restraints that negatively impact women's sanitation experiences and behaviors.

Van Eerdewijk et al. explores empowerment through three domains: agency, resources, and institutional structures. Agency is defined as "the ability to pursue goals, express voice, and influence and make decisions free from violence and retribution" (van Eerdewijk et al., 2017). van Eerdewijk et al. break Agency down into three sub-domains: decision making, leadership,

collective action, and freedom of movement. Sinharoy et al. have added 'freedom of movement' as a fourth sub-domain to cover aspects of sanitation-related Agency that were not explored by the other sub-domains (Sinharoy et al., 2022). Resources are defined as "the tangible and intangible capital and sources of power that women and girls have, own or use, individually or collectively, in the exercise of agency" (van Eerdewijk et al., 2017) and are followed by the sub-domains: bodily integrity, health, safety & security, health, privacy, critical consciousness, knowledge & skills, financial/productive assets, social capital, and time. Finally, Institutional Structures is defined as "the social arrangements of formal and informal rules and practices that enable and constrain the agency of women and girls and govern the distribution of resources". It is further explored through the three sub-domains of formal laws and policies, norms, and relations.

Women's agency is rooted at the heart of empowerment. According to Dickin et al., an individual is empowered to use sanitation with dignity, security, and confidence when WASH-related agency and opportunity can interact (Dickin et al.,2021). With a focus on agency, this thesis will be drawing on sanitation-specific definitions developed by Sinharoy et al. for all four agency sub-domains. These definitions will inform understanding of women's agency while specifically analyzing sanitation-related data and are especially relevant as they were originally adapted from Van Eerdewijk et al.'s conceptual model of empowerment. Sinharoy et al. define decision-making as "women influence and make decisions about sanitation inside and outside the house" (Sinharoy et al., 2022). Leadership as when "women assume leadership positions, effectively participate, and support women's leadership in informal and formal sanitation initiatives and organizations" (Sinharoy et al., 2022). When women have freedom of movement, they "have the autonomy to move freely to access sanitation facilities, collect water for

sanitation-related needs, and/or attend forums on sanitation issues, women have freedom of movement despite sanitation circumstances" (Sinharoy et al., 2022). Finally, collective action is achieved when "women gain solidarity and take action collectively on sanitation-related issues" (Sinharoy et al., 2022).

# MANUSCRIPT

## Contribution of the student

Before joining Emory University's MUSE research team, the team and their site partners had already completed Phase 1 cognitive interview data collection in 2019. I grew familiar with the research topics through supporting study activities and, after discussion with my thesis advisor, was especially interested in the agency-specific cognitive interview data. I received access to the 11 agency-specific translated cognitive interviews and was directed to other essential literature and documents such as interview debriefing notes and study-site context write-ups. With guidance from my thesis advisor, I developed my research question that explored the sub-domains of agency in relation to women's sanitation experiences. I wrote the methodology section referencing the MUSE study protocol and completed the literature review section. I reviewed the transcripts several times and developed a codebook, which included inductive and deductive codes. My thesis advisor reviewed the codebook for feedback and recommendations. I used the finalized codebook to code the transcripts in MAXQDA, analyzed for key themes and patterns, and organized my findings in the results section. I further analyzed the results from my qualitative analysis across existing relevant literature and developed my discussions and public health implications sections.

## ABSTRACT

**Introduction:** Sanitation research in rural and urban India has emphasized the disproportionate burden that unsafe and inadequate WASH can have on women and girls. However, there is a gap in research exploring women's agency in relation to their sanitation experiences, and agency is an integral domain of their empowerment.

**Aim:** To explore sanitation-related agency, specifically the sub-domains of decision-making, leadership, collective action, and freedom of movement among women in urban Tiruchirappalli, India.

**Methods:** This is a secondary analysis of data generated from cognitive interviews conducted by Emory University that aimed to validate survey tools to measure women's empowerment in urban sanitation across countries in South Asia and Sub-Saharan Africa. Eleven interviews were carried out to explore the sub-domains of agency related to sanitation and were qualitatively analyzed to explore key themes and patterns emerging about women's decision-making, leadership, collective action, and freedom of movement. The participants were purposively sampled across two neighborhoods based on their age and life stage.

**Results:** Women reported strong support for women's sanitation-related leadership and decision-making abilities, sharing personal anecdotes of sanitation initiatives organized collectively by women in the community. While women were regularly considered experts on sanitation-related issues due to their role as primary caretakers in the household, several limitations prevented complete freedom to participate in sanitation-related initiatives. These limitations spanned all levels, including societal norms that constrained women's involvement, local authorities' lack of response to women's initiatives, and women's lack of self-confidence in taking on leadership roles.

**Conclusion:** This qualitative analysis highlights the value of strong trust among women and confidence in their ability to make important sanitation-related decisions at all levels of society. Interventions must recognize their expertise in large or small sanitation-related issues and highlight successful women-led sanitation initiatives to enable women further to participate. Communities should have spaces where women's sanitation-related opinions can be comfortably shared and should practice governance that respects and encourages women's engagement in addressing sanitation issues. WASH programming must engage with authority figures, leaders, and officials when seeking to increase women's agency and involvement with sanitation-related issues. Outreach programs where sanitation leaders and authority figures interact with the general community and especially encourage local women's involvement in sanitation initiatives can help address the exclusivity within sanitation leadership.

## INTRODUCTION

Access to safe sanitation and clean drinking water is integral for human health and well-being (WHO, 2021). An estimated 3.6 billion people lack access to safely managed sanitation services, including 494 million practicing open defecation, one in four people lack safely managed drinking water services, and 2.3 billion people lack basic handwashing facilities with soap and water at home (UNICEF & WHO, 2021). In 2015, the United Nations General Assembly recognized the integral need to prioritize global Water, Sanitation and Hygiene (WASH) services and set Sustainable Development Goal 6 to 'ensure availability and sustainable management of water and sanitation for all' by 2030. Furthermore, this goal was underscored by the need to pay attention to the WASH needs of women, girls, and vulnerable populations (UN, 2018). Studies have highlighted how the division of water or sanitation-related tasks or the challenges in accessing safely managed sanitation facilities disproportionately impact women (Sorenson et al., 2011; Graham et al., 2016; Fisher et al.,2017; Dery et al., 2019). Existing social norms, power hierarchies, and inadequate WASH infrastructure are mirrored in prevalent inequities in access to WASH services.

Despite drastic progress made in improving access to WASH in India, 229 million people continue to lack access to improved sanitation facilities (UNICEF & WHO, 2021). Additionally, unsafe disposal of child feces is still prevalent, and 15% of the country's population continues to practice open defecation (UNICEF & WHO, 2021; Caruso et al., 2022). Sanitation research in rural and urban India has emphasized the disproportionate burden that unsafe and inadequate WASH services have on women and girls (Hirve et al., 2015; Sahoo et al., 2015; Hulland et al.,2015; Caruso et al., 2017; Caruso et al., 2018). Furthermore, research in Pune and rural

Odisha found that women experienced psychosocial impact and high symptoms of anxiety, depression, and distress related to sanitation behaviors even if they had access to a facility (Hirve et al., 2015; Sahoo et al., 2015; Caruso et al., 2018).

Social norms factor into the expectation of women taking on household-centered roles such as the caretaker or housewife, with men leaving during the workday (O'Reilly, 2010), leaving women to be predominantly tasked with responsibilities surrounding maintaining the household sanitation environment and managing water collection for the family (Sorenson et al., 2011; Graham et al., 2016; Fisher et al.,2017; Stevenson et al., 2016). In rural Odisha, Routray et al. (2017) demonstrated how these roles limit women's WASH-related decision-making and the opportunity for self-advancement in sanitation initiatives (Routray et al., 2017). In urban slum communities, the existing literature highlights a lack of financially and physically accessible toilets for women who are safe, private, and adequately developed (Khanna & Das, 2014). The highly gendered sanitation experiences and outcomes emphasize the value of understanding how sanitation interventions and policies can impact women's empowerment. Agency is an integral domain of women's empowerment, and current evidence specifically demonstrates a gap in research on women's agency in relation to their sanitation experiences (Caruso et al.,2017; Caruso et al., 2021).

At Emory University, a team of researchers is conducting the Measuring Urban Sanitation & Empowerment (MUSE) study which aims to "to develop and validate quantitative survey instruments to measure women's empowerment in relation to sanitation in urban areas of low-income and middle-income countries" (Sinharoy et al., 2022). This qualitative analysis focuses

on MUSE's agency-related data collected through cognitive interviews in urban Tiruchirappalli, India. It explores women's anecdotes, beliefs, and experiences surrounding the four subdomains of agency: leadership, collective action, decision-making, and freedom of movement. The empowerment framework for this study refers to agency as "the ability to pursue goals, express voice, and influence and make decisions free from violence and retribution" (van Eerdewijk et al., 2017). Therefore, this qualitative analysis generates evidence beyond infrastructure and access and explores how aspects of women's agency, and lack thereof, are intrinsically tied to the development of sanitation services and their utilization. WASH organizations can utilize findings to inform interventions that directly and indirectly empower women and girls, with particular relevance to urban India.

This study aims to explore women's sanitation-related agency, specifically the sub-domains of decision-making, leadership, collective action, and freedom of movement—in urban Tiruchirappalli, India.

# METHODOLOGY

To understand women's agency related to sanitation in urban Tiruchirappalli, India, we conducted a secondary analysis of cognitive interview data collected in August 2019. The data is from a larger parent study, i.e., the MUSE study, which is working towards developing and validating a collection of survey tools to measure urban sanitation-related women's empowerment (Sinharoy et al., 2022). Cognitive interview data from Tiruchirappalli, India was collected to test and strengthen the survey tool. Data related to Agency, Bodily Integrity, and Institutional Structures, which is based on the Empowerment Model developed by van Eerdewijk et al., was collected through these cognitive interviews (van Eerdewijk et al., 2017). This qualitative analysis will explore women's sanitation experiences specific to the Agency domain and related sub-domains: leadership, decision-making, collective action, and freedom of movement.

**Study Area:**

Data collection occurred in two neighborhoods in a mixed-income area called Milagupuarai in urban Tiruchirappalli over 8 days in August 2019. Tiruchirappalli (Trichy) is in the state of Tamil Nadu in South India and lies along the Kaveri River. Trichy is the fourth largest city and has the densest regional urban area in the state. With a population of 1,118,000, the city's overall sex ratio is 1,048 females for every 1000 males (NFHS-4, 2017). 81% of households in Trichy have access to individual toilets, 14% of households utilize community/public toilets, and 5% practice open defecation (TNUSSP, 2018). As of 2021, 3,483 Individual Household Latrines and 13 community toilets were built in Trichy due to the Swachh Bharat Mission (SBM) or Clean India Mission. SBM is a nationwide campaign in India aimed to eliminate open defecation and

improve solid waste management (SBM, 2021). A greater proportion of urban households in Trichy (62%) use improved sanitation facilities compared to rural households (31%) (NFHS-4, 2017). Use of community toilets and open defecation were more prevalent in slum areas, with the maintenance of the community toilets varying based on the management present (TNUSSP, 2018). Data from the National Family Health Survey also highlights that 60.2% of women in urban Trichy have ten or more years of schooling compared to 47.1% in rural households (NFHS-4, 2017). Overall, 83.6% of women in Trichy are literate which is reflective of the 84% literacy rate in the parent state of Tamil Nadu. Specific to women empowerment data collected for the NFHS, 87.4% of married women in Tamil Nadu usually participate in household decisions, and 41.9% of ever-married women experienced spousal violence (NFHS-4, 2017).

## QUALITATIVE DATA COLLECTION

### Cognitive Interviews

Cognitive interviews (CIs) were conducted with 42 women over the age of 18 across three life stage categories to pre-test a sanitation and empowerment survey tool called ARISE (Agency, Resources, and Institutional Structures for Sanitation-related Empowerment). CIs were used to confirm face validity and ensure survey items were understood as intended. They provided the research team with an opportunity to strengthen the survey tool before large-scale deployment and make certain it was culturally relevant. Specifically, participants were read each quantitative survey question and asked to respond to the question with a set of potential response options to mimic the survey. They were then probed to describe what they were thinking of while responding and asked to rephrase the questions in their own words. For example, if the

participant answered "*Strongly agree*" to "*In this community, women have a voice in making decisions about community sanitation*" in the decision-making section, she was further probed, "*What does this mean to you? How would you put it in your own words?*". The women were encouraged to describe their thought process while answering the question by "thinking aloud". This process was repeated for each question and at the end of the interview, there were open-ended questions for participants to express any further thoughts they had regarding the topics covered.

Three cognitive interview guides were created, focusing on one of the three domains of empowerment: *agency, resources, and institutional structures*. This analysis utilized textual data collected through agency-specific cognitive interviews, all of which further explored the four sub-domains, i.e., leadership, decision-making, collective action, and freedom of movement.

**Study population**

The target population was women aged 18 and above who spoke either Tamil or English and lived in the mixed-income neighborhood Milagupuarai in Tiruchirappalli, India. For the Agency domain, 11 participants were purposively selected across three life course stages (unmarried women 18-25, married women aged 25-40 years, and women aged 40 and above) as studies have indicated that women of varying ages and life stages have different sanitation experiences (Caruso et al., 2017). Participants under the age of 18 were ineligible for the study. Researchers stopped recruiting if the target number of participants across the life stages and study site was reached.

**Recruitment strategy**

All participants were recruited through convenience sampling, where trained enumerators knocked on doors in the selected neighborhoods to identify eligible women across different life strata. When it was difficult to recruit enough women in a certain life stage, enumerators utilized snowball sampling by asking eligible women or community members to recommend other potential participants who could take part in this study. Once an adequate number of women were recruited in each sub-group, enumerators stopped recruitment. A total of 11 participants from all three life stages and occupations were recruited from the two neighborhoods.

All interviewers were female and fluent in both Tamil and English. They underwent intensive training which covered sampling and recruitment, ethical considerations, and the overall cognitive interview process. Each data collection team included a lead interviewer, lead notetaker, and backup team member for additional support. With each eligible participant, a trained interviewer administered a short screening and demographic survey in the preferred language and then proceeded to ask the cognitive interview questions specific to the agency domain. The interview only proceeded if the participants consented to engage in the 60-120 minutes long interview. Participants were interviewed once, were not compensated financially, and had no further interactions with the research team.

**DATA MANAGEMENT AND ANALYSIS**

All interviews were audio-recorded, transcribed, and then translated into English by trained research assistants for further tool refinement and analysis. The transcripts were deidentified and

uploaded onto a folder available only to the research team to maintain confidentiality. Secondary analysis for this thesis was based on these transcripts.

A codebook with deductive codes based on both the sub-domains of agency - decision-making, leadership, collective action, and freedom of movement – and the cognitive interview guide was initially developed. Each transcript was then uploaded into MAXQDA, a qualitative and mixed-method analysis computer software (version 22.1.0). The author utilized memos for the inductive code development process to note emerging themes and ideas generated from the agency data. After the inductive codes were added and the codebook was finalized, the textual data from the transcripts were organized according to these codes. The coded segments were also sorted by 'occupation' and 'life stage' and compared to explore possible patterns. Summary code reports were generated to begin a deeper exploration of coded data and review emerging themes specific to each code. Properties and key dimensions of decision-making, leadership, collective action, and freedom of movement were further identified for each theme. Observations and any discrepancies were noted using memos, and emerging patterns were verified through additional data review.

**Ethics and Consent:**

The MUSE study was approved by the Emory University Institutional Review Board (USA; IRB 00110271) in the United States and by the Azim Premji University Institutional Review Board (India; Ref. No. 2019/SOD/Faculty/5.1) in India. Before the interview, participants were informed about the purpose of the study, the voluntary nature of participation, and that they could pause or withdraw from the study at any time. Interviews were conducted in the homes of

the participant or in a private location of their convenience. When privacy was breached, the interview was paused until privacy was resumed. All participants were required to provide verbal consent before the interviewing process. The informed consent process included informing that the interview would be recorded, transcribed by research assistants, and deidentified to maintain their confidentiality. Additionally, they were notified about the estimated time burden of participation and that there was no compensation, no risks, or any direct benefits for participating in this study. Participants received a copy of the consent form with contact information in case of further clarifications or questions regarding the study.

## RESULTS

Women who were interviewed represented various life stages, educational backgrounds, and occupation statuses (Table 1). All participants were involved in caring for dependents who needed support with sanitation needs and believed that sanitation was a problem in their community. The findings showed strong support for women's sanitation-related leadership and decision-making abilities, with personal anecdotes of sanitation initiatives organized collectively by women in the community. While women were regularly considered experts on sanitation-related issues due to their role as primary caretakers in the household, several limitations prevented complete freedom to participate in these sanitation-related initiatives. These challenges spanned all levels, from societal norms limiting women's involvement, to the local authorities' lack of response to women's initiatives, to women's lack of self-confidence in taking on leadership roles. Key themes, beliefs, and patterns that explore women's sanitation-related experiences within each sub-domains of agency were identified and are further discussed in the following sections.

**Table 1:** Respondent Characteristics for Agency Cognitive Interviews (n=11)

| | Mean | Range |
|---|---|---|
| Age | **33.3** | **(19-57)** |
| | Total number (N) | Total percentage (%) |
| Life Stage | | |
| **Unmarried (18-25)** | 3 | 27.2 |
| **Married (25-40)** | 5 | 45.5 |
| **Over 40** | 3 | 27.2 |
| Type of Home[1] | | |
| **Single family home** | 9 | 81.8 |
| **Apartment** | 1 | 9.1 |
| **Compound with shared living spaces** | 1 | 9.1 |
| Marital Status | | |
| **Single/never married** | 2 | 18.2 |
| **Married** | 7 | 63.6 |

| | | |
|---|---|---|
| **Unmarried, living with partner** | 0 | 0.00 |
| **Separated/divorced** | 0 | 0.00 |
| **Widowed** | 2 | 18.2 |
| Education | | |
| **Completed primary or less** | 6 | 54.5 |
| **Completed secondary to tertiary** | 1 | 9.1 |
| **Completed bachelor's or more** | 4 | 36.3 |
| Occupation | | |
| **Unemployed** | 7 | 63.6 |
| **Self-employed**[2] | 2 | 18.2 |
| **Employed**[2] | 2 | 18.2 |
| **Student** | 1 | 9.1 |
| Neighborhood | | |
| **Slum** | 6 | 54.5 |
| **Middle-class** | 5 | 45.5 |
| Religion | | |
| **Hindu** | 10 | 90.9 |
| **Christian (Catholic)** | 1 | 9.1 |
| Location of Water Source | | |
| **Own dwelling** | 6 | 54.5 |
| **Own yard/plot** | 4 | 36.3 |
| **Elsewhere** | 1 | 9.1 |
| Sanitation Location | | |
| **Own Dwelling** | 7 | 63.6 |
| **Own yard/plot** | 3 | 27.3 |
| **Elsewhere** | 1 | 9.1 |
| Is Sanitation a Problem in your Community? | | |
| **Yes** | 11 | 100.0 |
| Do you care for any dependents who need help when urinating/defecating? | | |
| **Yes** | 11 | 100.0 |

[1]Missing data for one interview
[2]One participant was both self-employed and employed

## Leadership

Few participants mentioned holding formal or informal leadership positions for sanitation initiatives in their community. Projects led included advocating for toilet construction, petitioning for sanitation-related changes in their community, and organizing sanitation education workshops. Among women who were informal leaders, one participant mentioned that "*we do what we can. We go down there – okay nobody came in the corporation, we'll give money to someone else, 10 people will share, thousand rupees we share. What he gave, we clean – like that we try*" (CI – 01, Neighborhood 01, Over 40). Other participants discussed how community members listened to their opinions and informally led meetings about keeping toilets clean, maintaining sanitation, and discussing hygiene concerns among smaller groups of 10 people or less. Many, however, mentioned they were not leaders of any community sanitation organizations or that they did not wish to hold leadership positions. Key reasons for this decision were major responsibilities at home, perceptions of the education level or knowledge a leader must have, lack of connections with the local community, no time for additional responsibilities, lack of acceptance from the community, the perception that others are more capable, and simply no interest. Few women mentioned that while they would not choose to be leaders, they were willing to be members of these sanitation groups and organizations.

Despite a lack of personal interest in leadership, all the women interviewed believed in women's leadership for sanitation initiatives. They expressed that they would support female sanitation organization leaders completely and that similarly, women in their community would as well. Overall, strong trust and belief in women's leadership capability was prevalent, with some

participants noting women's overall expertise in household sanitation and hygiene made them more suitable leaders. "*P: Yes, because they keep their house clean and (unintelligible) I: So, do you completely believe or what? P: If women are there, I'll completely trust"* (CI - 06, Neighborhood 01, Married). Other participants mentioned that women can effectively lead, confidently make decisions, and efficiently address the community's, particularly women's, sanitation, and hygiene concerns.

There was a range of opinions expressed about the local community members, family, and local leaders' support for women's leadership. Some women indicated that men in their community do not accept women's leadership or that they only accept them to an extent. Desires for men to be "*the first*" regarding leadership, believing only their opinions as true and the inability for men to share issues with women were discussed as possible reasons. In response to men's apathy toward women's leadership, all participants believed that men must pay attention to women's opinions on sanitation issues. However, in contrast, some women perceived that the overall community as a unit was completely accepting and encouraging of women's leadership for sanitation initiatives. A participant supplemented this with "*They [community members] accept them completely. If a leader stands, they take them. If they think she's right*" (CI – 11, Neighborhood 02, Over 40). There was variation in the perception of whether local leaders and authority figures would support women's leadership in sanitation organizations. While some noted that leaders are completely accepting, others believed they would only be partially accepting or not at all. A prevalent sentiment was that if local leaders knew the woman's background and qualifications for the leadership position, they completely accepted her leadership. A participant mentioned local leaders would not accept her as a leader because she is new in the area and has not spoken

to anyone in the community. However, some councilors and ward leaders had trouble accepting women as leaders. One participant attempted to lead a sanitation group through her church to clean the community and spread sanitation education, however, the church undermined the participant's decision-making power and did not accept her leadership.

Rarely, participants mentioned perceiving that they would not receive support from family members if they wanted to be a leader in sanitation initiatives. Male and female family members would provide complete support for their female family members' leadership. Only in one instance, a participant mentioned that she did not know if female family members would offer her support to lead a sanitation initiative and that her husband would not encourage her to take up a leading role.

Many participants indicated that they did not believe in solely men's leadership for sanitation initiatives, explaining that men cannot take care of the house better than women, do not care about sanitation or hygiene, go off to work and so do not have time to lead such initiatives, and that woman cannot talk openly to male leaders about certain issues. One participant stated her personal experience of continuously speaking with male councilors but never feeling heard by them. A few participants described partial support for male leaders, however, a common pattern was support for the idea of **both** women and men being leaders together. It was often supplemented by the idea that "*whoever delivers the best*" (CI – 10, Neighborhood 02, Married) should be a leader irrespective of gender. One participant mentioned that while men can be leaders, *"…they're also working, they're doing their duty. They can be, I'm not saying they can't. But women can also be equally*" (CI – 04, Neighborhood 01, Unmarried). One participant

mentioned that "*if they're doing something good for us, it doesn't matter if it is a man or a woman*" (CI – 11, Neighborhood 02, Over 40). They expressed that both are equal, and that men's and women's opinions can be heard if both are leaders. Additionally, when asked if she agrees with men and women as leaders, a participant said "*That is a good initiative. It will be a good opportunity for us to talk to them about our issues*" (CI – 05, Neighborhood 01, Over 40). and that "*work gets done*" when both are leaders. A recurring perception among those who believed in men's leadership was that women would still be better leaders. Only one participant mentioned that it's better if women and men are leaders separately as they may have clashing opinions and goals.

## Collective Action

Participants agreed that the community can act collectively to improve the sanitation conditions and collective action was the best way to address a sanitation problem. Specifically, when discussing collaborating with other women, they described anecdotes where women successfully collaborated to improve their community's existing sanitation environment and organized education initiatives that increased household sanitation and personal hygiene awareness. The perception of strong solidarity among women in their community was common among the women interviewed. However, some doubted whether women in their community would actually work together when a common sanitation issue presented itself and persisted.

Women were described as more proactive in voicing their sanitation-related opinions and acting on sanitation improvement in the community compared to men: "*They don't talk. They all go to work on time. If they go at 6 o'clock, 10 o'clock water will go. Then ladies from 4 houses come*

*and ask*" (CI – 01, Neighborhood 01, Married). An example of women's sanitation-related collective action was a community women's group that advocated for free public bathrooms that have toilets and bathing facilities specifically for women. This was prompted after observing how women coming from other towns, especially for funerals, faced difficulty locating a toilet to freely use. This was primarily due to community members not allowing people who attended a funeral inside their homes due to existing social norms. Addressing drainage issues, accurate garbage disposal, and water shortage around the community have been common sources of collective action among the women in the community. Poor sewage and exposed drains were particularly emphasized as troubling to their children's health (ex: diarrheal diseases, falling into the drain/pothole, etc.) by one participant. Women in the community who were previously practicing open defecation also worked together to advocate for household toilets: "*We used to go in the open after that slowly everyone started building it. For those who don't have, we spoke with them and formed a group of 5*" (CI – 03, Neighborhood 01, Over 40). Another women-led initiative was redeveloping existing public toilets in the neighborhood. When discussing whether participants were open to providing resources such as money and energy for helping develop sanitation facilities, distrust in the motivation of those who collect these funds was expressed by some. "*P: Depends on the people. I: What do you mean by that? P: Some people work just for the cause, but some others might launder money*" (CI – 05, Neighborhood 01, Over 40). Uncertainty on whether women would be willing to give their time and money for resources was expressed at times while others stated that those who cannot afford to contribute money would invest their time in these initiatives instead.

Comparable to the challenges with pursuing leadership roles, women voiced time, being new in the community, work responsibilities, household responsibilities, and lack of acceptance as reasons for not being personally involved in sanitation-related community groups. Time was one of the most common limitations: "*I don't know about others, I work from morning to evening outside, so I don't know about the situation now. Plus, I've been on leave for the past one month."* (CI – 05, Neighborhood 01, Over 40). Another participant added that her role as the sole earner and caretaker in the household left no time for joining sanitation groups. A younger female student mentioned, "*The reason is for all these years, I was studying and then working at a job, so I have no time and I didn't think about it also*" (CI – 04, Neighborhood 01, Unmarried). Additionally, she mentioned "*If I have time, first I'd see whom I know well. After seeing, I'll go to them and tell*" (CI – 04, Neighborhood 01, Unmarried). Additionally, another participant, who was newly married and recently moved to the neighborhood, lacked familiarity with local sanitation-related community groups and community members: "*I don't know ... how to get membership … I just came here. So, I don't have that much familiarity with the area or know that many people too*" (CI – 06, Neighborhood 01, Unmarried). A participant described her women's group taking the initiative to clean the neighborhood and spread sanitation-related awareness through their church, a lack of acceptance from their community made them discontinue. While a rare perception, few participants believed that women may find it difficult to work together as they have their priorities and goals; resolving a sanitation issue together would be challenging because "*whenever ladies get together, they end up arguing*"(CI – 10, Neighborhood 02, Married).

Some women described facing resistance when cooperating with authority figures, government officials, and the local office to address sanitation problems. For example, the local office did not take any steps when community members expressed their concerns about the "*messy*" community environment. Women also personally paid for cleaning common areas in the neighborhood despite this being the government's responsibility.

Most women expressed feeling comfortable working with male community members for sanitation initiatives. While there were 'only women' groups that often collaborated to address sanitation-related issues, men and women in the community also jointly worked together for sanitation improvement. Men and women have worked together to solve common sanitation issues – such as building a toilet for the community, collecting funds for sanitation infrastructure, acquiring land/location for related issues, and sanitation education. Collectively, the community has also come together to petition for sanitation improvement, influenced the media to report on sanitation problems in the neighborhood, and participated in large movements such as protests to advocate for sanitation.

## Freedom of Movement

Women had the autonomy to move freely to access sanitation facilities and attend sanitation forums most of the time. The expectation of having specific locations for urination and defecation was not considered a breach of their autonomy as women also believed it was unacceptable to urinate or defecate in locations other than toilets/latrines. When barriers to women's sanitation-related freedom of movement were discussed, they were often at the societal and community-level, rather than at their household.

Locations other than sanitation facilities were prohibited to be freely used for women's sanitation needs. Women showed support for having expected locations, such as restrooms or latrines whether in the household or outdoors, for sanitation needs and some even laughed at alternative possibilities. As public toilets are available for community members who do not have toilets in their household, women mentioned that anyone who does not use these public facilities and instead, urinates or defecates in other places should warrant scolding. During emergencies, women were free to use toilets at other known households: "*Now there is a latrine, there's one at uncle's house. In that emergency, we can go there"* (CI – 01, Neighborhood 01, Married). If there is public land, while still unacceptable, there were fewer chances that people would care if women openly urinated/defecated: "*If people defecate on private land, the owners will scream, but if they use public places then people don't care*" (CI – 05, Neighborhood 01, Over 40). However, even if an area is noted as "*clean enough*" to urinate/defecate or a woman urinated near a bush due to an emergency, many mentioned that they would be severely scolded for their behavior.

While women could freely access sanitation facilities and attend sanitation-related meetings, there was overall agreement that women should inform their family members to ensure safety and awareness of their whereabouts: "*If I am going to a program, in the house you should let them know, right? For that. The people in the house must know that I'm going here, to let them know, definitely I inform and then go"* (CI – 07, Neighborhood 02, Unmarried). Most participants did not seek permission for any sanitation-related movement and had a common belief that women, regardless of whether married or not, should not ask for permission to leave

the house for sanitation purposes: "I*: You'll say that you are going. Do you have to ask a lot, or can you go without asking? Pt: Without saying we can go. We can go and come*" (CI – 02, Neighborhood 01, Married). However, in contrast, few women believed that those who are younger and newly married would require permission from their husbands before leaving the house. Only a few women required accompaniment if they wished to attend sanitation-focused meetings or programs: "*Alone if I go, they won't let me. If 4 people go together, then they'll ask me to go and come back*" (CI – 08, Neighborhood 02, Married). In situations where only one person was accompanying the participant, family members felt comfortable only if the person accompanying was a relative or a close friend. Another participant noted that the fear of using public toilets limited their sanitation-related freedom of movement. Money constraints were mentioned once as a possible barrier to using pay toilets: "*No, we don't have that comfort to keep paying every time*" (CI – 11, Neighborhood 02, Over 40). Additionally, the same participant mentioned her husband owns a moped/motorcycle, and her child owned a bicycle, while she did not own any mode of transport.

As for water collection, there were varied experiences with freely collecting water from locations other than the household source. Permission to collect water was not required from family members at any time, with no curfews or restrictions imposed. Few noted they could freely fetch water from taps other than their households; one woman mentioned that women in their community were aware of water shortage in their area and so, helped one another in these circumstances. In contrast, some women expressed barriers to using common taps and pipes, especially if they frequented these water sources. According to the women interviewed, community members believed that these common pipes were specifically for households that did

not have their pipes. If women with water pipes at home frequented these common locations, they described being severely scolded by local people who used these pipes: "*Yes, now in our house we have our own pipe. If there's no water, when we go to a common pipe, they scold - "Why? You have a pipe in your house. In our house, since we don't have a pipe, we use this government pipe.", like that they scold. But, in the rules they should not scold. This is everyone's equal right. In our house, water is coming slowly, slowly coming. When we complain, they don't come and fix. That is why we fetch from the common pipe*" (CI – 01, Neighborhood 01, Married).

## Decision-making

### Household decision-making

At the household level, most participants believed that women should make decisions about sanitation and water issues; the male head of the family should seek women's views before decision-making. Many participants described influencing their family's decisions, while others noted having this influence only to an extent. One participant mentioned, "*If women tell, men will listen"* (CI – 08, Neighborhood 02, Married) about all household-related decisions. Joint decision-making with their husband, if possible, was considered best for their household's sanitation infrastructure and environment. However, if mutual decision-making was not possible, many believed that they should be the deciding authority for sanitation-related issues. In contrast, there were few supporters of men being the final decision-maker in the household.

Participants voiced both confidence and disagreement with women being involved in decisions regarding the construction and repair of their sanitation facilities. Some women mentioned their husbands were completely supportive of women's decisions about household sanitation

environment and construction. Family members, including husbands, were generally receptive and accepting of women's decisions and choices. They also agreed that in the family, women have the right to decide where toilets or latrines should be located. A key theme was the perception that women know what is best for the children and family members, and so husbands will listen to the women's opinions: "*Only when a woman is involved, can a man do*" (CI – 11, Neighborhood 02, Over 40). Moreover, all the women described especially having a voice in determining how a sanitation facility environment is cleaned and maintained. However, some women had decision-making influence regarding their household's sanitation environment to an extent only and believed their husbands making the final decision without seeking their views was acceptable. This will be further expanded in a further section that discusses women's perception of men's decision-making role at the household level.

The sentiment of "*not having a choice*" with maintaining and caring for the household's sanitation needs was common throughout. Women generally believed it was their duty to stay involved and make decisions about sanitation maintenance in their household. This included helping the elderly, sick, or children with using the toilet for their sanitation needs: "*I will help anyone who needs help, why wouldn't I? They belong to our house, right?"* (CI – 05, Neighborhood 01, Over 40). One participant said that she would decide to divide tasks among her family of 4 "*Only if I'm not able to do the work*" (CI – 05, Neighborhood 01, Over 40). When asked about water-related decision-making, the same participant noted that "*there is no need for decision-making*" (CI – 05, Neighborhood 01, Over 40) because she must do all the work in the family anyway. This was supported by another participant who mentioned that while she could request her husband to purchase items like soap or cleaning liquid for the sanitation

facility, she does not because she believes she must maintain the sanitation environment. The experiences culminate in the idea that while women expressed influencing household sanitation decisions, they considered it was also their primary role to care for the family's sanitation needs and environment. There were a few experiences that denoted their male partners do not need to be requested to help with caring for family members' sanitation needs or overall household sanitation needs because he does it on their own. Husbands and other family members were overall accepting of women's decisions, and participants mentioned that they had a space for a free discussion about their household sanitation environment.

Financial decision-making for larger expenses required more familial support, whereas women were able to recount making decisions about smaller expenses alone. Many believed that financial management is better handled by women. One participant believed this because more women are getting educated, and "*another reason is mostly they [women] look after their family budget at home, about how to spend. So, because of that they can look after*" (CI – 04, Neighborhood 01, Unmarried). Across the women interviewed, some women have been involved in big expenses related to construction or repairs of a sanitation facility, while all women were involved in smaller expenses such as buying cleaning agents and soap. There is variation in women's experiences with big sanitation-related investments and purchases. A participant who is a 19-year-old student stated that she completely could not make decisions about big sanitation-related infrastructure or repair expenses in her household. Some participants believed in the partial ability to make larger financial decisions. One participant stated, "*I can [be involved with decisions about big sanitation-related purchases] with the help of my husband only. All decisions should take place with men around*" (CI – 05, Neighborhood 01, Over 40) and further confirmed

that these decisions should be joint. Additionally, a participant agreed that "*We decide such things [high budget decisions] together*" (CI – 10, Neighborhood 02, Married) while strongly agreeing that smaller sanitation expenses can be made alone by women.

Finally, men were either described as the final decision-maker in the family or as a supporter of women's household sanitation decisions. Some women believed that while the male head of the family should seek women's views when making these decisions, ultimately it is acceptable for him to make the final decision for the household. Few believed it would be "*good*" if her husband can make important sanitation decisions without asking his wife; one participant supported this idea because her husband's decisions normally align with her decisions, and it is his duty to be the sole decider in the family. Another described that her husband specifically could make the correct sanitation decisions and mentioned "*when I can myself make those decisions, they can too*" (CI – 09, Neighborhood 02, Married). On the contrary, many women also believed that male heads making important decisions about sanitation without asking their wives is completely unacceptable: "*Only they [women] know everything, about where the waste is thrown, water need, men go out*"(CI – 11, Neighborhood 02, Over 40) and so, men must consider women's views when making household sanitation decisions as women are more aware of household sanitation needs and environment.

**Community decision-making**

In contrast to involvement in household decision-making, women voiced more challenges with feeling comfortable openly sharing their opinions and their decisions being accepted at the community level. Several participants noted that while women have opportunities to speak their

opinions on decisions being made, they experienced community members and organizations not accepting and acting upon them. There was consensus that women must be involved in the community's sanitation and water decisions; they disagreed with solely men making decisions for the community. Women were more aware of community sanitation matters but felt it would be beneficial to have mutual decision-making between women and men (with whoever is more capable of having the final say). This contrasts with men's role in household decision-making, where some women were accepting of men having the final say.

Despite participants believing that women are more aware and proactive about sanitation issues in the community, they believed that their role in decision-making exists only to an extent. It was mentioned that women do more sanitation work for their community and primarily take care of their family's sanitation needs, especially because men do not have time to stay involved due to their work responsibilities. Another participant noted, "*Women take part more than men. Because when it comes to sanitation, women only open their mouths*" (CI – 11, Neighborhood 02, Over 40). Overall, many believed that women know more about community sanitation, and it is their duty to be involved in sanitation. However, women also believed their role in decision-making exists only to an extent, and so they have fewer opportunities than men to influence their community's sanitation-related decisions. All participants completely agreed that women should be more involved in making these decisions and that their community leaders and organizations must completely seek women's opinions to fully understand the local sanitation environment.

Women were very comfortable being involved in decision-making at community sanitation meetings that comprised only women. Generally, participants felt completely comfortable

expressing their sanitation-related opinions with women, even if some disagreed with their views on certain sanitation issues. Sometimes, their comfort with sharing opinions depended on how women voiced their disagreement to them. Community-level decision-making that women participated in was the construction of sanitation-related infrastructure or addressing community sanitation issues such as garbage disposal, clogged drains, or street maintenance. One unique opinion from a participant was that she does not participate in decision-making for building sanitation facilities/infrastructure development even when among women, however, she can comfortably share her opinions on hygiene when in a women's group. The overall perception was that 'only women' groups provided a space where women could completely listen and share their opinions with no restrictions on topics that were covered.

Men's presence in these community meetings created an environment that stifled some women's open expression about sanitation, especially during disagreements or when contrasting viewpoints were presented. It was more challenging when men led these forums/meetings, especially when topics related to constructing sanitation facilities or personal hygiene were discussed. It was much easier to have conversations surrounding "*simpler*" topics such as maintaining the drainage, garbage, or local streets. Few women agreed with men making sanitation-related decisions for their community, and one participant uniquely mentioned that while men can completely make the decisions for the community, this is only possible to an extent in the household. One participant mentioned that men in her community encouraged women to share their sanitation-related opinions: "*Be it menstrual problems or sanitation, anything, be it ladies or girls, they ask us to openly tell them. Even if only men are present, they encourage us to speak, so we can tell. It's not wrong. We can tell all this because a lot of diseases are spreading because of improper sanitation*" (CI – 04, Neighborhood 01, Unmarried).

Many participants who felt uncomfortable in meetings with only men were more confident speaking up when both men and women were present. However, there was still some discomfort or hesitation shared with the idea of men being present in these discussions. One participant noted, "*I won't talk at all*," when asked if she would be able to express her opinions in a meeting where men and women are present. She further mentioned that during meetings where hygiene is discussed, "*Men ask why the women are interfering when they are talking*" (CI – 05, Neighborhood 01, Over 40) which prevents women from fully participating. Additionally, another question brought up was, "*How can we talk about such issues in the presence of a man? It is little difficult to speak but more convenient when men and women are present*" (CI – 11, Neighborhood 02, Over 40).

# DISCUSSION

This qualitative analysis aimed to explore the sub-domains of women's sanitation-related agency—decision-making, leadership, collective action, and freedom of movement—in urban areas of Tiruchirappalli, India. Overall, trust, belief in their collective efficacy, socio-cultural norms, and expectations of women's duties influenced their leadership, collective action, and aspects of their household and community-level decision-making. While women noted strong support for women's leadership and decision-making abilities for local sanitation initiatives, many women were not confident, were disinterested, or lacked time for their involvement. Support from male partners and family members to pursue leadership roles and attend sanitation meetings was common among those interviewed, however, some women expressed discomfort with community-level decision-making and vocalizing opinions amongst other male community members. This revealed a possible contrast in household-level versus community-level male support. Furthermore, our findings emphasized the value of supportive leadership and sanitation governance for women's involvement in sanitation initiatives or discussions; we found women expressing how challenges faced with leadership or the existing governance of community water-use affected their collective action, leadership, and freedom of movement.

## Trust and Belief in Women's Collective Efficacy

Participants deemed women's sanitation-related leadership completely trustworthy, which is consistent with existing research. Specifically, research in rural Sri Lanka found that community members place strong trust in women leaders for water and sanitation projects in their villages (Aladuwaka et al., 2010). In our findings, trust in women's leadership predisposed some participants' engagement with sanitation initiatives and positively influenced collective action.

Similarly, research in rural Kenya with household heads found that the perception of high trust among community leaders influenced people to collectively engage and participate in WASH initiatives (Abu et al.,2019). A study in Indonesia among women business owners, mobilizers, and public sector employees highlighted how having a trusted network of supportive women in one's local area could contribute to women's empowerment (Indarti et al., 2019). There was also more trust and faith in women's financial management for sanitation organizations than in men's; this was supported by the inherent belief in women's collective efficacy in managing finances and working together to make decisions for the community's sanitation environment. Research in northern Kenya, which explored women's role in water management and conflict resolution, demonstrated how not only women but the larger community placed more trust in financial decisions and resource utilization when women were involved (Yerian et al. 2014).

Our findings support existing evidence that women are more likely to elect female leaders due to more trustworthiness compared to male leaders for sanitation initiatives; in rural Uganda, a study among female respondents found a gender bias in the trust placed in female Water User Committee members compared to male members (Naiga et al., 2015). In our research, the participants who have been leaders of formal and informal sanitation groups described successful initiatives that brought forth sanitation improvement in their community. Recognizing women's collective efficacy in addressing sanitation issues could possibly increase the community's trust in women's capabilities and provide successful examples of women-led sanitation initiatives. Therefore, maintaining and strengthening the trust among female community members and highlighting women-led groups' achievements in the sanitation space should be prioritized in WASH programming.

**Existing Social Norms and Expectations of Women's Duties**

The expectation of women to dutifully take care of household responsibilities remains prevalent across studies that explore women's sanitation experiences. Our findings show how women regularly mentioned it as their duty to act on sanitation maintenance and improvement in their household. Some women attributed these expectations to women being sanitation/cleanliness experts and, so, more capable of making decisions on sanitation-related issues. However, the same norms were voiced as limitations for women having neither time nor energy to participate in community decision-making, sanitation initiatives, or pursue leadership roles, a finding that is consistent with a study in Odisha, India that demonstrated prevailing socio-cultural practices and a lack of exposure to the community outside the household limited women's sanitation-related decision-making power (Routray et al.,2017). We found that some women lacked the self-confidence to effectively contribute to sanitation-related issues, even if they expressed that women are generally more capable of making sanitation-related decisions. Research has highlighted the impact of gendered social norms on women's embodiment or perceptions of their abilities to lead sanitation initiatives (Young, 2005; Jalali, 2021). A lack of self-confidence in their education level, level of knowledge, and connection with the larger community factored into women in this study doubting their capabilities. Similarly, Routray et al. (2017) showed how women's self-confidence in decision making was rooted in social norms that limit women's educational attainment as well as the regular exposure to the community's sanitation improvement system (Routray et al., 2017).

While women's expertise in sanitation was recognized by the study's participants and other research, our findings showed women hesitating to make large sanitation decisions and financial

decisions despite comfort with smaller decisions, such as fixing the tiles/lights or buying cleaning agents. Research has found that women have less access to financial resources and are often financially dependent on their husbands or male family members to make larger decisions (Routray et al., 2017; Jalali, 2021). Routray et al. call attention to NGOs that rarely seek female household members' participation or opinions for latrine construction projects and instead directly approach male household members (Routray et al., 2017). WASH programming that aims to improve both household and community-level sanitation experiences must address gendered family dynamics and socio-cultural norms, or at least not uphold or exploit them. Equitable approaches are required to ensure that women's opinions on effective methods to increase female sanitation-related involvement are considered while ensuring that interventions neither further marginalize women nor add burden to their existing responsibilities.

**Men's Support and Role in Gender-sensitive WASH**

Our findings showed that male family members were supportive of women's involvement in sanitation groups and did not limit women's sanitation-related freedom of movement, a contrast to other studies that found male family members to restrict women's sanitation-related freedom of movement and decision-making (Sultana, 2009; Singh, 2017). Despite male family members' support, women in this study found it difficult to express their opinions comfortably in public settings where male community members were present, especially when discussing personal hygiene and sanitation-related experiences; some of this difficulty was attributed to past experiences where women's concerns were not respectfully received in these community spaces. Research in Central Vietnam among men and women recognized a gap in 'solidarity within and between women and men' and 'the extent to which women's perspectives were listened to at the

community level' for WASH decisions (Leahy et al., 2017). Leahy and colleagues emphasized a need to shift men's views regarding the value of women's community-level participation (Leahy et al., 2017). There is a need for gender-sensitive WASH programming not solely to focus on female community members but also to work with male community members to ensure they recognize the power dynamics and social norms that determine women's sanitation experiences. Our findings are especially supportive of Leahy et al.'s push for interventions that allow male and female community members to discuss their opinions both separately and subsequently together, which could help address the discomfort without completely segregating men and women during sanitation discussions (Leahy et al., 2017). Further research can also potentially reveal factors that could be attributed to the variation observed in our findings compared to existing literature regarding male family members' support for women's involvement in sanitation groups and sanitation-related restrictions; this will provide useful guidance for interventions addressing the lack of male awareness and support in relation to women's sanitation-related agency.

**Leadership's Support and the Sanitation-related Governance**

At the community level, our findings reflect existing WASH research, which shows women's agency to be limited by local leadership, sanitation programming, and the community's sanitation expectations. In Indonesia, research found that local leaders and community members criticized or were confused by women's engagement in sanitation-related initiatives (Indarti et al., 2019). Our findings noted that local leaders were more likely to support women's leadership when the women were well-known, and their qualifications were established. However, when gendered social norms mostly limit women to the household, those who aspire to be strong

leaders might be underestimated by local leaders because they are not as well-known or involved in the community. We also found that women's freedom of movement and collective action were diminished by previous negative experiences they faced with local leadership or organizations: some expressed frustration with government bodies that failed to address issues surrounding dirty streets or spoke about how high authority governments only adequately receive women's complaints if they have high positions in organizations. In their research in northern India, Scott et al. (2017) showed how the "fragmented and opaque administrative accountability" created barriers for women to gain access to those in leadership positions (Scott et al., 2017). Research has emphasized the importance of engaging authority figures, leaders, and officials when seeking to increase women's agency and involvement with sanitation-related issues (Leahy et al., 2017; Scott et al., 2017). Women's roles are integral in encouraging equity in sanitation initiatives and leadership internally recognizing women's vital role in sanitation-related decision-making (Leahy et al., 2017).

We found women experiencing disputes with community members over the use of common taps, which was also prevalent in Sahoo et al.'s (2015) research in Odisha, India (Sahoo et al., 2015). In our analysis, the main reason was the expectation that these taps were only for those who did not have household taps. Women in Odisha, India experienced social stressors with needing to negotiate access to shared water and sanitation resources (Sahoo et al., 2015). Fear of being scolded or chased off when collecting water from common taps somewhat restrained women's freedom to access water, even when they were facing challenges with water shortage in their household taps.

**Strengths and Limitations**

Overall, the cognitive interviews allowed women to share detailed anecdotes and experiences in response to the agency-related survey questions. Factors affecting leadership, decision-making, freedom of movement, and collective action were explored in-depth section by section at the individual, household, and community levels which allowed for a holistic lens to understand factors affecting women's agency. As the cognitive interviews were primarily aimed to validate the MUSE survey tool, the structure and purpose of the cognitive interview limited probing opportunities for specific responses. However, the cognitive interviews still elicited important details about beliefs and experiences related to women's sanitation-related agency that enabled this additional secondary analysis. While male community members' perspectives were not included in this analysis, the female respondents did provide their perceptions on whether men were supportive of women's sanitation-related agency and at times, spoke about men's role in community and household level WASH. This highlights the opportunity for future research that explores men's perspectives and support for women's agency with sanitation.

**Conclusion**

Women's agency is central to women's empowerment. This qualitative analysis highlights the value of strong trust among women and confidence in their ability to make important sanitation-related decisions at all levels of society. Interventions must recognize their expertise in large or small sanitation-related issues and highlight successful women-led sanitation initiatives to enable women further to participate. Communities should have spaces where women's sanitation-related opinions can be comfortably shared as well as governance that respects and encourages women's engagement in addressing sanitation issues. Our findings further emphasize the need

for WASH programming to recognize the gendered social norms within the local household and also engage men when addressing sanitation-related restrictions. Future efforts in WASH interventions and research should address and explore women's agency in relation to other domains (i.e., resources, norms, and institutional structures) of women empowerment.

# PUBLIC HEALTH IMPLICATIONS

- Recognizing women's collective efficacy in addressing sanitation issues could possibly help build the community's trust in women's capabilities and provide successful examples of women-led sanitation initiatives. Our findings showed how trust in women's leadership predisposed some women's participation in engaging with sanitation initiatives and collective action. Therefore, maintaining and strengthening the trust among female community members and highlighting women-led groups' achievements in the sanitation space should be prioritized in WASH programming.
- WASH programming that aims to improve household and community-level sanitation experiences must address gendered family dynamics and socio-cultural norms. Interventions must recognize women's expertise in large and small sanitation-related issues such as latrine construction, repairing tiles, latrine placement, or purchasing cleaning goods. Additionally, highlighting successful women-led sanitation initiatives and actively seeking female household members' opinions on sanitation-related decisions can work toward addressing preconceptions of women's capabilities. This actively requires an equitable approach so that women's views on effective methods of increasing female sanitation-related involvement are considered while also ensuring interventions do not add an unnecessary burden to women's existing responsibilities.
- There is a need for gender-sensitive WASH programming to not solely focus on female community members but also work with male community members to ensure they recognize the power dynamics and social norms that determine women's sanitation experiences. Our findings revealed that some women found it difficult to express their opinions comfortably in public settings where male community members were present,

mainly when discussing personal hygiene and sanitation-related experiences; some of this difficulty was attributed to past experiences where women's concerns were not respectfully received in these community spaces. Similar to Leahy et al.'s suggestion, interventions that encourage male and female community members to discuss their opinions both separately and subsequently together can possibly help address the discomfort without completely segregating them during sanitation discussions (Leahy et al., 2017).

- Our findings noted that local leaders were more likely to support women's leadership when they were well-known and their qualifications were established. However, when gendered social norms mainly limit women to the household, those who aspire to be strong leaders might be underestimated by local leaders because they are not as well-known or involved in the community. We also found that women's freedom of movement and collective action were diminished due to previous negative experiences with local leadership or organizations. WASH programming must engage with authority figures, leaders, and officials when seeking to increase women's agency and involvement with sanitation-related issues. Their roles are integral in encouraging equity in sanitation initiatives and leadership internally recognizing women's vital role in sanitation-related decision-making (Leahy et al., 2017). Outreach programs where sanitation leaders and authority figures interact with the general community and especially encourage local women's involvement in sanitation initiatives can help address the exclusivity within sanitation leadership.

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