

# World Water Day importance of WASH, equal access opportunities, and WASH resilience - A social-inclusion perspective

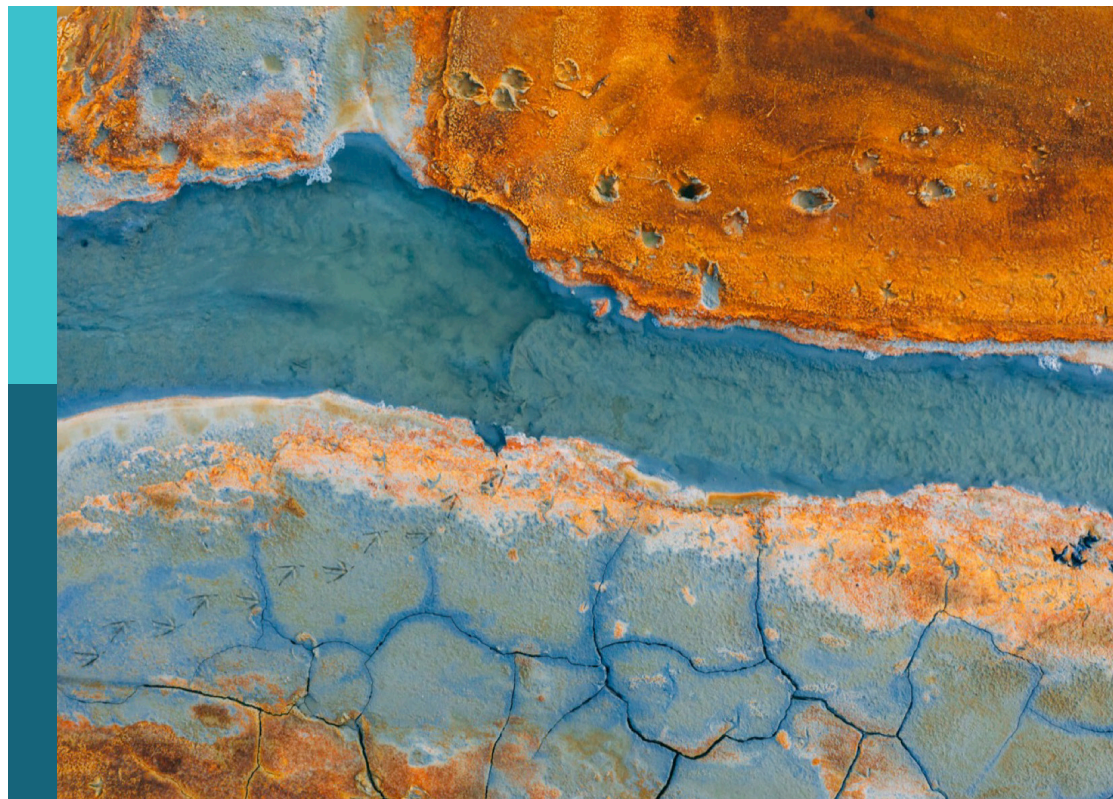
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# World Water Day 2022: importance of WASH, equal access opportunities, and WASH resilience - A social-inclusion perspective

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# Editorial: World Water Day 2022: importance of WASH, equal access opportunities, and WASH resilience - A social-inclusion perspective

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## KEYWORDS

disability, gender, equality, inclusion, water, sanitation, and hygiene (WASH), human rights

## Editorial on the Research Topic

[World Water Day 2022: importance of WASH, equal access opportunities, and WASH resilience - A social-inclusion perspective](#)

## Introduction

This Research Topic brings together research on inclusion in water, sanitation, and hygiene (WASH) services. The Research Topic includes 10 papers: six primarily focus on gender, two on disability, and encouragingly two on other groups (people experiencing homelessness, sanitation workers) and emerging issues (sextortion) that have been relatively absent from the current discourse.

The papers highlight the disconnect between those who design and deliver services and disadvantaged citizens who are too frequently excluded from provision. Five papers primarily focused on the need for WASH services to respond to the complexity and diversity of different needs, while another five papers viewed WASH as a potential entry point for broader changes in inequalities. The papers primarily employ qualitative methods with only one paper based on quantitative methods. In this editorial, we reflect on five cross-cutting themes arising from the papers, which also serve as areas for further work to reduce WASH and broader inequalities.

## Tailoring WASH infrastructure and information to meet people's requirements

The primary emphasis in many of the papers is on how to improve access to WASH services for groups that may be vulnerable, whether through design, planning, management, implementation, financing, or monitoring and evaluation. Nine papers focus

on improving access to WASH services for these various groups, including the need for accessible infrastructure for people with physical disabilities. As an example, [Patrick et al.](#) explore the importance of multiple (networked and non-networked) water sources when designing and monitoring water access as seasonality and climate change impact these, with implications for women's unpaid work collecting water for the household. In addition, two papers examine WASH services at home and in public settings during the COVID-19 pandemic, with [Gonzalez et al.](#) focusing on access to WASH for groups that may be marginalized and [Liera et al.](#) on the gaps in provision for people experiencing homelessness.

The affordability of WASH services is vital and is noted across multiple papers. [Liera et al.](#) note payment to use public toilets as a barrier for people experiencing homelessness. [Wilbur, Pheng et al.](#) also highlight the affordability of accessible WASH services as a barrier for people with disabilities and their carers. Several papers recommend that innovation in humanitarian programming (subsidies, cash transfers) must ensure they target the poorest and be accessible to people with disabilities.

The articles generally focus less on meeting hygiene requirements than on improving access to water and sanitation infrastructure for all groups. However, [Wilbur, Clemens et al.](#) focus exclusively on menstrual health in humanitarian settings and considers the disposal mechanisms for menstrual materials for women with and without disabilities.

Regarding gaps, [Wilbur, Pheng et al.](#) and [Wilbur, Clemens et al.](#) considered the accessibility of WASH information for people with different impairments. These authors highlighted that accessible information would benefit people with disabilities, people of lower literacy, including older women and other groups that may be. [Bhakta et al.](#)'s paper, raises another emerging issue relevant to tailored service provision: sanitation workers' rights and occupational safety to realize rights to decent work, including inclusive WASH infrastructure.

## Participation and partnerships

Most authors in this Research Topic begin from the perspective that inclusive services require participation and partnerships to improve services and alter essential relationships and ongoing practices. Almost all papers mention the participation of groups that may be vulnerable and recognize the capabilities of these groups in furthering WASH by developing partnerships with organizations representing these populations (e.g., Organizations of Persons with Disabilities, women's groups, and worker's unions).

At the individual level, people with disabilities, women, and people experiencing homelessness face inequitable participation. [MacArthur et al.](#) point out how barriers are both informal and formal, with [Wilbur, Pheng et al.](#) noting this includes the ability of people with disabilities to attend meetings and [Doma et al.](#) highlighting barriers such as lack of women's confidence and women's voices not being respected at the community level. Mechanisms to improve people's participation included male support for women, as noted by [Doma et al.](#), transformative leaders who support diverse views and equitable participation in communities and workplaces, as described by [Gonzalez et al.](#), and

collaboration amongst sanitation workers, human rights activists and allies in the WASH sector as put forward by [Bhakta et al.](#)

Six of the ten papers focused on the importance of partnering with rights-based organizations to improve the participation of groups that may be vulnerable. For instance, [Grant et al.](#) concentrate on women's rights groups, [Wilbur, Pheng et al.](#) on partnering with Organizations of Persons with Disabilities, [Bhakta et al.](#) details sanitation workers' unions and [Liera et al.](#) concentrates on a civil society organization that promotes the inclusion of people experiencing homelessness. [Merkle et al.](#), [MacArthur et al.](#), and [Doma et al.](#) highlight that gender transformative leadership can enable growth, inspire action, strengthen WASH services, and increase visibility and social inclusion. [Grant et al.](#) argue for a more collaborative stance and note the significance of finding synergies between women's rights groups and WASH-related organizations.

## Do no harm

The significance of 'do no harm' and how people were or could be harmed when using WASH services emerges clearly from seven of the 10 papers. Some highlight instances where challenges related to WASH services can be disempowering, with [Patrick et al.](#), [Merkle et al.](#), and [MacArthur et al.](#) focusing on women [Liera et al.](#) on people experiencing homelessness and [Bhakta et al.](#) on sanitation workers. Other authors note situations where additional responsibilities are passed to already vulnerable groups. [Merkle et al.](#) highlight potential harm at the intersection of corruption and violence that makes women vulnerable to sextortion in Bangladesh. This constitutes an emerging area of WASH-related harm and requires further research in other country contexts. [MacArthur et al.](#) discuss gender-insensitive approaches, which may be harmful, as well as potential backlash and resistance to more gender transformative approaches, recommending do no harm strategies in all efforts in gender integration. However, on a positive note, [Gonzalez et al.](#) highlight how women who experienced harm have been supported as leaders to mitigate that same experience for others.

## Looking beyond WASH to transformative change

The potential for WASH interventions to also secure the radical changes needed for broader societal transformation remains a point of difference between these contributions. Is WASH an end in itself whereby people improve their access or can WASH catalyze equitable, inclusive development and dismantle inequalities? Seven papers considered WASH within the multidimensional nature of inequalities to suggest that transformative progress is possible but not guaranteed. Improved WASH services are essential to social transformation, a necessary even if not a sufficient condition. WASH actors can go only so far; coordination and deep engagement with others across different services, sectors and service providers are needed to achieve more far-reaching change, but such change is possible. For instance, [Wilbur, Pheng et al.](#) describe how assistive devices might be a pre-condition for people to leave home and access public WASH services. Similarly, [Bhakta et al.](#) highlight the importance of cross-sectoral action to

ensure decent work in the WASH sector. Grant et al. describe the role of transformative leaders in enhancing those synergies in the context of Timor-Leste, addressing power differentials and creating the space for marginalized and excluded people to take their seats at the table, and Gonzalez et al. echoes these points based on transformative leaders across other parts of Asia. Together these papers point to an encouraging emerging trend and focus on transformative change, noting that addressing the much needed changes within WASH services should not be either forgotten or deprioritized and is required in tandem with broader transformation.

## Conclusion

In summary, the papers represent diverse interventions emphasizing attention to gender equality, disability and social inclusion. While some initiatives aim to provide WASH services more efficiently and equitably, drawing on the capabilities of people who may be vulnerable together with their families and caregivers, others have emerged from rights-holder groups determined to advance their broader needs and interests. Whilst efforts increasingly aim for WASH services that include more population groups, the research covered in this Research Topic demonstrates that WASH services are rarely still accessible for all. Discrimination and exclusions remain, with limited research about WASH for population groups that may be vulnerable such as people with invisible disabilities, people of different gender identities, those in ethnic minorities, older adults and children and people experiencing homelessness. Although the evidence base is slowly growing, greater diversity in research methodology is needed (alongside greater diversity in population group), including mixed methods and quantitative research that can capture the scale and extent of issues to complement the welcome depth of qualitative research in this field. Such a strengthened evidence base can inform policy and practice toward greater inclusion within and beyond WASH services.

## Author contributions

JWilb: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing—original draft, Writing—review and editing. SC: Conceptualization, Data curation, Formal analysis, Investigation, Writing—original draft, Writing—review and editing, Methodology. JWill: Conceptualization, Data curation, Formal analysis, Investigation, Writing—original draft, Writing—review and editing, Methodology.

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# A qualitative cross-sectional study exploring the implementation of disability-inclusive WASH policy commitments in Svay Reing and Kampong Chhnang Provinces, Cambodia

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**Background:** The Government of Cambodia references core concepts of human rights of people with disabilities in their water, sanitation and hygiene (WASH) policies and guidance. However, few references clearly articulate activities to achieve these.

**Methods:** This cross-sectional study in Cambodia explores the implementation of core concepts of human rights referenced in Cambodia's WASH policies in Kampong Chhnang and Svay Reing Provinces: Individualized services, Entitlement/affordability, Participation, Family resource, Access. Seven government officials and 10 service providers working in Phnom Penh and the two provinces, 16 women and men with disabilities (aged 18–65+), and four caregivers living in the study sites were included. Purposive sampling was applied to select participants. In-depth interviews were conducted *via* Zoom and over the telephone and analyzed data thematically using Nvivo 12.

**Results:** The Three Star Approach for WASH in Schools was noted as a promising approach for implementing policy commitments to make school WASH services accessible. However, policy commitments to disability-inclusive WASH were not always enacted systematically at all levels. Organizations of Persons with Disabilities faced challenges when advocating for disability rights at WASH sector meetings and people with disabilities were inconsistently supported to participate in commune WASH meetings. Poor access to assistive devices (e.g., wheelchair) and inaccessible terrain meant few people with disabilities could leave home and many had inadequate WASH services at home. Few could afford accessible WASH services and most lacked information and knowledge about how to improve WASH access for people with disabilities. Caregivers had no guidance about how to carry out the role



and few had assistive devices (e.g., commodes, bedpans) or products (i.e., lifting devices), so supporting WASH for people with disabilities was physically demanding and time-consuming.

**Conclusion:** This study has noted several areas where Cambodia's WASH systems are focusing efforts to ensure people with disabilities gain access to WASH, but it has also highlighted aspects where implementation of policy commitments could be strengthened. A more comprehensive and cross-sectoral approach to progressively realizing the rights to water and sanitation for people with disabilities and challenging disability discrimination more broadly could significantly disrupt the vicious cycle of poverty and disability.

#### KEYWORDS

disability, water, sanitation and hygiene, policy, service delivery, Cambodia

## Introduction

### The global context

Access to safely managed water, sanitation and hygiene (WASH) services are essential for poverty reduction, health, and wellbeing. Yet worldwide, one in 10 people do not have basic drinking water, one in five people do not have basic sanitation, and almost one in three people are unable to wash their hands with soap and water at home (World Health Organization (WHO) United Nations Children's Fund (UNICEF), 2021).

An estimated 15% of the global population has a disability (World Health Organization, 2011). People with disabilities are less likely than people without disabilities to live in households that have access to basic water and sanitation services (United Nations Department of Economic Social Affairs, 2018). Analyses of intra-household access to these facilities across six countries show that people with disabilities are less able to collect water and use the household toilet independently and are more likely to contact urine and feces when using the toilet than family members without disabilities (Mactaggart et al., 2018, 2021; Banks et al., 2019). Despite limited access, people with disabilities often have additional requirements for WASH. For instance, in Vanuatu, people with disabilities are three times more likely than people without disabilities to experience urinary incontinence but less able to use the toilet or bathe as often as required (Mactaggart et al., 2021; Wilbur et al., 2021a).

Improving physical access to WASH services for people with disabilities is important, but it is only part of the solution. Ensuring the meaningful participation of people with disabilities, providing accessible information, engaging and supporting caregivers, integrating disability-related activities and indicators in WASH policies and guidance documents, and supporting professionals to implement and monitor these are equally important (Wilbur et al., 2021a). "Meaningful participation" means expressing one's views, which influence the

process of decision-making and the outcome (De Albuquerque, 2014).

These principles correspond to the "core concepts" of human rights, which are considered essential for universal, equitable, and accessible services within the EquiFrame policy analysis framework (Amin et al., 2011; Mannan et al., 2011). The EquiFrame is an analytical framework for assessing the commitment given to "vulnerable" groups and 21 core concepts of human rights in health policies (Mannan et al., 2011). The EquiFrame has also been adapted to focus on WASH, menstrual health, disability, and gender (Wilbur et al., 2019; Scherer et al., 2021). Core concepts of human rights, such as *Participation*, *Affordability*, *Access*, *Protection against harm*, and *Integration*, are included in or correlate to human rights principles in the United Nations Convention on the Rights of Persons with Disabilities (UNCPRD), and the criterion used to specify the rights to water and sanitation (Rapporteur, 2008).

### Disability and WASH in Cambodia

Cambodia's nationally-representative 2019 Demographic Health Survey (DHS), which incorporated the Washington Group Short Set questions, reported that 2.1% of the population age 5+ had a disability. The 2019 General Population Census reports a slightly lower prevalence of 1.2%, using the Washington Group Short Set. The census and the DHS found that the prevalence of disability increased with age and that people with disabilities face high levels of poverty and exclusion in several areas, including education and access to health services (United Nations Department of Economic Social Affairs, 2018; Palmer et al., 2019; National Institute of Statistics, Ministry of Planning, 2020).

The Joint Monitoring Programme (JMP) of the World Health Organization (WHO) and United Nations Children's

Emergency Fund (UNICEF) (2017) reports that 29% of Cambodia's population do not have access to basic water supply, 31% do not have basic sanitation, and 26% do not have basic hygiene (WHO, UNICEF, 2017). Evidence about access to WASH for people with disabilities in Cambodia is limited but suggests that this population faces barriers including affordability, distance to the water source and latrine, and inaccessible infrastructure (MacLeod et al., 2014; Dumpert et al., 2018).

## Commitments to progressively realizing the rights of persons with disabilities in Cambodia, including the rights to water and sanitation

The Royal Government of Cambodia has made significant efforts to progressively realize the rights of people with disabilities, including signing the UNCRPD in 2012 after ratifying it in 2017. The Government of Cambodia released the Cambodian Sustainable Development Goals (CSDGs) Framework in 2018, which explicitly includes people with disabilities in five targets and two indicators (Part 2: Target & Indicator Data Schedules) (Royal Government of Cambodia, 2018). In 2019, the Government launched its voluntary national review on the implementation of the CSDGs and marked that they were ahead of progress against two targets that referenced people with disabilities (Table 1 progress on CSDG) (Kingdom of Cambodia, 2019).

In 2009, the government adopted the 'Law on the Protection and Promotion of the Rights of Persons with Disabilities' (Kingdom of Cambodia, 2009) and introduced a monthly disability pension of 20,000 Riel (circa 5 USD), called Identification Card for Poor People ("IDPoor"), including people with severe disabilities living in poverty (Kingdom of Cambodia, 2011). The government also launched its National Disability Strategic Plan 2014–2018 and 2019–2023 (Royal Government of Cambodia, Disability Action Council, 2014, 2019) to improve the implementation of the National Disability Law and the CSDGs (Royal Government of Cambodia, 2014). This law included strategic objectives for equal access to clean water (1.4) and public toilets (8.1) (Royal Government of Cambodia, 2014); the National Disability Strategic Plan, 2019–2023 includes strategic objective 1.3.4 that ensures people with disabilities have access to affordable clean water services (Royal Government of Cambodia, Disability Action Council, 2019).

The Royal Government of Cambodia has made efforts to integrate disability within its WASH policies and guidance. For example, the National Strategy for Rural Water Supply, Sanitation and Hygiene (2011–2025) states that 'The needs of people with disabilities should be considered at all stages of the development process, including legislation, policies and

programs, in any area, at all levels' [page 9 (Royal Government of Cambodia, 2011)]. The government has adopted UNICEF's Three Star Approach for WASH in Schools (UNICEF, GIZ, 2013), whereby schools are awarded one to three stars if they progressively meet key minimum standards for "a healthy, hygiene-promoting school." Three stars are awarded to schools where WASH facilities meet national standards, including ensuring they are accessible for children with disabilities. The National Guidelines on WASH for Persons with Disabilities and Older People (Royal Government of Cambodia, 2017) supports the implementation of commitments made in the National Strategy, the Law on the Protection and Promotion of the Rights of Persons with Disabilities, and the CRPD.

## Mechanisms to implement national WASH policy commitments

The Government of Cambodia is implementing a decentralization strategy, which focuses on developing the operational capacity of districts, municipalities (urban) and provinces (rural) under the supervision of national authorities (Royal Government of Cambodia, 2010). Commune councils (the lowest administrative level) are responsible for improving access to public services (including WASH, health services, and education), promoting social and economic development, and seeking funds for development projects (Ninh and Henke, 2005). Development priorities are set out in 5-year Commune Development Plans and annual Commune Investment Plans. Government officials, representatives of citizens, and civil society organizations, including Organizations of Persons with Disabilities, collaboratively develop these. Therefore, the commune plans are the vehicle to implement national-level commitments to disability-inclusive WASH.

## Purpose of the study

The country site was identified from a list of countries of interest to the funder, that WaterAid works in and has good connections with government ministries, departments, and officials, as well as a strong network of WASH and disability service providers. We also wanted to select a country where some progress had been made in progressively realizing the right to water and sanitation for people with disabilities, where stakeholders would be willing to apply the learning generated through this study into practice, and where similarities could be observed with other LMICs.

Through discussions with specialists at WaterAid and the LSHTM, we identified Cambodia because the government has shown commitment to progressively realizing the right to water

and sanitation for people with disabilities, demonstrated by laws, strategies, and guidelines referenced above. However, some gaps remain, including inadequate attention to hygiene behavior change, limited collaboration across WASH and disability sectors, and the perception that accessible WASH services are a “niche market” that diverts resources from large-scale sanitation efforts (Chenda Keo, 2014; MacLeod et al., 2014). Though limited evidence from other LMICs exists, an unpublished report of Malawi’s WASH policies and practices to understand the inclusion of people with disabilities shows that many included policies reflected the rights-based approach to disability, but this was not borne out in practice (Biran and White, 2022). An accompanying qualitative study that explored the barriers faced by people with disabilities in accessing WASH services in Malawi found that accessible WASH services at the household level were limited (White et al., 2016).

Malawi and Cambodia operate a decentralized policy implementation system, as do many other LMICs, including Bangladesh, Tanzania, Vanuatu, and Nepal.

In 2021, we completed an analysis of Cambodia’s WASH policies and guidance documents to assess the inclusion of disability rights using the EquiFrame policy analysis tool (Scherer et al., 2021). Findings show attention was given to 15 core concepts of human rights, including *Individualized Services*, *Participation*, *Family Resource*, and *Access* core concepts of human rights (Scherer et al., 2021). However, many included policies lacked clearly articulated actions to achieve these, leading the authors to conclude that policy implementation may fail to match stated aims.

The purpose of this study was to (1) explore the implementation of core concepts of human rights referenced in national WASH policies and guidance from the perspectives of national policymakers, local level implementers, service users with disabilities, and caregivers; (2) describe how these core concepts were implemented, highlighting any enablers and blockages, and (3) investigate how these efforts impact the WASH-related experiences of people with disabilities and their caregivers.

## Materials and methods

### Study design and research questions

This is a qualitative cross-sectional study in two provinces in Cambodia that aims to explore the implementation of core concepts of human rights through WASH service delivery efforts from the perspectives of policymakers, service providers, and intended service users. It uses respondents’ descriptions to assess this and the impact efforts have on the WASH-related experiences of people with disabilities and their caregivers.

This study has two interrelated research questions:

- 1) To what extent are the commitments to core concepts of human rights referenced in the Government’s national-level WASH policies and guidance implemented in the selected provinces by the sub-national government officials and service providers?
- 2) How does this implementation impact the experiences of people with disabilities and their caregivers?

The following five core concepts of human rights selected were either referenced highly in included policies or are integral to the WASH-related experiences of people with disabilities: *Individualized services*, *Entitlement and affordability*, *Participation*, *Family resource*, and *Access*. Table 1 presents these core concepts of human rights, indicators we used to explore if these core concepts referenced in WASH policies were implemented in the two provinces, and the source of evidence.

### Study site

The study was conducted in selected urban and rural communities in the Svay Reing, and Kampong Chhnang Provinces. The 2014 Cambodia Demographic and Health Survey reported that 1.5% and 1.6% (respectively) of the population in these provinces have a disability (National Institute of Statistics, Directorate General for Health, ICF International, 2015). In the Svay Reing Province, 98% of the population has access to basic water and 92% has access to basic sanitation. This corresponds to 77% and 68% respectively in Kampong Chhnang (National Institute of Statistics, Ministry of Planning, 2020). No data on handwashing facilities at homes exist in either province. These provinces were selected because WaterAid is currently implementing the National Guidelines on Wash for Persons with Disabilities and Older People (Royal Government of Cambodia, 2017) in partnership with the national and sub-national governments and Organizations of Persons with Disabilities (OPDs) in Kampong Chhnang and Svay Reing. WaterAid also has a wide network of organizations in these provinces as it has worked with over 24 partners, including the Provincial government, civil society organizations (CSOs), OPDs, and private sector organizations over the past 5 years. Furthermore, WaterAid is committed to working in these provinces for the next 5 years, so will be able to integrate learnings from this study in their ongoing work.

### Study population and sampling

We selected seven national and sub-national government officials and 10 service providers working in Phnom Penh, Svay Reing and Kampong Chhnang, 16 women and men with disabilities, and four female caregivers living in

**TABLE 1** Study indicators showing that policy commitments to core concepts are being implemented and the source of that evidence.

Core concept of human right	Indicators that policy commitments to core concepts are being implemented	Source of evidence
Individualized services	<ul style="list-style-type: none"> <li>• People with disabilities, regardless of impairment experienced, can collect water, use toilet, bathing shelter independently or with support of caregivers in public and private settings</li> </ul>	Interviews with people with disabilities and caregivers
Entitlement and affordability	<ul style="list-style-type: none"> <li>• People with disabilities or caregivers receive subsidies constructing accessible water points, toilets, bathing, and/or handwashing facilities</li> <li>• People with disabilities or caregivers can afford to make WASH services accessible at home, or have received support to do so</li> <li>• People with disabilities receives a subsidy for WASH services, or are able to use public WASH services at a reduced rate</li> <li>• Service providers understand the cost of accessible WASH services</li> <li>• Sub-national government staff understand the cost of accessible WASH services, can budget for these, and have received funds for implementation</li> <li>• National and sub-national WASH budgets include resources for accessible public WASH services</li> </ul>	<p>Interviews with people with disabilities and caregivers</p> <p>Interviews with service providers (disability and WASH)</p> <p>Interviews with sub-national government officials</p> <p>Interviews with national and sub-national government officials</p>
Participation	<ul style="list-style-type: none"> <li>• People with disabilities have been invited to and have attended community meetings about WASH; they have spoken, been listened to, and their opinions have influenced decision-making</li> <li>• OPDs are invited to and have attended WASH meetings at the national and sub-national levels; they have spoken, been listened to, and their opinions have influenced decision-making</li> <li>• WASH and disability service delivery organizations have collaborated to improve WASH access for people with disabilities</li> <li>• OPDs or disability service providers are invited to and have attended WASH meetings at the sub-national levels and their opinions have influenced decision-making</li> <li>• Disability organizations and interest groups are involved in the development of WASH related policies</li> <li>• Disability organizations and interest groups are invited to and have attended WASH meetings (e.g., national WASH working group meetings) at the national levels and their opinions have influenced decision-making</li> </ul>	<p>Interviews with people with disabilities and caregivers</p> <p>Interviews with service providers</p> <p>Interviews with service providers</p> <p>Interviews with sub-national government officials</p> <p>Interviews with national government officials</p>
Family resource	<ul style="list-style-type: none"> <li>• Caregiver uses assistive devices (e.g., commodes, bedpans, lifting devices) to support WASH caregiving tasks</li> <li>• Caregivers have received support from organizations to understand how to provide WASH support to people with disabilities</li> <li>• Caregivers are included as target groups in WASH or disability programmes</li> <li>• The import role of caregivers in supporting WASH for people with disabilities is recognized</li> </ul>	<p>Interviews with caregivers</p> <p>Interviews with service providers</p> <p>Interviews with national and sub-national government officials</p>
Access	<ul style="list-style-type: none"> <li>• People with disabilities and caregivers can access and understand information about how to make WASH services accessible</li> <li>• People with disabilities and caregivers know how to make household WASH services accessible</li> <li>• People with disabilities access WASH services in public settings (e.g., at work, town, temple)</li> </ul>	Interviews with people with disabilities and caregivers

(Continued)

TABLE 1 (Continued)

Core concept of human right	Indicators that policy commitments to core concepts are being implemented	Source of evidence
	<ul style="list-style-type: none"> <li>• Service providers provide information on inclusive WASH in accessible formats (e.g., Braille, pictorial, use of sign language, captioned media)</li> <li>• Service providers visit people with disabilities and caregivers at home if they are unable to leave the house and provide information on inclusive WASH</li> <li>• Sub-national government staff have received support (training, guidance) understand the importance of inclusive WASH and how to ensure people with disabilities gain access to WASH services</li> <li>• WASH data is disaggregated by disability at the sub-national level</li> <li>• Sub-national government staff report progress on accessible public WASH services to national government</li> <li>• National government staff have received support (awareness raising, training, guidance) understand the importance of inclusive WASH and how to ensure people with disabilities gain access to WASH services</li> <li>• Disability specialists are involved in the development of WASH related policies</li> <li>• WASH data is disaggregated by disability at the national level</li> </ul>	<p>Interviews with service providers</p> <p>Interviews with sub-national government officials</p> <p>Interviews with national government officials</p>

the two provinces. [Table 2](#) presents details of the study population characteristics.

Replicating published methods used in Nepal ([Wilbur et al., 2021b,c](#)), we applied stratified purposive sampling ([Patton, 2002](#)) to select seven key informants to represent variation in seniority, geographic location, and sectors (health, education, WASH, and/or disability).

Key informants were identified through recommendations from WaterAid and the Cambodian Disabled People's Organization's (CDPO) networks as professionals with relevant knowledge of working in the WASH, health, education and disability sectors.

We purposively selected 16 individuals with disabilities from lists provided by sub-national OPDs that documented their members' (1) names, self-reported impairment experienced, age (18–65+ years), gender, and geographical location, and (2) names of caregivers who provide support to people with disabilities, gender, and geographical location. We aimed to achieve maximum heterogeneity by selecting 50% rural; 50% females with disabilities, impairment type, and province.

## Data collection methods

Data were collected through semi-structured interviews carried out by pairs of interviewers (one lead and one support). To comply with social distancing guidance in the COVID pandemic, interviews were conducted remotely, *via* internet videoconferencing (for government officials) or telephone (for people with disabilities and caregivers). All interviews were

conducted in Khmer, recorded on a voice recorder, and completed in 1 h or less.

Topic guides were prepared and used flexibly to explore core concepts of human rights with the study population. The topic guides for sub-national government officials, national government officials, disability service providers, WASH service providers, persons with disabilities, and caregivers are provided in [Supplementary materials 1–6](#), respectively.

Regarding safeguarding, an algorithm outlining referral options or actions to be taken in response to disclosures of violence was annexed to the topic guides (see [Supplementary materials 5, 6](#)). Furthermore, a key challenge related to remote data collection *via* the telephone is an inability to see participants' visual cues, which, as [Hensen et al. \(2021\)](#) note, may reduce understanding and appropriate prompting. Researchers managed this by actively listening for changes in participants' tone or prolonged pauses in the conversation, as these could be indicators of stress or distress. When incidences arose, researchers offered to pause, end or rearrange the interview for a later date.

## Data analyses

Data analyses were iterative. Recordings of interviews were translated and transcribed within 2 weeks of completing the interview so that data could be analyzed during collection. Transcripts were checked for accuracy by the interviewers; revisions were made before finalization.

Two authors thematically analyzed all transcriptions. This involved (1) familiarization with the data, (2) initial coding



TABLE 2 Study population characteristics.

Respondent type	Characteristics	N
National and sub-national Government officials	Government Ministry	
	Ministry of Health	4
	Ministry of Education, Youth and Sport	2
	Ministry of Rural Development	1
Service provider	<b>Location</b>	
	Phnom Penh	4
	Kampong Chhnang Province	2
	Svay Rieng Province	1
	<b>Organization type</b>	
	Organization of persons with disabilities	4
	International government organization	1
	Non-government organization	3
	Private sector	2
	<b>Location</b>	
	Kampong Chhnang Province	2
	Svay Rieng Province	2
	Both Provinces	6
People with disabilities	<b>Gender</b>	
	Female	8
	Male	8
	<b>Age group</b>	
	18–30	6
	31–64	8
	65+	2
	<b>Impairment type</b>	
	Visual	2
	Hearing	1
	Mobility	2
	Cognition	0
	Communication	1
	Multiple*	9
Female caregivers	<b>Location</b>	
	Kampong Chhnang Province	8
	Svay Rieng Province	8
	<b>Functional domain of the person with disabilities that the caregiver is supporting</b>	
	Visual	1
	Hearing	0
	Mobility	1
	Cognition	0
	Multiple*	2
	<b>Location</b>	
	Province 1	2
	Province 2	2

\*Multiple included more than one impairment type, and self-care limitations (e.g., cognition, communication, mobility, and limitations in washing, dressing, toileting).

according to pre-determined codes which reflected the issues explored in the topic guides (e.g., *Participation, Entitlement and Affordability, Access*), (3) iteratively identifying additional codes, (4) developing an analytical codebook to organize data for interpretation, (5) double-coding a small amount of data to refine the codebook content and ensuring coding template (O'Connor and Joffe, 2020), (6) coding all transcripts, (7) comparing researcher codes, discussing and agreeing on final codes, (8) reviewing the relationships between the codes and discussing analyses with the broader research team. Nvivo 12 was used to organize data and capture analyses. Quotes, codes, and high-level analysis of these quotes were captured in an excel spreadsheet.

## Informed consent process

At the start of the interview, the researchers sought informed consent from all participants. Information and consent sheets were emailed to government officials and service providers before the meeting, and written consent was sought. Verbal consent was sought from people with disabilities and caregivers over the telephone. The interview proceeded if consent was provided.

## The research team

The research team consisted of academics from the London School of Hygiene & Tropical Medicine (who remained in the UK for the study), WASH professionals working for WaterAid in Cambodia, a disability rights activist employed by CDPO, and a freelance researcher. The latter two have a disability.

One of the four-person team was an experienced qualitative researcher but limited WASH knowledge. The other team members were experienced in WASH but not qualitative methods. Therefore, the topic guides provided detailed guidance on what issues to explore during interviews. Additionally, the team met prior to interviewing key informants to identify any issues that were irrelevant to the participant's role and responsibilities.

Some key informants had previously interacted with WaterAid and CDPO. In these cases, a team member working for a different organization led the interview and reiterated confidentiality throughout the interview process to encourage honest answers.

## Ethics approval

The Research Ethics Committee provided ethical approval for the study at the LSHTM (reference: 17679-3) and the

National Ethics Committee for Health Research in Cambodia (reference: 160).

## Results

### Participation

At the national level, government officials regarded the participation of OPD staff with disabilities in WASH sector meetings as essential to ensure people with disabilities' requirements and priorities were reflected in WASH activities.

*"... if there are any [meetings] or events, we always invite people from all the backgrounds, especially the people with disabilities, to participate" (National government official).*

This quote demonstrates that the national government official thinks that participation of people with disabilities is desirable and inviting OPD staff to attend national WASH sector meetings is a means of achieving this. National-level OPD staff confirmed they had been invited to such meetings but sometimes lacked the time and space to engage effectively. Therefore, they prefer separate meetings where disability inclusion is discussed in more depth.

*"Normally, in a big meeting like that, the time is set, and we do not have enough time to voice our opinions. However, if we have a separate meeting for us [...] I think it seems-it's working better" (National level Organization of Persons with Disabilities).*

The following quote, given by the same national government official quoted above, highlights that they believe that people with disabilities participate in implementing WASH interventions at the sub-national level.

*"Any implementation plans require the participation of the sub-national level. Thus, if there are any conditions or events, we always invite [...] people with disabilities to participate in planning-as you already know, only the disabled people understand their needs. Only they know what they want. If we just prepare for them, it will not be right unless they have their own voice of what they want" (National government official).*

However, a government official at the sub-national level expressed a different perspective.

*"To be honest, on the provincial level, it is very rare to meet [people with disabilities]. There were never people with disabilities attending conferences or meetings" (Province government official).*

Sub-national OPD staff explained that they were sometimes invited to sub-national meetings to serve as representatives for the broader disability community. Some OPD staff noted that raising the requirements of people with disabilities at Commune Investment Plan meetings was difficult because meeting attendees expected the OPDs to solve the issues they raised. This was not possible, partly because the OPDs lacked the financial resources and influence. Further, some staff reported facing backlash from meeting attendees when voicing the needs of people with disabilities at sub-national planning meetings.

*"They talk with their group [...]: 'Every time she comes to the meeting there are always problems for [us] to solve with a lot of headaches and [we] cannot solve'. [...] They said that [...] So, they do not really want to see my face-do not really want to invite me to the meeting. [...]"*

*"We work without salary and we just raise the problems. It is too difficult. [...], too much headache. We do not even have the money for gas and people look down on us too. Do not even have the salary. It is hopeless" (Sub-national OPD staff member).*

Interviews with people with disabilities and caregivers revealed that very few respondents with disabilities had attended WASH meetings in their community. Barriers included never having been invited, difficulties reaching the meeting location, reliance on caregivers to take them to the meeting, that caregivers are not given financial assistance or transport to attend with the person with disabilities, and a lack of assistive devices (e.g., wheelchair) to support mobility. The latter was raised by many participants with disabilities and their caregivers as a significant barrier to leaving home. If these individuals were not visited in their homes, they were unable to participate:

*"The reason [I don't take him out of the house] is it is difficult to do so [...]. How can he go out when he cannot walk and sit? And, I cannot carry him out. [...] It is just that I take care of him. I bathe him, give him food, etc. No one brings him out. [...]"*

*"The reason [we have never gone to meetings on WASH] is we always stay home and never participated in anything. So, we do not know" (Caregiver of a man with a mobility impairment).*

A woman with a visual impairment expressed her loneliness because she could not leave her home and interact with others.

Participant: *"I never talk to anyone. I just stay at home like a frog in a well."*

Researcher: *"You only stay at home and cannot communicate with anyone?"*

Participant: *"Right, I have never been anywhere. I have blindness, so I cannot go anywhere."*

There was an example of a WASH organization and OPD co-leading a community WASH meeting and encouraging the meaningful participation of people with disabilities. A person with cognitive and mobility impairments and her caregiver attended this meeting. The caregiver noted how the two organizations spent time explaining information clearly to the person with disabilities.

*“They knew she was like this, so they paid attention to her. They explained to everyone, just focused on explaining to her clearer than to others” (Caregiver of a woman with cognitive and mobility impairments).*

## Individualized services, access, and entitlement and affordability

This section relates to people with disabilities access to accessible WASH services and information in schools and households. The ability to afford these services influences access for people with disabilities, so results related to these core concepts are discussed together.

Concerning access to accessible WASH services in schools, many key informants highlighted UNICEF’s Three Star Approach for WASH in Schools (UNICEF, GIZ, 2013) as an example of achieving this. For instance, a national government official explained progress in this area by citing data gathered through this approach.

*“We have seen that there are 77.4% of schools which, at least, has 1 star up to 3 stars. we have seen an increase of over 4% per year, which is something to be proud of” (National government official).*

Service delivery organizations also cited the Three Star Approach as an example of how their organization works toward ensuring children with disabilities have access to WASH in schools. These included participants who work for NGOs that do not specifically focus on disability but work with ‘vulnerable groups’.

*“Our goal is that every school that we build the toilets for, they must get three stars” (NGO staff member).*

At the household level, the following results indicate that policy commitments about improving access to affordable WASH services that everyone can use do not always lead to improvements for people with disabilities and their caregivers. For instance, most participants reported that they needed piped water, accessible toilets and bathing facilities, but very few could afford them, as expressed by a man with a mobility impairment:

Participant: *I want a bigger toilet so that the wheelchair can go in and stuff, but I do not have the money.*

Researcher: *I see. You do not install a railing?*

Participant: *No, where can I get the money for that when I do not have any money?*

Participants with disabilities rarely earned an income in the formal or informal sectors. If caregivers provided full-time support to individuals, they too could not work. The few families that received a cash transfer through “IDPoor” noted the challenges faced in accessing it, including physically getting a person with disabilities to the bank to have their photo taken and an inability to afford transport to the bank to collect payments.

Many participants had wells near their homes, so water quantity was not an issue for those who could collect water independently. However, few adaptations were made to make the waterpoint more accessible, such as leveling the path from the household to the well and building a ramp to the waterpoint to enable wheelchair access. Many people with mobility, cognition and visual impairments relied on others to collect their water and put it in a place they could easily locate and reach.

Few participants with disabilities could independently and safely access and use bathing and toilet facilities at home. Most did not know what adjustments could be made to make facilities more accessible, how to make them, or whom to talk to.

*“I do not know what we can do when he only has one hand and he is not strong enough. If I let him do it himself, I am afraid that he might fall” (Proxy interview with a caregiver of a man with a mobility impairment).*

There are examples of simple innovations to support access to WASH in households, developed by people with disabilities or their families. For instance, piping water to the bed for independent bathing or constructing a railing to guide a man with a visual impairment to a bathroom outside.

*“Even when I have a bit of diarrhea, I could get [to the toilet] faster too because I have what I have built for my needs. It is easy, not difficult at all (chuckles) Just hold the bamboos and walk along. I can walk quickly like people who can see. Nothing seems to be of obstacle for me” (Man with visual impairment).*

People with disabilities reported not bathing as often as they wished, especially those reliant on caregivers. One caregiver explained they cannot wash the person with disabilities as often as the rest of the family bathe “because I am busy and it is hard.” Caregivers

also expressed how vital keeping clean is for positive social interactions:

*“I want him to be clean so that others do not say that he is dirty and not good, and do not want to talk to or stay near him”* (Caregiver of a man with cognitive impairments).

## Family resource

WASH tasks completed by caregivers included collecting and storing water for the individual's bathing and drinking needs, which participants reported being time-consuming and physically demanding. Many caregivers support people to urinate and defecate by assisting them in reaching the toilet, supporting toileting in bed, and cleaning the body or clothing after urination or defecation.

Many caregivers provide full-time support to individuals without any training or guidance. They essentially developed their own care practices. Few had assistive devices, such as commodes or bedpans to support toileting, so caregivers and people with disabilities who could not sit out of bed unaided regularly came into contact with urine and feces. For instance, one caregiver of an individual who cannot sit out of bed unaided fashioned a hole in the person with disabilities' bed, so they could defecate there without having to be moved. The caregiver would then dispose of the feces.

No caregiver had assistive products, such as lifting devices, which would enable them to safely support the person with disabilities and with limited risk to themselves. Many caregivers explained how physically demanding it is to move people with mobility limitations, especially adults. Some caregivers, including one who had recently given birth, explained the WASH-related tasks performed and their concerns about how they will cope when the individual grows and gets heavier.

*“I am worried that when she gets older, it will be harder for me to lift her up [...]. “I lift her back and forth. She is not a small child. She is almost 20 kg; not small. Other people who just gave birth would not lift her like this, but if I do not do it, no one else would”* (Caregiver of a woman with a mobility impairment).

However, in interviews with government officials and service providers, only one OPD highlighted caregivers' critical role in supporting people with disabilities' WASH needs. None said they work to support caregivers to carry out this role.

## Discussion

This study explored the implementation of core concepts of human rights referenced in Cambodia's WASH policies and

guidance and the WASH-related experiences of people with disabilities and their caregivers in two provinces. The Three Star Approach to WASH in schools is a promising example of how policy commitments could be implemented if they include specific targets and if these are systematically delivered, monitored and reported on. However, most of this study's findings illustrate that the Government of Cambodia's policy commitments to progressively realize the rights of persons with disabilities to water and sanitation are not necessarily borne out systematically across national, sub-national, and household levels. Challenges include difficulties faced by OPDs in advocating for the rights of persons with disabilities to water and sanitation in provincial system planning meetings, inadequate access to assistive devices (e.g., wheelchair) and inaccessible terrain, meaning many people with disabilities were unable to leave home or reach the WASH meeting venue, and limited support provided to get people to the meeting and then participate meaningfully. People with disabilities in our sample have inadequate WASH services at home, and many participants relied on others to collect water and support access to latrines and bathing facilities. People with disabilities and caregivers cited an inability to afford accessible WASH services and a lack of information and knowledge about ways to improve access for people with disabilities. Many caregivers supported individuals in collecting water, bathing, and toileting, which they reported as physically demanding and time-consuming. Caregivers had no guidance about how to carry out the role, had few assistive devices (such as bedpans and commodes) or products (i.e., lifting devices), and key informants supported none to carry out this role.

## Participation

Existing evidence demonstrates that, if supported to participate effectively, OPDs can play an essential and positive role in furthering the rights of persons with disabilities (Young et al., 2016; Grills et al., 2020). Young et al. (2016) literature review about the roles and functions of OPDs in low- and middle-income countries found evidence that OPDs can have significant and positive outcomes for people with disabilities, especially in employment, participation in training interventions, accessing microfinance and bank loans and involvement in civil society. A randomized control trial that aimed to measure the effectiveness of OPDs in improving people with disabilities' wellbeing in India found positive correlations between OPD involvement and increased participation, access to services (including sanitation), and wellbeing of the study population (Grills et al., 2020).

However, many studies highlight less optimal involvement of OPDs in policy and practice processes, including a study which reviewed the OPDs' participation in Ghana's Disability Fund, which provides financial support to people

with disabilities through its decentralized political structures (Opoku et al., 2018). National Institute of Statistics, Ministry of Planning (2020) found that OPDs were not fully consulted in the allocation grants, even though they were for people with disabilities (Opoku et al., 2018).

Our study highlighted challenges related to the ability of OPDs to meaningfully participate in meetings for various reasons. For instance, OPDs were expected to solve issues facing people with disabilities that they raised and sub-national planning meetings, even though they are often under-resourced and regarded as having limited status. Findings from other studies in different settings similarly highlight that OPDs are increasingly engaged in or expected to engage in a wide array of activities, including service delivery roles typically performed by the state, often with limited financing (Young et al., 2016; Cote, 2020; Grills et al., 2020). This finding is also noted in a forthcoming study that analyses data from nine population-based surveys in LMICs, leading authors to conclude that people with disabilities may not be accessing public services as a result (Banks et al., 2020).

These challenges make it difficult for sub-national OPDs in our study to advocate for change and raise public awareness about disability rights, which is a core role of ODPs (Grills et al., 2020). If OPDs are not given more significant support and resources in Cambodia, there is a risk that they might either stop attending the meetings or advocating for people with disabilities. As the Government of Cambodia is ratified the UNCRPD, it should work toward achieving Article 29 of the UNCRPD (Office of the United Nations High Commissioner for Human Rights, 2008), which specifies that State Parties:

*“b) To promote actively an environment in which persons with disabilities can effectively and fully participate in the conduct of public affairs, without discrimination and on an equal basis with others, and encourage their participation in public affairs, including:*

*ii. Forming and joining organizations of persons with disabilities to represent persons with disabilities at international, national, regional and local levels.”*

In practice, this should include state actors and civil society's investment in OPD's long-term sustainability, including funding core costs, capacity enhancement, and, as Cote (Cote, 2020) recommends assisting the organization to diversify its funding base to ensure its autonomy and independence.

At the household level, people with disabilities and caregivers should be supported to attend WASH meetings in the community. For instance, transport could be provided to take people unable to leave home, or staff should visit these households so that all people can influence WASH-related decisions that will affect them. Information must be communicated in accessible formats, and people with disabilities should be given space and time to contribute their

opinions. Results from a cluster-randomized trial to evaluate the impact of an inclusive community-led total sanitation (CLTS) intervention in Malawi showed that people with disabilities were more likely to attend community meetings and construct or adapt household latrines, so they were accessible for people with disabilities in the intervention arm (Biran et al., 2018). Efforts which led to these results included training facilitators on inclusive implementation of CLTS (Biran et al., 2018). This involved awareness-raising on disability and the WASH requirements of people with disabilities, methods to ensure people with disabilities participate in decision making, techniques to make sanitation facilities accessible, how to provide accessible information, and conducting house-to-house visits for people unable to leave the home (Biran et al., 2018). An inability to leave home was a reality for many participants with disabilities in our study, suggesting that investing in visiting people in their homes is desirable.

## Individualized services, access, and entitlement and affordability

Access to accessible and affordable WASH in households, schools, public places, and workplaces is essential to participation. Our analysis of Cambodia's WASH policies and guidance (Scherer et al., 2021) indicated that the country's WASH in schools' policy commitments, targets and indicators related to disability are relatively strong (Scherer et al., 2021). The Three Star Approach for WASH in Schools (UNICEF, GIZ, 2013) appears to support monitoring the implementation of those commitments. This is because government officials and service providers, including those that do not explicitly focus on disability, are applying the tool and supporting schools to progress to the three-star status, which includes accessible latrines.

The Three Star Approach for WASH in Schools could potentially improve access to WASH services at school for children with disabilities who are in education. However, the Cambodian Demographic and Health Survey data, reported in the UN Disability and Development Report (United Nations Department of Economic Social Affairs, 2018), notes wide disparities in education for children with disabilities, whereby only 44% of children with disabilities completed primary education, compared to 73% of their peers without disabilities (United Nations Department of Economic Social Affairs, 2018). Such disparities, which increase from primary to secondary school, are evidenced in many other countries (Kuper et al., 2014; Mizunoya et al., 2018).

Our sampling was not intended to be statistically representative, so we could not meaningfully explore access to education and inclusive school WASH for participants with disabilities. However, we found that many people with



disabilities could not leave home because of a lack of assistive devices and inaccessible terrain. This is reflected in many other studies (Sheppard and Polack, 2018; Banks et al., 2019; Mactaggart et al., 2021), including a scoping review that explored the barriers and facilitators to participation for children and adolescents with disabilities in LMICs (Huus et al., 2021). Huus et al. (2021) noted inaccessible school facilities and transport, poor roads and infrastructure, negative teachers' attitudes, financial implications, and lack of access to assistive devices as barriers to participation, including education (Huus et al., 2021). Therefore, attention to and investment in making school WASH facilities physically accessible in Cambodia is one component of realizing Access, but more must be done. Resources must be allocated to ensure people with disabilities can access and use WASH facilities in or near the home.

The human rights framework state that water and sanitation must be affordable (not free), requiring a safety net for those who cannot afford to pay (full) costs' [p. 78 (De Albuquerque, 2014)]. Our study shows that many people with disabilities cannot afford to make household WASH facilities accessible and have no information about how to make low-cost adaptations to improve accessibility. As adults with disabilities are 50% less likely to be employed than adults without disabilities (World Health Organization, 2011), more significant efforts must be taken to support affordability for this population and increase awareness of low-cost household WASH technology options. Efforts should draw on Cambodia's National Guidelines on WASH for persons with disabilities and older adults, specifically the "accessible designs" sections for handwashing stations (page 31–32) and water supply (page 38–39) (Royal Government of Cambodia, 2017), as well as resources for other resource-poor settings (Jones and Wilbur, 2014; Government of India, Ministry of Drinking Water and Sanitation SBMG, 2015; Coultas et al., 2020). Service providers should systematically disseminate information through national WASH working group and Commune Investment Plan meetings, mass media campaigns *via* radio, television, and print, through visiting people with disabilities and their caregivers at home and community WASH meetings.

## Family resource

Caregivers are vital to enabling people with disabilities who need assistance to meet their WASH needs and participate in daily life. Still, our policy analysis and this study highlight that caregiver's role is underappreciated within Cambodia's WASH policies, guidance or implementation (Scherer et al., 2021). This absence has several vital impacts. Firstly, when caregivers are not supported to understand how to provide WASH care hygienically and with dignity and do not have access to assistive devices to help toileting (such as lifting devices, commodes, and bedpans), their own mental and physical health and wellbeing

suffer, as well as that of the individual they support. Similar impacts are observed in Pakistan, Vanuatu, Nepal, India, and Malawi, where some caregivers reported that providing long-term care can be rewarding but also that it incurs physical and psychological impacts (White et al., 2016; Ansari, 2017; Thapa and Sivakami, 2017; Wilbur et al., 2021a,c). Consequently, some people with disabilities were neglected, physically and verbally abused, ashamed, and socially isolated (White et al., 2016; Ansari, 2017; Thapa and Sivakami, 2017; Wilbur et al., 2021a,c,d). Across all settings, individual innovations to make WASH more accessible exist, but organized support is absent. Secondly, if caregivers who provide full-time support are not resourced to attend meetings, they must incur additional financial costs. It is likely that the household already experiences income poverty, so not facilitating attendance risks excluding these families from WASH meetings.

## Bringing it all together

Our findings show that implementing disability-inclusive policy commitments may be possible if clear and consistent steps to achieve these are identified and service delivery organizations systematically work to realize them. However, efforts must be taken to support OPDs to advocate for disability rights at WASH sector meetings and invest in OPDs' long-term sustainability and capacity enhancement. At the commune and household level, greater support is required to enable people with disabilities and families to attend and meaningfully participate in WASH meetings, access to WASH facilities at home that can be used as independently as possible, as well as assist caregivers in their role to support WASH for people with disabilities.

Finally, our findings show that people with disabilities face discrimination in many areas of their life, including accessing WASH services. Discrimination experienced in areas such as health services, including assistive devices, education, and employment, can all impact a person's access to WASH services. Therefore, improving access to WASH services must be considered within the broader context. WASH sector professionals must connect with disability service providers and rights organizations to challenge disability discrimination more broadly. For example, WASH and disability service providers should collaborate to support livelihood programmes for people with disabilities to finance adjustments to make WASH services accessible and provide accessible information about such adaptations. They must also coordinate efforts to improve access to assistive devices and products to enable people with disabilities to reach WASH facilities and caregivers to support toileting and bathing more safely. In conclusion, a more comprehensive approach to progressively realizing the rights to water and sanitation for people with disabilities could significantly disrupt the vicious cycle of poverty and disability.

## Study strengths and limitations

A key strength of this study was that results from our previous policy analysis (Scherer et al., 2021) fed into identifying issues to explore, developing topic guides, and analyzing this study's findings. Data collection was conducted by Cambodians with and without disabilities with professional experience in WASH, disability, and qualitative research methods. The study population was comprehensive as we interviewed a range of key informants from the national and district level, women and men with various impairments, and their caregivers.

Several limitations must be considered when interpreting these results. The COVID-19 pandemic meant we could not generate data in person and had to conduct interviews over the phone or online. This may have limited the rapport researchers could develop with participants and meant that we could not carry out methods triangulation. Some key informants knew the organization the researchers worked for, which could have influenced their responses. This was managed by reiterating confidentiality and anonymity of responses during the interview.

## Data availability statement

The original contributions presented in the study are included in the article/Supplementary material, further inquiries can be directed to the corresponding author.

## Ethics statement

The studies involving human participants were reviewed and approved by London School of Hygiene and Tropical Medicine (UK) and National Ethics Committee for Health Research (Cambodia). The participants provided their written informed consent to participate in this study.

## Author contributions

JW: literature search, study conceptualization, study design, data collection oversight, verification of underlying data, data analysis, data interpretation, and manuscript writing. PP, RH, and SN: data collection oversight, data analysis, data interpretation, and manuscript review. CH, LB, NS, and AB: data interpretation and manuscript review. All authors contributed to the article and approved the submitted version.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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## Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/frwa.2022.963405/full#supplementary-material>

### SUPPLEMENTARY MATERIAL 1

Topic guides for sub-national government officials.

### SUPPLEMENTARY MATERIAL 2

Topic guide for national government officials.

### SUPPLEMENTARY MATERIAL 3

Topic guide for disability service providers.

### SUPPLEMENTARY MATERIAL 4

Topic guide for WASH service providers.

### SUPPLEMENTARY MATERIAL 5

Topic guide for people with disabilities.

### SUPPLEMENTARY MATERIAL 6

Topic guide for caregivers.

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# Erratum: A qualitative cross-sectional study exploring the implementation of disability-inclusive WASH policy commitments in Svay Reing and Kampong Chhnang Provinces, Cambodia

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Due to a production error, a section of text in the **Abstract** of this article was written incorrectly. The corrected sentence reads: “Caregivers had no guidance about how to carry out the role and few had assistive devices (e.g., commodes, bedpans) or products (i.e., lifting devices), so supporting WASH for people with disabilities was physically demanding and time-consuming.” This sentence replaces the incorrect version, which said “Caregivers had guidance about how to carry out the role and few had assistive devices (e.g., commodes, bedpans) or products (i.e., lifting devices), so supporting WASH for people with disabilities was physically demanding and time-consuming.”

The publisher apologizes for this mistake. The original article has been updated.





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# The inclusion of disability within efforts to address menstrual health during humanitarian emergencies: A systematized review

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**Introduction:** Women and girls with disabilities may be excluded from efforts to achieve menstrual health during emergencies. The review objectives were to (1) identify and map the scope of available evidence on the inclusion of disability in menstrual health during emergencies and (2) understand its focus in comparison to menstrual health for people without disabilities in emergencies.

**Methods:** Eligible papers covered all regions and emergencies. Peer-reviewed papers were identified by conducting searches, in February 2020 and August 2021, across six online databases (PubMed, MEDLINE, EMBASE, Global Health, ReliefWeb, and Cinahal Plus); gray literature was identified through OpenGrey, Gray Literature Report, Google Scholar, and Million Short. Eligible papers included data on menstrual health for women and girls with and without disabilities in emergencies.

**Results:** Fifty-one papers were included; most focused on Southern Asia and man-made hazards. Nineteen papers contained primary research, whilst 32 did not. Four of the former were published in peer-reviewed journals; 34 papers were high quality. Only 26 papers mentioned menstrual health and disability in humanitarian settings, but the discussion was fleeting and incredibly light. Social support, behavioral expectations, knowledge, housing, shelter, water and sanitation infrastructure, disposal facilities, menstrual material availability, and affordability were investigated. Women and girls with disabilities rarely participated in menstrual health efforts, experienced reduced social support, and were less able to access water, sanitation and hygiene facilities, including disposal facilities. Cash transfers and hygiene kit distribution points were often inaccessible for people with disabilities; few outreach schemes existed. Hygiene kits provided were not always appropriate for people with disabilities. Caregivers (all genders) require but lack guidance about how to support an individual with disabilities to manage menstruation.

**Conclusion:** Minimal evidence exists on menstrual health and disabilities in emergencies; what does exist rarely directly involves women and girls with disabilities or their caregivers. Deliberate action must be taken to generate data about their menstrual health requirements during humanitarian crises and develop subsequent evidence-based solutions. All efforts must be made in meaningful participation with women and girls with disabilities and their caregivers to ensure interventions are appropriate.

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#### KEYWORDS

disabilities, menstrual health, emergencies and disasters, humanitarian, caregivers

## Introduction

At the end of 2020, 82.4 million of the global population (1 in 95 people) were forcibly displaced due to conflict, violence, and natural disasters (The UN Refugee Agency, 2021). An estimated 10.3 million of those were people with disabilities, which means a “long-term physical, mental, intellectual or sensory impairments which, in interaction with various barriers, may hinder their full and effective participation in society on an equal basis with others” (Office of the United Nations High Commissioner for Human Rights, 2008; World Health Organization World Bank, 2011).

A recent population-based survey of Syrian refugees living in Istanbul found that 25% of the population have a disability, and 60% of households included at least one person with disabilities (Polack et al., 2021). These data indicate that more people with disabilities may be affected by emergencies than previously estimated.

Humanitarian crises, such as conflict, can also generate trauma and injuries, which can result in disabilities (World Health Organization World Bank, 2011). People with disabilities face inequalities in accessing healthcare services, education, and employment because of informational, attitudinal, accessibility, and financial barriers faced (Mitra et al., 2013; Mactaggart et al., 2018; Kuper and Heydt, 2019). These inequalities can be exacerbated during crises (United Nations General Assembly, 2016). For instance, morbidity rates of people with disabilities are up to four times higher than those without disabilities (United Nations Economic Social Commission for Asia the Pacific, 2015), and 60% of COVID-19 deaths in the UK were amongst people with disabilities, even though they make up 17% of the population (Glover and Public Health England, 2020; Kuper et al., 2020). Humanitarian and basic human rights principles require assistance to be provided without discrimination (Office of the United Nations High Commissioner for Human Rights, 2008; CBM International HelpAge International, 2018; Sphere, 2018; United Nations

Human Rights Office of the High Commissioner for Human Rights, 2021). Yet efforts to ensure the inclusion of people with disabilities in humanitarian efforts are limited (Robinson et al., 2020). A recent review of international guidance on water, sanitation and hygiene (WASH) responses during the COVID-19 found that one-third did not include any references to the rights of people with disabilities, and the majority of references were made in one guidance document (Scherer et al., 2021a).

People with disabilities in humanitarian crises may experience multiple forms of discrimination including, gender, impairment, and age (Crenshaw, 1991; McCall, 2005). For instance, women with disabilities are at heightened risk of sexual violence during emergencies (UN Committee on the Rights of Persons With Disabilities, 2016; Barrett and Marshall, 2017). Women and girls with disabilities also have gender-specific needs, such as menstrual health. Globally, an estimated 190 million people with disabilities rely on informal and professional caregivers for assistance (World Health Organization, 2021), so many women and girls with disabilities in humanitarian crises may be dependent on others to support their menstrual health.

Menstrual health is defined as a “state of complete physical, mental, and social wellbeing, and not merely the absence of disease or infirmity, in relation to the menstrual cycle” (Hennegan et al., 2021). Menstrual health includes having clean and affordable menstrual material, facilities to change and dispose of the material hygienically and privately, access to soap and water to wash the body and menstrual material used. It also means understanding what menstruation is, how to manage it hygienically, having access to diagnosis and treatment for menstrual-related disorders, and a positive environment free from menstrual-related stigma and discrimination. Women and girls in low-and middle-income countries face numerous challenges managing menstruation hygienically and with dignity (Hennegan et al., 2019). Evidence shows that inadequate menstrual health impinges education attainment (Sommer, 2010; Phillips-Howard et al., 2016; Miirio et al., 2018), gender

equality (Winkler and Roaf, 2015; Caruso et al., 2017), health and wellbeing (Crichton et al., 2013; Mason et al., 2013).

In humanitarian crises, menstrual health challenges can be heightened. For instance, women and girls may flee their home without menstrual materials (e.g., disposable or reusable pads, cloth, underwear), they may live in settlements without safe and private water points, latrines or bathing shelters where they can wash their bodies, and change, wash or dispose of menstrual materials (Phillips-Howard et al., 2016; Schmitt et al., 2021). In crises, women and girls from diverse socio-cultural and economic backgrounds may live together in host communities, camps or informal settlements. Women and girls might believe that they should live separately from men and boys whilst menstruating, and dispose of used menstrual materials, or dry reusables in private where men and boys cannot see them (Sommer, 2012; De Lange et al., 2014; Phillips-Howard et al., 2016). The humanitarian emergency may disrupt these practices, causing psychological stress, so humanitarian responses must take these preferences into account when designing menstrual health interventions. They must also cover a range of sectors, including water, sanitation and hygiene (WASH), sexual and reproductive health and rights, women and child protection, education and shelter because facilitators for menstrual health are included in these areas (Phillips-Howard et al., 2016). Furthermore, the response phase (e.g., search and rescue, emergency relief, early recovery, medium to long-term recovery and community development) (Crutchfield, 2013) as well as the type of emergency, determine the required menstrual health response (Sommer et al., 2016; Sphere, 2018).

Little evidence exists in the literature about the challenges that women and girls with disabilities face in humanitarian crises and no prior evidence syntheses exist on the topic. However, data from non-emergency settings in Vanuatu show that harmful menstrual beliefs affect all women and girls who menstruate, but when disability and menstrual-related discrimination overlap, they further entrench existing inequalities (Scherer et al., 2021b). For instance, inaccessible water and bathing facilities, and socio-cultural expectations that women and girls must manage menstruation independently, resulted in heightened pain, discomfort, and a lack of safety during menstruation, especially for people with mobility limitations and people who are reliant on caregivers. A systematic review on menstrual health and disability noted that people with mobility limitations found menstrual materials uncomfortable and difficult to use; information on menstruation is withheld from people with intellectual impairments who are at risk of sterilization, partly because caregivers wish to cease menstruation (Wilbur et al., 2019a). Caregivers were given no support or guidance to carry out menstrual care tasks hygienically and with dignity (Wilbur et al., 2019a).

This systematized review had two interrelated objectives: to (1) identify and map the scope of available evidence on the inclusion of disability in menstrual health during emergencies

and (2) understand its focus in comparison to efforts to improve menstrual health for people without disabilities in emergencies.

Grant and Booth (2009) define a systematized review as including some, but not all elements of the systematic review process. Due to the paucity of literature in the field, we were unable to apply a standardized reference scale to assess the quality of included papers, which is recommended when conducting a systematic review (Higgins et al., 2019). Instead, we drew on 20 years' experience in the field and knowledge of existing similar literature to construct a simple rating scale which aims to assess the quality of the papers included (see Section Quality assessment).

Throughout the article, we refer to “women and girls” to increase readability, but the authors recognize that menstrual health is relevant for everyone who menstruates, regardless of gender identity.

## Materials and methods

A review protocol is registered online with PROSPERO; registration number: PROSPERO CRD42021250937.

### Search strategy and selection criteria

The search strategy was designed to identify peer-reviewed and gray literature which explored menstrual health for people with and without disabilities in emergency settings. The review covered all countries and languages and did not set a date limit, to ensure the widest range of papers could be identified.

Searches were conducted in February 2020 and repeated in August 2021 to ensure any guidance produced during COVID-19 was identified. Six online databases were used: PubMed, MEDLINE, EMBASE, and Global Health through Ovid SP, ReliefWeb, and Cinahal Plus. A comprehensive search of gray literature was conducted using OpenGrey, Gray Literature Report, Google Scholar, and Million Short. Additional papers were identified by reviewing references of included papers and contacting humanitarian relief organizations that deliver WASH interventions, including menstrual health interventions. When papers were not available online, authors were contacted and asked for the full text.

Search terms were created to capture three main concepts: disability, menstruation, and humanitarian crises. Disability included specific impairments and broad assessments (e.g., self-reported activity or functional limitations). Humanitarian crises included: Geophysical, Meteorological, Hydrological, Climatic events, Biological, Man-made hazards, and Complex emergencies resulting from a combination of hazards. [Supplementary Table S1](#) includes the search string for PubMed.

TABLE 1 Socio-ecological framework for menstrual hygiene management, adapted for disability compared to the integrated model of menstrual experience.

Socio-ecological framework for MHM, adapted for disability (Wilbur et al., 2019a)		Integrated model of menstrual experience (Hennegan et al., 2019)	
Factors that support MHM	Outcomes	Antecedents	
Societal and government policy factors	Policies, strategies and curriculum; training standards and practices; traditional norms, practices and cultural beliefs	Socio-cultural context: menstrual stigma, gender norms	Behavioral expectations: enforced by others and self
Environmental and resource availability factors	Water and sanitation facilities including for solid waste management; availability of affordable, usable and culturally appropriate sanitary protection materials	Resource limitations	Physical environment: water, sanitation facilities and infrastructure, disposal facilities Economic environment: product affordability and availability
Interpersonal factors—person with disabilities	Relationship with family, caregiver (family and/or professional); relationships with healthcare workers, teachers and other people in authority; relationships with peers; perceptions of changes in gender roles post-menarche	Socio-cultural context: menstrual stigma, gender norms	Social support: family, friends, teachers, healthcare workers Behavioral expectations: enforced by others and self
Interpersonal factors—Caregiver	Relationship with family, the person with disabilities; relationships with healthcare workers and other people in authority; relationships with the wider community; perceptions of changes in gender roles post-menarche		
Personal factors—person with disabilities	Knowledge about the biology of menstruation and MHM, information on menstruation and MHM; skills in coping and behavioral adaptations (including pain relief); attitudes, beliefs and feelings about menstruation (including sterilization/long-term contraception); ability to manage menstruation independently, and support required		Social support: family, friends, teachers, healthcare workers Knowledge: menstrual biology, reproduction, accuracy of taboos, practical management
Personal factors—Caregiver	Knowledge about the biology of menstruation and MHM, information on menstruation and MHM; skills in coping and behavioral adaptations (including pain relief); attitudes, beliefs and feelings about menstruation (including sterilization/long-term contraception); ability to manage another person's menstruation independently, support required and care tasks related to MHM		
Biological factors	Menstrual variations due to age and features of menstrual cycle (regular, irregular, heavy, light) and any other biological changes related to menstruation; intensity of menstruation (pain) and influences on behavior, health and concentration; biological issues that impact on MHM, such as incontinence	Socio-cultural context: menstrual stigma, gender norms	Knowledge: menstrual biology, reproduction, accuracy of taboos, practical management

## Inclusion/exclusion criteria

Eligible papers were in the gray literature or published in a peer-reviewed journal, included primary research, academic papers including theses, dissertations,

and research reports, ongoing research, conference papers, organizational strategies, reports, guidance, blogs, and government reports. No exclusion criteria were set for the publication date, world region or language.

Eligible participants were women and girls with and without disabilities who menstruate, and caregivers who support individuals with disabilities with their menstruation. WASH interventions that aimed to improve menstrual health in humanitarian settings qualified. Comparisons were made between menstrual health efforts that did and did not consider disability.

Relevant outcomes included the ability to access supportive facilities to manage menstruation, use and preference of menstrual materials, menstrual-related challenges experienced and coping strategies applied during humanitarian crises.

## Study selection and data extraction

Two authors conducted the database searches. All records retrieved were exported to EndNote version X9, and duplicates were removed. Three authors independently screened titles and abstracts against the eligibility criteria, noting the rationale for inclusion/exclusion decisions for all records retrieved. Full-text papers were sourced for independent screening by two authors. Any discrepancies were discussed and resolved, with a third reviewer's opinion being sought where necessary.

Data were extracted from identified papers using pre-designed tables based on the socio-ecological framework for menstrual hygiene management (MHM), adapted for disability to allow comparison across papers (Wilbur et al., 2019b). Table 1 presents the framework and incorporates the integrated model of menstrual experience, published by Hennegan et al. (2019). In this article, findings are presented against the latter, firstly for women and girls without disabilities and then with disabilities to enable comparison.

Data were extracted into Microsoft Excel against the factors that support MHM (Table 1) and the following: (1) paper details: author/s, year, title, (2) study location: World Bank region—low, middle or high-income country, country name, rural and/or urban, (3) humanitarian crisis type: geophysical, hydrological, climatic events, biological, man-made hazards, complex emergencies, (4) methods: study design, (5) participants: source of participants (household, camp, hospital, organization), disability type (e.g., sensory, mobility, cognition, communication), means of assessing disability (self-reported, clinical, government or organization list), caregiver type (family member, professional), sample size, (6) definition of menstrual health or measurement criteria, (7) quality assessment.

A narrative synthesis of extracted data is presented in this article. As study designs varied considerably, a meta-analysis was not conducted.

## Quality assessment

The quality of the papers was assessed using two different sets of criteria. The guideline, strategy or policy papers were

assessed against six criteria: explanation of context with clear aims and objectives; aims and objectives supported by the data; inclusion of the perspectives of participants (people with disabilities, organizations of persons with disabilities); consultation with organizations of persons with disabilities (OPDs) or experts during the development of the document; stakeholder involvement; and use of humanitarian standards as a framework. Papers scoring 4–6 were counted as high quality, papers scoring 2–3 were judged as medium quality, and papers scoring 0 or 1 were low quality.

For the other types of paper (primary research, published protocols, literature review/systematic review, journalistic articles or conference presentation), the following six criteria were used: details of sampling strategy provided; details on methods provided; humanitarian actors included; people receiving humanitarian assistance included; people with disabilities or caregivers included; results demonstrably backed by data, either by using case studies or summaries of responses. Once more, papers scoring 4–6 were rated as high quality, papers scoring 2–3 as medium quality, and papers scoring 0 or 1 as low quality. Supplementary Table S2 presents a summary of the quality of included papers.

## Results

### Study selection and characteristics

The review flowchart is presented in Figure 1.

### Description of papers

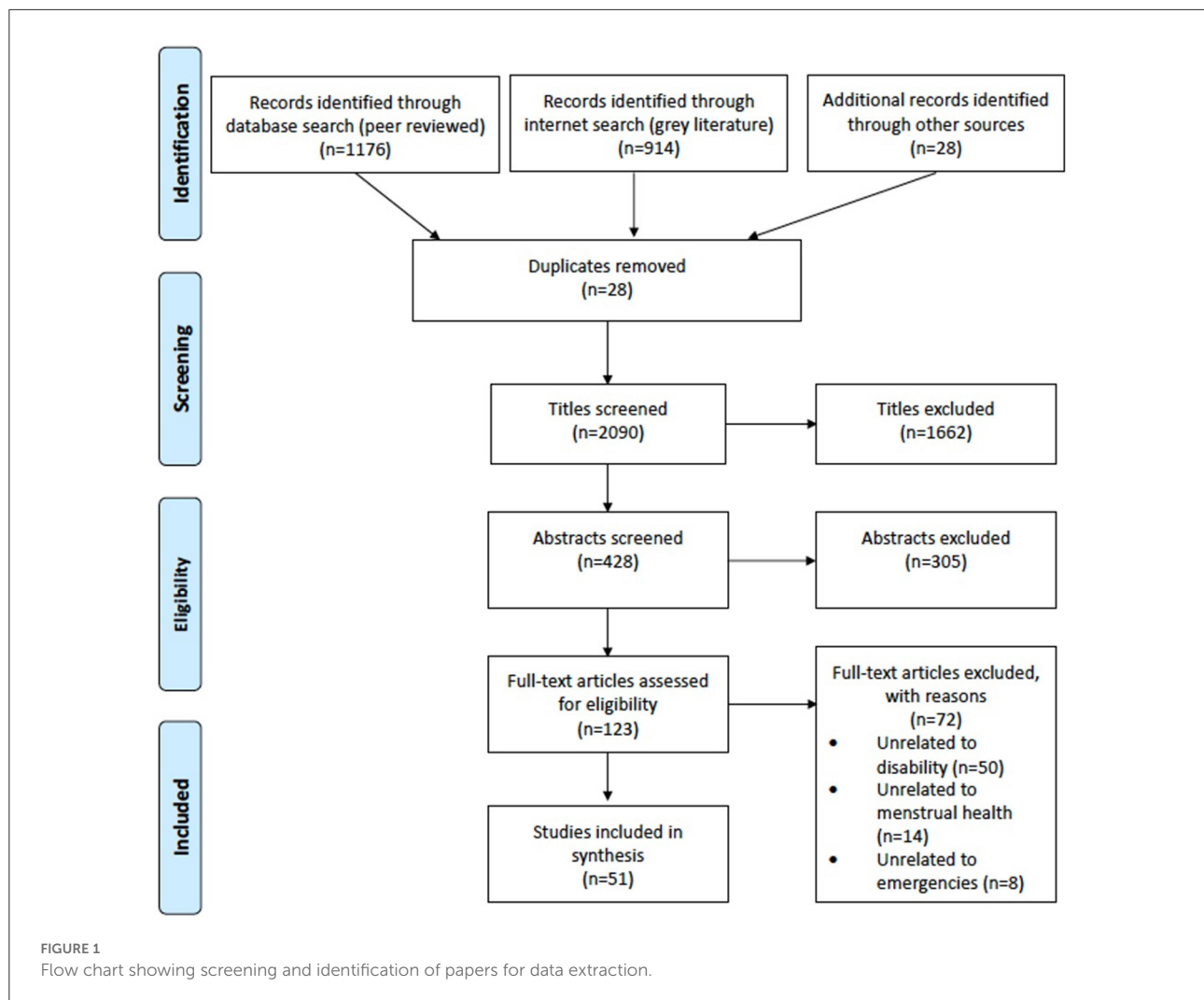
A total of 51 papers were selected for data extraction using the criteria described in Methods (study selection and data extraction). Table 2 shows the publication characteristics of the 51 papers.

Table 2 describes the 51 papers included in the review. Eight of the 51 papers (16%) were published in peer-reviewed journals or had been peer-reviewed prior to publication. These included four papers containing primary research, three literature reviews or systematic reviews, and one meeting report (classified with the literature and systematic reviews).

Due to the predominance of gray literature as a source in our review, papers reporting the results of primary research did not necessarily contain descriptions of the methodologies used, or any quantification of findings. The primary research ranged from interviews with displaced people (Human Rights Watch, 2017) to training projects for actors in humanitarian settings (Phillips-Howard et al., 2016), to purposively sampled key informant interviews synthesized with results from focus groups and literature reviews (Brown et al., 2012).

In the 51 papers, menstrual health and disabilities were discussed with varying degrees of detail. Twenty-six (51%)





discussed menstrual health and disability in humanitarian settings; however, some of these discussions were very brief, acknowledging the issues but not providing any depth of discussion. Seventeen of these 26 papers (65%) papers discussed issues of disability in humanitarian settings, and issues of menstrual health in humanitarian settings, but not the overlap between these the two. The remaining 25 papers (49%) discussed either menstrual health or disability, with the other mentioned in passing (Brown et al., 2012; Reed and Coates, 2012; Sthapit, 2015; Ndlovu and Bhala, 2016; Sommer et al., 2016, 2018; Fisher et al., 2017; Human Rights Watch, 2017; D'Mello-Guyett et al., 2018).

For the eight peer-reviewed studies, four (Reed and Coates, 2012; Ndlovu and Bhala, 2016; Sommer et al., 2016, 2018) contained primary research. The other four (Sthapit, 2015; Fisher et al., 2017; D'Mello-Guyett et al., 2018) were literature reviews, systematic reviews or meeting reports.

Of the 51 papers, 34 (67%) were assessed as high quality and 14 (27%) as medium quality. Across the “type of paper”, the

literature reviews and systematic reviews scored high on quality. Comparatively, the primary research scores less on quality, with 15 (79%) high quality and four (27%) medium quality. Of the eight peer-reviewed papers, two (25%) scored high quality and six (75%) medium quality. Table 3 provides a summary of quality assessment by type of paper. Supplementary Table S3 presents a summary of the results of individual papers.

## Limited consultation with people with disabilities

In general, people with disabilities were rarely consulted in the preparation of reviews about menstrual health. Of the 35 papers that were not guidelines, strategies or policy papers (see Table 2), seven consulted people with disabilities or caregivers (UNICEF, 2016; Humanitarian Response, 2020). Nine of the 16 papers that were guidelines, strategies, or

TABLE 2 Year of publication, region and type of crisis for the 51 included papers.

Characteristic	Category	Number of papers (%)
Type of paper	Primary research (Reed and Coates, 2012; Shah, 2012; Bastable and Russell, 2013; House, 2013; van der Gaag, 2013; International Medical Corps, 2014; Mena, 2015; Giardina et al., 2016; Ndlovu and Bhala, 2016; Sommer et al., 2016, 2018; Abu Hamad et al., 2017; Ferron, 2017; Human Rights Watch, 2017; UN Women, 2017; Joint Agency Research Report, 2018; Madigan, 2019; Shaphren and Cuadra, 2019; Toma, 2019)	19 (37)
	Published protocol for a systematic review (Yates et al., 2014)	1 (2)
	Literature review or systematic review (Brown et al., 2012; Rohwerder, 2014, 2016, 2017; Inter-Agency Standing Committee, 2015; Sthapit, 2015; Inter-Cluster Gender Working Group, 2016; Fisher et al., 2017; Humanitarian Learning Centre, 2017, 2018; D'Mello-Guyett et al., 2018; Jay and Lee-Koo, 2018; Amoakoh, 2019)	13 (25)
	Guidelines, strategy or policy papers (Harvey et al., 2004; UNHCR, 2006; Mitchell, 2009; House et al., 2012; de Albuquerque, 2014; Pearce, 2015; UNICEF, 2016; Sommer et al., 2017; World Health Organization, 2017; Sphere, 2018; Inter-Agency Standing Committee, 2019; CBM Water for Women Fund, 2020; Emirie et al., 2020; Humanitarian Response, 2020; Wilbur, 2020; Wilbur and Wapling, 2020)	16 (31)
	Journalistic articles or conference presentations (Zawde, 2008; Sanchez and Rodriguez, 2019)	2 (4)
Publication year	2019–2021	11 (22)
	2016–2018	21 (41)
	2013–2015	10 (20)
	2010–2012	4 (8)
	Before 2010	5 (10)
Region	International (e.g., guidelines)	15 (29)
	Caribbean	1 (2)
	Southern Asia	8 (16)
	Middle Africa	1 (2)
	Eastern Africa	6 (12)
	Southern Africa	1 (2)
	Southern Europe	1 (2)
	Western Asia	2 (4)
	None specified (e.g., literature review)	16 (31)
Type of crisis	Geophysical	4 (8)
	Meteorological	2 (4)
	Hydrological	1 (2)
	Climatic	1 (2)
	Biological	5 (10)
	Man-made (including refugee camps with other causes unspecified)	12 (24)
	None specified (e.g., literature review)	26 (51)

TABLE 3 Summary of quality assessment by type of paper.

Type of paper	Quality			Total, N (%)
	Low, N (%)	Medium, N (%)	High, N (%)	
Primary research	0	4 (27)	15 (79)	19 (37)
Published protocol for a systematic review	0	1 (100)	0	1 (2)
Literature review or systematic review	0	1 (8)	12 (92)	13 (25)
Guidelines, strategy or policy papers	1 (6)	8 (50)	7 (44)	16 (31)
Journalistic articles or conference presentations	2 (100)	0	0	2 (4)
Totals	3 (6)	14 (27)	34 (67)	51 (100)

policy documents explicitly described consulting people with disabilities, caregivers or OPDs. Overall, 16 (31%) of papers potentially consulted people with disabilities on menstrual health issues.

House (2013) noted that people with disabilities are less likely to participate in community decision-making. Therefore, their views on sanitation (and, by extension, menstrual health) are less likely to be heard. This exclusion is particularly crucial as people with disabilities can face barriers to accessing WASH interventions, including those relating to the environment, infrastructure, policy or institution, attitudes, and physiological attributes (House, 2013).

### Socio-cultural context: Social support, behavioral expectations, knowledge (menstrual biology, practical management)

Stigma from peers (House et al., 2012; Mena, 2015) and societal constraints on freedom of movement affected women's and girls' ability to seek support (House et al., 2012; Joint Agency Research Report, 2018). Support networks included family, teachers, and health organizations (House et al., 2012; House, 2013; Ndlovu and Bhala, 2016; Abu Hamad et al., 2017; Amoakoh, 2019; Shaphren and Cuadra, 2019).

Behavioral expectations resulted in restrictions on women's and girls' daily activities during menstruation, including being unable to cook, stay in the family home, or use the family sanitation facilities (Harvey et al., 2004; House et al., 2012; Bastable and Russell, 2013; House, 2013; Ndlovu and Bhala, 2016; Humanitarian Learning Centre, 2018; Madigan, 2019; Shaphren and Cuadra, 2019; Toma, 2019). Some restrictions could lead to girls missing school during menstruation (House, 2013; UN Women, 2017).

Many girls and women reported having poor knowledge of the biology of menstruation at the menarche (Ndlovu and Bhala, 2016; Abu Hamad et al., 2017; Humanitarian Learning Centre, 2018; Amoakoh, 2019; Shaphren and Cuadra, 2019; Toma, 2019) and consequent demand for access to more comprehensive information about menstrual health (House, 2013; Jay and Lee-Koo, 2018). This information could be transmitted through schools, community channels, including female religious leaders, and better information for mothers (often menstrual health influencers) (House et al., 2012; House, 2013; Ndlovu and Bhala, 2016; Sommer et al., 2017; Humanitarian Learning Centre, 2018; Amoakoh, 2019).

Accurate information on the menstrual cycle and how to manage it hygienically and with dignity is a critical component of menstrual health, the lack of which can have consequences for women's health, including infections such as vulvovaginal candidiasis

(House et al., 2012; Phillips-Howard et al., 2016). In emergency settings, women and girls may be receiving menstrual materials that they are not familiar with and, therefore, will require instruction on their use, including changing, washing and drying or disposing of materials (Sommer et al., 2017). Other authors recommend that the correct use of materials should be demonstrated (UN Women, 2017; Amoakoh, 2019).

The need for training in the use of menstrual materials may also apply to humanitarian personnel. Two authors identified a need for training for humanitarian staff (both male and female) to allow them to address menstrual health confidently and appropriately (Rohwerder, 2014; Sommer et al., 2016). Examples of inappropriate provision include a male logistician in Haiti who procured g-string underwear for use with pads (Rohwerder, 2016) while other logistics personnel distributed menstrual pads one at a time (Rohwerder, 2014). In one setting, some women were provided with underwear with a skull and crossbones pattern (Rohwerder, 2014).

### Social support, behavioral expectations, knowledge for people with disabilities

People with disabilities may face additional stigma around menstrual health with people not expecting girls with disabilities to menstruate, reducing the information and social support available to them (House et al., 2012). In general, it was noted that girls with disabilities had reduced social support (Sommer et al., 2017) and smaller networks (Rohwerder, 2017). Girls with disabilities are less likely to attend school (van der Gaag, 2013; Humanitarian Learning Centre, 2017; World Health Organization, 2017; Toma, 2019), with consequences for their social support networks. This exclusion could be exacerbated in an emergency as regular networks are disrupted (Rohwerder, 2017).

House et al. recommends that caregivers should be female and chosen by the woman or girl for physical assistance with menstrual health. Programs should be followed consistently by all caregivers involved, and the woman or girl's respect, privacy, and dignity should be prioritized (House et al., 2012). Furthermore, women and girls with disabilities may be isolated in their homes (Pearce, 2015) or have even less access to their communities and social support (Sommer et al., 2016). Outside the home, people with disabilities may need additional support from carers to prevent behaviors such as changing in inappropriate places (Sommer et al., 2017) or removing used menstrual materials in public (House et al., 2012).

Where necessary, educational materials on menstrual health should be provided in alternative formats (such as audio or pictures) (Sommer et al., 2017; Humanitarian Response, 2020). People with disabilities may not attend school and, therefore, may be unable to access lessons on menstrual biology (Sommer et al., 2017). Direct outreach to people with disabilities may therefore be necessary (Sommer et al., 2017), and feedback

must be sought to ensure that people understand the material (Inter-Agency Standing Committee, 2019).

Caregivers for people with disabilities may also need education on the biology of menstruation and assurances that menstruation is normal (House et al., 2012; Sommer et al., 2017). One case study reports a Burundian man caring for his sister who had a disability and sought assistance from humanitarian workers to help his sister manage her menstruation. He was given disposable pads and shown how to support his sister with their use (Sommer et al., 2017). This example points to a more general need for caregivers to be shown how to help menstrual health in people with disabilities (House et al., 2012; Sommer et al., 2017).

## Resource limitations—Physical environment: Housing, shelter, and latrines

Many of the papers included in this review ( $n = 24$ , 47%) commented on sanitation facilities and infrastructure for menstrual health in emergencies, perhaps because menstrual health has historically been seen as a WASH sector issue (Sommer et al., 2016).

Housing and shelter in emergency settings pose challenges for menstrual health. Overcrowded or cramped living conditions may not offer enough privacy for girls and women to manage their menstrual health (Sommer et al., 2016; Abu Hamad et al., 2017; Rohwerder, 2017; Madigan, 2019; Shaphren and Cuadra, 2019). This lack of privacy for washing and drying menstrual cloths can lead to incomplete drying of materials and consequent perineal rashes and urinary tract infections (van der Gaag, 2013). Communal shelters, in particular, need private areas for women and girls to attend to their menstrual health without having to leave their homes at night (Sommer et al., 2016).

Surveys of women and girls in humanitarian settings identified difficulties with managing menstruation in latrines. Problems identified included: a lack of soap (Shaphren and Cuadra, 2019); lack of doors and door locks (Bastable and Russell, 2013; van der Gaag, 2013; UN Women, 2017; Joint Agency Research Report, 2018; Shaphren and Cuadra, 2019); lack of privacy (Bastable and Russell, 2013; Madigan, 2019; Shaphren and Cuadra, 2019); lack of space for washing and drying hands and menstrual materials (UN Women, 2017; Joint Agency Research Report, 2018; Madigan, 2019; Shaphren and Cuadra, 2019); poor lighting at night (Bastable and Russell, 2013; van der Gaag, 2013; Joint Agency Research Report, 2018; Madigan, 2019); poor siting of latrines (Joint Agency Research Report, 2018; Amoakoh, 2019; Humanitarian Response, 2020); unsegregated latrines (van der Gaag, 2013; UN Women, 2017; Joint Agency Research Report, 2018; Madigan, 2019), and dirty,

smelly or overcrowded latrines (Joint Agency Research Report, 2018; Shaphren and Cuadra, 2019).

There was overlap in the literature about the infrastructure necessary to make facilities suitable for menstrual health management. The following features were specified: sex-segregated latrines (Harvey et al., 2004; van der Gaag, 2013; Sommer et al., 2016; Sphere, 2018); lights (Sommer et al., 2016, 2017; Joint Agency Research Report, 2018; Sphere, 2018); door locks (Harvey et al., 2004; House et al., 2012; van der Gaag, 2013; Sommer et al., 2017; Joint Agency Research Report, 2018; Sphere, 2018); separate private bathing spaces (Joint Agency Research Report, 2018), including screening around shower facilities (Bastable and Russell, 2013); private cubicles for washing menstrual cloths, as part of washrooms or laundry facilities (House et al., 2012; Bastable and Russell, 2013; Sommer et al., 2017; Amoakoh, 2019; Shaphren and Cuadra, 2019); hand washing facilities (Harvey et al., 2004; Sommer et al., 2016); discreet drainage for laundry and bathing spaces (Sommer et al., 2017; Shaphren and Cuadra, 2019); drying facilities (House et al., 2012; Bastable and Russell, 2013; Mena, 2015; Sommer et al., 2017; Sphere, 2018; Amoakoh, 2019; Shaphren and Cuadra, 2019); disposal facilities (House et al., 2012; Mena, 2015; Sommer et al., 2016; Sphere, 2018; Amoakoh, 2019). Other adaptations could include a hook or shelf inside toilet cubicles and mirrors inside the latrines (Sommer et al., 2016). Consultation with women and girls on materials, siting, design and management of facilities was identified as a priority (Harvey et al., 2004; Sommer et al., 2017; Sphere, 2018; Humanitarian Response, 2020).

## Housing, shelter, and latrines for people with disabilities

Overcrowded living space can have an even more significant impact on women and girls with disabilities, who may need more space to allow for the assistance of a caregiver (Rohwerder, 2017). There were few direct reports of the menstrual health needs of people with disabilities related to accessing latrines to change, wash and dry menstrual materials. One person with disabilities commented that a ramp to the latrine and a wheelchair provided by humanitarian assistance enabled her to use the toilet (van der Gaag, 2013).

A need for accessible toilet facilities was highlighted in the literature (House et al., 2012; Sommer et al., 2016, 2017, 2018; Sphere, 2018; Inter-Agency Standing Committee, 2019; Shaphren and Cuadra, 2019; Humanitarian Response, 2020). Suggested modifications to improve accessibility for people with disabilities include security lighting (Harvey et al., 2004); extra rails (Harvey et al., 2004; House et al., 2012; Sommer et al., 2017), access ramps (Harvey et al., 2004; House et al., 2012; House, 2013; Sommer et al., 2017; Inter-Agency Standing Committee, 2019), larger cubicles (Harvey et al., 2004; House et al., 2012);

wider doors (House et al., 2012; Sommer et al., 2017; Inter-Agency Standing Committee, 2019); door handles of appropriate height and size (Harvey et al., 2004; House, 2013; Sommer et al., 2017; Inter-Agency Standing Committee, 2019); taps of appropriate height (Inter-Agency Standing Committee, 2019); slip-resistant surfaces (House et al., 2012; Sommer et al., 2017); chairs placed inside the toilet (House et al., 2012; Sommer et al., 2017); latrines sited close to the homes of people with disabilities (Harvey et al., 2004), and support for washing hands (Harvey et al., 2004).

One report (Humanitarian Learning Centre, 2017), noted that WASH facilities are often not built to be accessible for people with disabilities, and guidance documents lack information about accessibility (House, 2013). Some reports acknowledged the need to consult with people with disabilities and their caregivers to design appropriate solutions (Sommer et al., 2017; Humanitarian Learning Centre, 2018; Sphere, 2018; Amoakoh, 2019).

Pre-existing barriers to WASH facilities have been exacerbated by the COVID-19 pandemic (CBM Water for Women Fund, 2020; Wilbur, 2020, in press; Scherer et al., 2021b), and the pandemic has increased the importance of making WASH facilities accessible for people with disabilities (Emirie et al., 2020). Specific to menstrual health for people with disabilities, standards for disability inclusion require that women and girls have spaces for washing, including space for a caregiver, and space to wash and dry stained clothing and materials and dispose of materials (Rohwerder, 2017).

## Resource limitations—Physical environment: Water facilities and infrastructure

Water may be scarce in an emergency setting. Host communities in Bangladesh reported a water shortage following an influx of refugees on the border (Joint Agency Research Report, 2018). In a refugee camp in the Philippines, a single water source might be shared by 100 families (van der Gaag, 2013). These resource limitations have clear implications for menstrual health, which requires water for washing and drying materials, hands and bodies (House et al., 2012; Sommer et al., 2017). Consulting women and girls on the siting of water points were recommended, partly to address security concerns (Sommer et al., 2017; Madigan, 2019).

### Water facilities and infrastructure for people with disabilities

People with disabilities may have difficulties accessing water points, using pumps or carrying water (House, 2013). As noted above, toilet and bathing facilities may need to be adapted so

that people with disabilities can access water within the facilities to support their menstrual health.

## Resource limitations—Physical environment: Disposal facilities

Disposal mechanisms for used menstrual materials were often not considered in setting up WASH facilities in emergencies (Sommer et al., 2016). The disposal preference for used menstrual materials is affected by cultural beliefs and practices, such as burning or burying menstrual waste (House et al., 2012; Rohwerder, 2017; Humanitarian Learning Centre, 2018). Women might prefer to dispose of their pads in the latrine or toilet, which has implications for blocking and desludging latrines (House et al., 2012; Sommer et al., 2016). In one case, the bins for disposable materials were not covered, so women put used materials behind pipes in the shower cubicles where they could not easily be seen (Mena, 2015).

The Sphere handbook notes the need for appropriate disposal systems (Sphere, 2018), which must be convenient, private and hygienic (van der Gaag, 2013; Sommer et al., 2017). These systems need to be designed in consultation with women and girls (Mena, 2015; Amoakoh, 2019) to consider local preferences.

### Disposal facilities for people with disabilities

Convenient and accessible disposal facilities are essential for people with disabilities who may need access to adapted spaces or help from a caregiver to manage their menstrual health (House et al., 2012). Consultation with people with disabilities and caregivers on suitable disposal mechanisms is required (Amoakoh, 2019; Inter-Agency Standing Committee, 2019).

## Resource limitations—Economic environment: Product affordability

Product affordability did not feature heavily in the literature searched, other than noting that the relative affordability of different menstrual materials might influence people's preferences (House et al., 2012). However, the affordability of menstrual materials against other needs was flagged as an important issue in using cash transfers or voucher schemes in emergency settings (Ferron, 2017). Women interviewed about cash transfers for non-food items often preferred vouchers for specific items because they could be sure they could access the items they needed (Ferron, 2017). Some women preferred to be given hygiene kits because they felt respected and did not have to buy menstrual materials with limited money (Rohwerder, 2014).

Ferron (2017) recommended carrying out market assessments before implementing cash transfers to make



sure that the items are available and markets are functioning. There may also be issues of market distortion. In one setting, women did not buy menstrual materials they could afford, preferring instead to use the free materials they were given (Ferron, 2017).

### Product affordability for people with disabilities

If cash transfers or vouchers are used to obtain menstrual products, there are access implications for people with disabilities, which include the process of registering for schemes, the accessibility of the technology used (such as mobile phone credit), the accessibility of distribution points, and the accessibility of shops and markets participating in the scheme, including transport options (Inter-Agency Standing Committee, 2019).

### Resource limitations—Economic environment: Product availability

The provision of menstrual materials may be seen as a low priority in an emergency setting (van der Gaag, 2013), and local preferences may not be considered (Sommer et al., 2016). One expert noted: “The need for culturally-appropriate sanitary materials is a constant refrain in all humanitarian responses and an area that we continually fail/fall short on” (Rohwerder, 2014).

Hygiene kits in emergency settings sometimes do not contain enough menstrual materials (Rohwerder, 2014). Research by United Nations High Commissioner for Refugees (UNHCR) found that in 2004, 10 of 53 refugee camps distributed adequate menstrual materials (UNHCR, 2006). In one survey in Bangladesh, 25% of women said they did not have sufficient supplies to meet their menstrual health needs (Joint Agency Research Report, 2018), while another found that 24% of women and girls had not received menstrual materials within the last 3 months (Humanitarian Response, 2020). In Mozambique, women also identified a lack of supply of materials (Madigan, 2019).

If reusable materials are being given, women need enough so that supplies can be washed and dried whilst another is in use (House et al., 2012; Rohwerder, 2014). Tampons and menstrual cups depend on water supply and soap for hand hygiene (House et al., 2012). Other considerations include product availability, comfort, changing frequency, security, color, need for underwear, and how much of a product is required (House et al., 2012). In another example, menstrual cloths of an unfamiliar color and thickness were supplied to women and girls in Pakistan and Kenya. They were not used, used for other purposes, or thrown away (van der Gaag, 2013). In one setting in Bangladesh, women were given new saris so they could use the old ones for menstrual cloths, but the old saris were not used as humanitarian agencies intended (Ferron, 2017). In

Mozambique, there was insufficient cloth to make reusable pads (Shaphren and Cuadra, 2019). In one setting, women received reusable pads but no soap and wrong-sized underwear (Phillips-Howard et al., 2016). Some organizations provide menstrual pads without underwear, making them harder to use or with inappropriate underwear (Rohwerder, 2014, 2016).

Materials included in hygiene kits were: cotton material (Sommer et al., 2017; Sphere, 2018; Shaphren and Cuadra, 2019); disposable pads (Sommer et al., 2017; Shaphren and Cuadra, 2019); reusable cloth pads (Sphere, 2018); extra soap (Sommer et al., 2017; Sphere, 2018; Shaphren and Cuadra, 2019); container with a lid for soaking or storing pads (Sommer et al., 2017; Sphere, 2018; Shaphren and Cuadra, 2019); plastic basin for washing (Rohwerder, 2014); rope and pegs for drying reusable materials (Sommer et al., 2017; Sphere, 2018); analgesia (Rohwerder, 2014); torch (Shaphren and Cuadra, 2019), and underwear (Sommer et al., 2017; Sphere, 2018).

### Product availability for people with disabilities

Some authors noted that the contents of a hygiene kit might need to be adapted for use by people with disabilities (Inter-Agency Standing Committee, 2019; CBM Water for Women Fund, 2020); or that hygiene kits could be standardized to include the needs of people with disabilities (Inter-Agency Standing Committee, 2019). These adaptations might consist of additional supplies (Inter-Agency Standing Committee, 2019; Shaphren and Cuadra, 2019) and extra items such as protective bedding for people unable to mobilize (Sommer et al., 2017; Shaphren and Cuadra, 2019); supplementary items such as menstrual calendars could also be helpful (House et al., 2012). People with disabilities and caregivers should be consulted about their needs (Sommer et al., 2017; Amoakoh, 2019) and have opportunities to decide which products suit them (House et al., 2012).

One author noted that the distribution system of hygiene kits might not be reaching people with disabilities (Madigan, 2019). In one case, a woman was sharing her menstrual materials with her daughter, who had learning difficulties and did not attend school and had not been issued with menstrual materials (Sommer et al., 2018). Distribution centers could be adapted to be accessible (Sommer et al., 2017), or house visits might be more appropriate for people who are unable to leave the home (Madigan, 2019).

## Discussion

This study had two objectives: to (1) identify and map the scope of available evidence on the inclusion of disability in menstrual health during emergencies and (2) understand its focus in comparison to efforts to improve menstrual health for people without disabilities in emergencies. We found significant

gaps in attention to menstrual health for all women and girls in emergency settings. However, the lack of information relevant to women and girls with disabilities was particularly stark. Most data related to increasing access to WASH services for women and girls with disabilities, with significant gaps highlighted against other aspects of menstrual health, such as providing information in accessible formats.

Much has been written on the social support, behavioral expectations and knowledge related to menstruation and how harmful social beliefs can negatively impact women and girls' ability to thrive (Hennegan et al., 2019; Wilbur et al., 2019a). Our study highlights that those menstrual socio-cultural beliefs are also followed in emergencies. Critical support networks can be interrupted in humanitarian settings; impacts of disruptions may be greater for people with disabilities because they face discrimination in daily life and, therefore, may have smaller social support networks. These changes and loss of routine can be particularly traumatic for people on the autistic spectrum, which has been documented in the COVID-19 pandemic, along with a call for more autistic-specific advice and information (Ameis et al., 2020; Oomen et al., 2021).

Behaviors before and during menstruation carried out by people with intellectual impairments can include withdrawal, self-harm, increased hyperactivity, anger, and shame, as well as removing a menstrual material in public (Kyrkou, 2005; Chou and Lu, 2012; Thapa and Sivakami, 2017; Wilbur et al., 2021a,b). These behaviors may be amplified during emergencies when people are more likely to be frightened and feel vulnerable. Repetition of information through various mediums and establishing new norms and routines have successfully supported the menstrual health of women and girls in Nepal (Wilbur et al., 2019b). Such gains could be lost during emergencies unless clear and repetitive information on menstrual health is provided to the individual and caregiver where relevant.

Our study shows conflicting data between the recommendation that caregivers should be women and identified by people with disabilities and the need to ensure that everyone who provides care, regardless of gender, should be supported. As social networks may be disrupted, men may help women and girls with disabilities manage menstruation for the first time. Therefore, it is important not to enforce or assume traditional gender roles, which may exclude male caregivers who need support and guidance. Instead, the wishes and choices of the person with a disability should be encouraged as much as possible through supported decision-making.

Existing evidence highlights that people with disabilities may be more negatively affected by poor housing conditions than people without disabilities during emergencies (Sheppard and Polack, 2018). Impacts include an increased dependency on self-care, being housebound and socially isolated, which may worsen existing health conditions and social exclusion. Our findings reflect these concerns but also demonstrate that

all women and girls face challenges accessing water, using safe and private latrines and bathing shelters to change, wash the body and menstrual materials, or end-use disposal mechanisms. However, women and girls with disabilities face additional barriers. Technical guidance on how to make WASH infrastructure accessible for people with disabilities exists (Jones and Reed, 2005; Jones and Wilbur, 2014; Government of India, 2015), including WASH in emergencies (UNICEF, 2017; Coultas et al., 2020). These resources include suggestions about how to make “reasonable accommodations”, which are *ad-hoc* temporary arrangements to accommodate one or more people with disabilities—such as placing a temporary and movable wooden ramp to the entrance of a latrine (Coultas et al., 2020) or a movable toilet seat over a traditional pit latrine (Jones and Wilbur, 2014). These designs could facilitate greater access to latrines for people with disabilities and their caregivers. Yet more technical guidance about how to make menstrual material disposal mechanisms fully accessible is required.

Most of our study findings related to people with disabilities centered on accessible WASH facilities. Though this sector is vital for menstrual health, a narrow focus would risk not addressing the issue in its entirety, and people with more “invisible” impairments (such as cognitive and communication) may be unintentionally excluded from menstrual health efforts. “Inclusive WASH” is widely understood as accessible infrastructure (Coe and Wapling, 2015; Wilbur et al., 2021b), but inclusive WASH is not an output; it is “a process which addresses the barriers to accessing and using WASH services faced by people who are vulnerable to exclusion, including people with disabilities” (Wilbur et al., 2021a). Ensuring accessible information and WASH infrastructure, challenging negative stereotypes, integrating disability into policy commitments and monitoring progress, and ensuring the participation of people with disabilities and caregivers in all these activities are all part of inclusive WASH.

Inadequate effective and meaningful participation of people with disabilities in WASH programs, from design to evaluation, has been widely documented in development settings (Groce et al., 2011; UN Water, 2015; Scherer et al., 2021b; Wilbur et al., 2021b). Evidence also exists from humanitarian settings, including two papers which explore the extent to which the rights of persons with disabilities are included in international guidance on WASH responses to prevent the transmission of COVID-19 (Scherer et al., 2021a) and interventions (Wilbur, *in press*). Both found that participation was referenced significantly less than ensuring access to WASH infrastructure in guidance documents (Scherer et al., 2021a) and interventions (Wilbur, *in press*). These patterns are apparent in our study. Participation can boost self-confidence, which could, in turn, reduce stigma and self-stigma (Corrigan et al., 2009). Supporting the autonomy and agency of people with disabilities can also challenge broader misconceptions about disability, including that they cannot contribute to the community's development. In a study in

Zambia, enabling the meaningful participation of people with disabilities in the design of communal water points resulted in changes in infrastructure design, making it easier for all people to use. This visibility positively impacted community members' attitudes toward people with disabilities (Danquah, 2015). The participation of women and girls with and without disabilities and caregivers in humanitarian contexts would raise awareness about their specific requirements and support the development of relevant and culturally acceptable solutions.

Our study shows that significantly more attention must be given to ensuring all women and girls in emergencies can access affordable, effective and culturally appropriate menstrual materials, information about how to use these and effective distribution mechanisms. Encouragingly, menstrual underwear and a wash and dry bag to reduce menstrual waste and disposal challenges in humanitarian contexts are currently being developed and pilot tested (Elrha, n. d.-b). Furthermore, the feasibility of integrating menstrual health education and menstrual hygiene kits that contain the menstrual cup or reusable menstrual materials is being explored in refugee settlements in Uganda (Elrha, n. d.-a). Such innovations and studies should also be piloted with and include women and girls with different impairments and their caregivers to understand their appropriateness for these populations. Consideration must be given to the specific needs of women and girls with disabilities, including based on their impairment (Charlifue et al., 1992; Patage et al., 2015), ability to leave home, understand information and instructions; ability to afford and access transport, shops or distribution site, as well as access to social protection schemes, including cash transfers (Sheppard and Polack, 2018).

Our study has highlighted the need to ensure distribution centers are fully accessible for people with disabilities. However, potential challenges in navigating the environment for people without the assistive devices they need (e.g., wheelchair, hearing aid, walking cane) must be recognized. For instance, only 5–15% of people who require assistive devices have them in low- and middle-income countries (World Health Organization World Bank, 2011); this gap could be worse in emergencies where existing disability services may be disrupted or if assistive devices are lost or damaged. Visiting the homes of women and girls with disabilities is essential to ensuring menstrual materials are distributed to everyone who requires them. This adaptation is recognized in the United Nations Human Rights Council's first resolution on MHM, which includes the call to deliver menstrual health information and education to caregivers and "out-of-school settings" in "peace time", as well as emergency preparedness and responses (United Nations Human Rights Office of the High Commissioner for Human Rights, 2021).

Significantly more data about menstrual health and disability in emergencies must be generated, and their findings should feed into training for implementers. In 2017, A

Toolkit for Integrating Menstrual Hygiene Management into Humanitarian Response was published (Sommer et al., 2017), pilot-tested and evaluated in Tanzanian refugee camps (Sommer et al., 2018). The toolkit contains modules on training and menstrual hygiene management for vulnerable populations, which includes women and girls with disabilities. This toolkit is positive, but integrating disability explicitly in its training modules is required to raise awareness and increase staff capacities to communicate menstrual health-related information confidently and in accessible formats. This mainstreaming is important because people with disabilities report that they are 50% more likely to find healthcare staff skills inadequate, four times more likely to receive ill-treatment in the healthcare system and less able to understand the information provided (World Health Organization World Bank, 2011). These statistics might be worse in humanitarian settings, where activities need to be carried out quickly and healthcare resources are in more limited supply, such as during the "emergency relief" phase (Crutchfield, 2013).

Menstrual health in emergencies requires multisectoral responses. This includes disability-related services, WASH, women and child protection, sexual and reproductive health, shelter, and education. Core to all efforts must be the involvement of people with disabilities, including Organizations of Persons with Disabilities, in all phases from inception to evaluation. Only this meaningful engagement will ensure that women and girls with disabilities are at the front and center of their own menstrual health development initiatives.

## Review strengths and limitations

To the best of the authors' knowledge, this is the first review (systematized or otherwise) that explores the menstrual health experiences of women and girls with and without disabilities in humanitarian emergencies. It also includes a comprehensive search of peer-reviewed and gray literature.

However, several limitations must be considered when interpreting the results. Of the included papers that identified a region, the majority focused on Southern Asia, followed by Eastern Africa, but none were from the Pacific region. More than half of the papers did not specify the types of crises, but of those that did, man-made received the most attention and hydrological and climatic, the least. Therefore, the findings may not be generalizable to all contexts. Though non-English papers were not excluded, English search terms were used, so some papers in languages other than English might have been missed. Finally, no study specified the impairments experienced by women and girls with disabilities, so a comparison of menstrual experiences across impairment groups could not be completed. In addition, the quality assessment criteria used in this review

could not be validated against similar criteria in the literature due to the dearth of papers published in the field.

## Conclusion

This study demonstrates gaps in attention to menstrual health for women and girls in humanitarian crises and underscores that disability and menstrual discrimination overlap to increase inequalities during emergencies. Few interventions were identified addressing the requirements of women and girls with disabilities and their caregivers. More evidence about the requirements of these populations in humanitarian crises must be generated, and subsequent solutions developed. Women and girls with disabilities and their caregivers must meaningfully participate throughout the whole process to ensure menstrual health efforts are appropriate.

## Data availability statement

The original contributions presented in the study are included in the article/[Supplementary material](#), further inquiries can be directed to the corresponding author.

## Author contributions

JW: conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, software, validation, visualization, writing—original draft, and writing—review and editing. FC: data curation, formal analysis, investigation, resources, software, validation, visualization, writing—original draft, and writing—review and editing. ES: data curation, investigation, and writing—review and editing. LB: writing—review and editing. CM: conceptualization, data curation, funding acquisition, project administration, resources, and writing—review and editing. All authors contributed to the article and approved the submitted version.

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Author CM was employed by World Vision. Author JW reported grants from World Vision.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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## Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/frwa.2022.983789/full#supplementary-material>

SUPPLEMENTARY TABLE S1  
Type of paper reviewed.

SUPPLEMENTARY TABLE S2  
Summary of quality for included papers.

SUPPLEMENTARY TABLE S3  
Summary of results from individual papers.

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# Sanitation work: Realizing equity and inclusion in WASH

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Recognition of the human right to water, sanitation and hygiene (WASH), and equity and inclusion concerns around gender, disability and age have led to crucial change in WASH programmes and policy, responding to commonly hidden issues such as menstrual hygiene, inclusive facilities for people with disabilities, and affordable services for residents of informal settlements. Despite progress toward realizing the rights of end users “to” sanitation, this crucial body of work has overlooked the rights of an unseen, diverse population working “in” these services, including those who handle human waste. There are increasing calls within and beyond WASH for sanitation workers - marginalized by their informal and hazardous roles, and intersections of caste, religion and gender - to realize their rights to safe working conditions and social security. Yet, sanitation work has received little attention from equity and inclusion WASH scholars, despite the pressing need to challenge dominant technical, health-centric framings of sanitation that can overlook workers’ lived realities. We argue for an intersectional, interdisciplinary approach to support sanitation workers to realize rights to fair living and working conditions, including inclusive WASH infrastructure at work. We draw on the limited literature available to highlight gaps in, and show the importance of the sub-sector of equity and inclusion to engage further with the lived realities of sanitation workers. Increased collaboration between sanitation workers, activists, and allies working on inclusion, labor rights, fecal sludge and solid waste management is paramount to realize sanitation workers’ rights and to truly provide “inclusive” sanitation for all by 2030.

## KEYWORDS

sanitation work, intersectionality, equity and inclusion, WASH, caste, gender

## Introduction

In recent decades, scholars, activists and practitioners have been paying greater attention to how water, sanitation and hygiene (WASH) infrastructure and services are accessed and used differently, according to who you are (including intersections of caste, class, religion, gender, disability, and age), where you live, and what you do (your occupation). It is the latter, however, that has received less attention to date within equity and inclusion scholarship, and the WASH sector more broadly. What happens, when your occupation is central to the delivery of sanitation services, yet your health,

safety and well-being, and access to these services yourself are overlooked by employers and government agencies? This is the reality for millions of sanitation workers across the world<sup>1</sup>. Sanitation workers tirelessly handle, remove and sort human waste so that the living environment for others might be “clean.” Frequently hailing from marginalized, low-income, class, caste backgrounds or religious minorities, the priorities and concerns of sanitary workers, especially those involved in hazardous removal of human waste, remain not only overlooked, but - in the words of Bhasha Singh (2014) - intentionally *unseen* by decision makers, and wider society. This paradox between visibility (in public spaces) and invisibility (in discourse, policy and practice) was epitomized by the COVID-19 pandemic, with sanitary workers hailed as “frontline heroes,” yet not provided with adequate wages, job security or protections (Salve, 2020; Prater and Springate, 2021; Swaroop and Lee, 2021; WaterAid, 2021; Alam et al., 2022; Saldanha et al., 2022) - challenges that cut across the so-called global North and South.

Recognition of the human right to WASH and ongoing equity, diversity and inclusion concerns around the need to deliver safe, accessible, affordable and sustainable infrastructure and services to, for and with a range of users, has led to a lively field of research and advocacy in WASH on people with disabilities (Jones and Reed, 2005), menstruating adolescent girls (Sommer and Sahin, 2013), including those with disabilities (Wilbur et al., 2022), people who experience incontinence (Rosato-Scott et al., 2020), transgender and non-binary users (Boyce et al., 2019), and perimenopausal women (Bhakta et al., 2021). Despite this lively debate, and progress in the provision of basic and improved sanitation worldwide, the rights of those who are critical to management of both human and solid waste - sanitation workers - remain overlooked in inclusive WASH approaches. Equity and inclusion discussions are yet to directly respond to the stigmatization of sanitation workers who clean toilets, empty septic tanks, pit latrines, sewers and drains, collect and dispose of solid waste and sweep streets, exposing them to harm. Highlighted as an area of concern by the Special Rapporteur on the human right to safe drinking water and

sanitation over a decade ago (de Albuquerque, 2009, 2012), this work remains deeply interlinked to identity and social status around the world, and especially in South Asia. To “leave no one behind” and achieve the Sustainable Development Goals (most notably Goals 5, 6, 8, 10 and 11), concerted efforts from equity and inclusion perspectives are needed to realize the rights of this “unseen” population.

This paper focuses especially on sanitation workers, to highlight the need for greater focus upon rights “in” sanitation, directly focussing on the individuals and groups who deliver and maintain services, as well as the rights “to” sanitation and WASH for users. We draw on the limited literature available on human waste management in particular - an area that has received less attention to date - as well as more established insights from solid waste management and healthcare, to highlight the need for the sub-discipline of equity and inclusion, and wider sector, to engage further with the rights of sanitation workers, around the world. Though the challenges facing those involved in manually handling human waste (including, for example, manual scavengers in South Asia), are particularly noteworthy, we recognize, and highlight, that sanitation work is a global occupation that demands greater attention. The paper outlines why an intersectional and interdisciplinary approach is needed to support sanitation workers - across the globe - to realize rights to decent work and living conditions, social security, education and training, supported by access to inclusive and gender-sensitive WASH infrastructure at work.

## Sanitation workers: Rights “in” sanitation

Whilst human rights activists have worked for decades to highlight the plight of sanitation workers, it is only in recent years that the health, safety and dignity of sanitation workers has received greater attention in WASH research, policy and practice on the global and regional stage. Understanding the challenges of sanitation work has been an emergent subject of interest to several disciplines and sectors within and outside WASH (notably healthcare, solid waste management and labor rights). Occupational health and safety research has an established body of research around the health outcomes of the job, such as Gastroenteritis, respiratory and musculoskeletal diseases, and mortality (Gong et al., 2013; Acharya, 2019; Chumo et al., 2021; Oza et al., 2022). There is also a growing interest in studying the correlations between worker training, knowledge, behavior and their health outcomes (Alam et al., 2022; Ye et al., 2022), and observing the operation of desludging to design standard operating procedures to improve occupational health (Eales, 2005; Abbasi and Badruddin, 2019; Gautam et al., 2021). Research has also addressed the socio-economic status of sanitation workers and their families, including caste and colonial underpinnings of the occupation in South Asia

<sup>1</sup> The number of people involved in ‘sanitation work’ globally is unknown. Definitions of ‘sanitation work’ also vary significantly within and between countries. Whilst some scholars, activists and policy advocates focus explicitly on those involved in handling human waste (feces) across the sanitation value chain (see, for example, the Initiative for Sanitation Workers: <https://www.susana.org/en/knowledge-hub/projects/database/details/676>), others include both human and solid waste management under the umbrella of ‘sanitation work’. This is because there is a great deal of overlap between these sectors, and those involved in the work (for example, waste workers in India handling both solid and human waste). Sanitary work can also include healthcare workers (collecting and sorting medical waste inside and outside of hospitals), wastewater treatment plant operators, and other workers who may come into contact with waste, as part of their jobs.



(Joshi et al., 2004; Khurana and Ojha, 2009; Chowdhury, 2011; Hossain, 2013; Sultana and Subedi, 2016; Prasad and Ray, 2019; Walters, 2019).

A critical body of research also focuses on the multifaceted challenges of the livelihoods of sanitation workers, including how institutions shape this occupation, informality, low and irregular incomes, and arbitrary contracts (van der Wel et al., 2010; Nkansah et al., 2012; Mallory et al., 2020; Xu and Dou, 2021; Rajendra, 2022). This area of focus correlates with current initiatives in the WASH sector around improving sanitary work. For instance, in Bangladesh, Practical Action supported two sanitation worker groups to formalize and mechanize their work and build a public-private partnership with the local government (de La Brosse et al., 2017). They also provided vocational training (in health and safety and financial management) and access to subsidized personal protective equipment. Sanergy, a social enterprise, has also worked with manual pit emptying groups in Nairobi, Kenya, to deliver sanitation services in low-income settlements. Although supporting sanitation workers is vital, long-term improvement in, or job security for workers remains elusive, with many WASH projects and programmes oriented primarily toward efficient and sustainable service delivery, and not worker welfare (Mallory et al., 2020; Zaout et al., 2021).

As sanitation work is gaining traction within the WASH sector, several studies have called for, and are concerned with assessing the prevalence of sanitation work, profiling and mapping the challenges to moving to a “dignified” job (Dalberg, 2017; World Bank et al., 2019; Peal and Kapulu, 2021; Raghavendra and Kumar, 2022). Numerous national and international forums also showcase the significant role of sanitation workers and the various challenges they face. For example, in 2016, the fecal sludge management network in Bangladesh held a “Dignity of Septic Tank Emptiers Convention in Dhaka” to leverage support for this disadvantaged group (WSUP, 2016). In 2021, several researchers and practitioners ran the first “Sanitation Workers Forum”<sup>2</sup> to share recent work and research on sanitation work and identify ways to improve this occupation, alongside sanitation worker representatives. Since the challenges of this livelihood are rooted in social and political systems, movements beyond the WASH sector also strongly advocate for sanitation workers. For example, Baruah (2014) provides a historical overview of the social movements in India that advocate for the elimination of manual scavenging - a “caste-based and hereditary occupation form of slavery” (International Dalit Solidarity Network, 2022) - from Dalit movements against untouchability in 1972 to the current constitutional acts to end manual scavenging as a “supposed”

2 All videos from the forum can be found at: <https://sanitationworkers.susana.org/resources> and four summary blogs from the event here: <https://www.amita-bhakta-hidden-wash.net/forced-to-clean-excreta-by-accident-of-their-birth-in-a-particular-caste/>.

solution to the dire status of this job<sup>3</sup>. In Pakistan, the “Sweepers are Superheroes” campaign, led by human rights activists and lawyers was also established to challenge the social stigma of this job, stop discrimination in recruitment practices, and advocate for improved working conditions (Aqeel and Gill, 2021). It is important, in our discussion therefore, that we recognize that recent advances in debate are part of much longer-term struggles of, from and in support of sanitation workers globally.

## Going deeper: An intersectional and interdisciplinary approach

With some notable exceptions (outlined above), the vast majority of emerging literature on sanitation work in the WASH sector has, to date, centered mainly on occupational health and safety, technological “solutions” (Cawood and Bhakta, 2021) and policies and regulations, less so on the diverse experiences, needs and priorities of workers themselves. The absence of discussion on sanitation work in the sub-sector of equity and inclusion is particularly notable, and surprising, given that identity is deeply bound to recruitment practices, the division of labor (and work tasks), working and living conditions, livelihood trajectories and intergenerational change. In this short piece, we argue that understanding the equity and inclusion challenges associated with sanitation work requires a much *deeper* appreciation of who is involved in the work, how and why this is changing, and the differentiated individual and collective needs of workers. Utilizing an intersectional approach<sup>4</sup> and a desk-based narrative review of recent literature on sanitation work, we highlight below some of the key ways in which “who you are” might shape your everyday working realities in different contexts. We also pose key questions that require deeper, interdisciplinary engagement (from Anthropology and Geography, History and Social Development, to Policy, Law and Civil Engineering) with, and in support of sanitary workers and their representatives going forward.

## Caste and religion

Sanitation work, across all its forms, is deeply bound to caste, class, race, religion and migratory status. Whilst the

3 See also the ongoing campaign ‘Stop Killing Us’ by prominent anti-manual scavenging activist Bezwada Wilson of Safai Karamchari Andolan.

4 Despite diverse and at times conflicting interpretations (for origins, see Crenshaw, 1989 and for a useful overview, see Collins and Bilge, 2016), intersectionality remains a vital tool for WASH and equity and inclusion researchers, practitioners and policy advocates to examine how overlapping forms of oppression (according to caste, class, religion, race, gender, disability and age, sexuality and other identity markers) impact certain groups in daily life.



caste underpinnings of this work are most notable and widely documented in South Asia (where Dalits continue to dominate cleaning occupations), sanitary work has been, and continues to be associated with low-class and religious, racial and ethnic minorities around the world, from particular ethnic groups in Japan (Hanley, 1987; Groemer, 2001), Nigeria (Uwa, 2018) and Madagascar (Rijke-Epstein, 2019), to tribal minorities in Ghana (Nkansah et al., 2012), black employees in the USA (Martin Luther King, Jr. Research and Education Institute, n.d), and undocumented migrants in the Maldives (International Labour Organization, 2022). However, it is within South Asia that who you are is deeply intertwined with what you do (including how you are treated within and outside of the workplace), where you live, and what alternative occupations are available to you and your children. Within this context, manual scavenging, and other forms of hazardous and degrading waste work, remain dominated by particular low-caste and religious minorities, due to the historical division of labor linked to religious texts on purity and pollution – institutionalized by British colonizers (Sultana and Subedi, 2016) – and reproduction of caste as a contemporary form of social, economic and political power (Shahid, 2015; Dubey et al., 2021). Whilst commonly associated with the removal of feces from dry latrines in rural India, manual scavenging has adapted with modernization (Wilson and Singh, 2017) with the introduction of sewers, newly constructed toilets and septic tanks (Mander et al., 2019). Even though the practice has been banned, new machines have been introduced, and job titles have changed (from “Sweeper” to “Sanitary Worker”) – bringing new socio-economic groups into the occupation – manual scavenging and other hazardous waste work persists in India, Bangladesh and Pakistan<sup>5</sup> via waged and unwaged labor. For example, in Pakistan, adverts proclaim that “only Christians need apply” for government sanitary posts including dangerous sewer work (ur-Rehman and Abi-Habib, 2020), reinforcing discrimination and subjugation of (converted) Christians involved in cleaning (Butt, 2020; Aqeel and Gill, 2021). In Bangladesh, manual pit emptiers from self-defined *Harijan* communities (“children of God”<sup>6</sup>) are unable to access improved jobs on mechanical trucks used to empty human waste, with some reverting back to using buckets and spades (Zaqout et al., 2021). Critical questions and uncertainties remain, as new technology is introduced into the sector, yet manual handling of waste (and exposure to hazards for particular groups) persists across the globe. For example, what role can or does technology play in improving the work, and for whom? Who operates the truck or pump, and who still

goes into the pit? What are the implications of “job takeover” by different socio-economic or religious groups? Is work still (informally) sub-contracted out to particular groups of people, and what does this mean for wages and basic protections? Whilst the caste and religious underpinnings of sanitation work have received particular attention, key questions also remain around class and race, and how this intersects with sanitation work both historically, and across the world today.

## Gender

Sanitation work has traditionally been divided along gendered lines as well as by caste in contexts such as South Asia, shaping the lived experiences (including recruitment practices and nature of work tasks) of men, women, boys, girls and transgender communities. For example, whilst men and boys commonly descend into sewers and septic tanks to manually empty them<sup>7</sup>, women and girls are more often involved in toilet cleaning (including dry latrine cleaning, a form of manual scavenging) sweeping streets, railways and sorting municipal waste. In India, young women who have married into families that clean dry latrines are known to have been forced into the same work (often taking over households from in-laws), even if their own families did not engage in cleaning. Widows have also been recruited as government *safai karamcharis* (sanitation workers) through the *warsa hakka* scheme upon the death of their husbands – including from “sewer deaths” (Kadlak et al., 2019; Dubey et al., 2021). Personal protective equipment is rarely designed for women or children. A 2009 survey by the Women’s Engineering Society found that in the UK only 8% of women working in engineering roles wore PPE specifically designed for women and therefore were often uncomfortable or even placed at greater risk in the workplace (Women’s Engineering Society, 2010). There is little evidence that the situation is better in other countries, with early reports from Wai in Maharashtra, India (Center for Water and Sanitation (CWAS), CEPT University, 2020), suggesting that women workers lack access to adequate safety boots and goggles, have ill-fitting face shields and helmets, and only receive part of the full uniform given to sanitation workers. Female waste workers in India have little or no access to toilets to change menstrual materials, resulting in discomfort and gynecological problems. Menstruating workers use two to three sanitary pads at once, walk for long distances carrying up to 30 kg of waste throughout the day, and navigate staircases without railings whilst carrying large loads (Arise Consortium, 2022). Perimenopausal waste workers and sweepers with heavy

<sup>5</sup> Manual scavenging has also been reported in Nepal, Sri Lanka and the Maldives, though data remains scarce.

<sup>6</sup> The distinction between *Harijan* and Dalit is significant, and the subject of much debate between Gandhi (associated with use of the former) and Dr Ambedkar (for details, see Roy, 2017).

<sup>7</sup> Though women and girls rarely enter sewers or septic tanks, they have been found to ‘help’ male workers by carrying buckets and dumping waste (Karim, 2017; Cawood et al., 2021), and are directly exposed to fecal waste in dry latrines or other cleaning activities (for example, as caretakers for shared or public facilities, railway cleaners or road sweepers).

and irregular menstrual periods with the loss of up to 80 ml (6 tablespoons) of blood require access to sanitation to change soiled menstrual materials and wash (Bhakta et al., 2021). Faced by a lack of income, paid maternity leave and safe childcare spaces, female Nigerian waste workers also have no choice but to work and take their infants onto dumpsites to be able to breastfeed them (Obadina, 2016). By putting the rights of women and girls with no fixed “workplace” into sharper focus, could equity and inclusion perspectives on sanitation work inform gender-sensitive urban planning to ensure they can access facilities when and where needed? Lessons can also be taken from Andhra Pradesh, Telangana and Odisha in India, where socially and economically disenfranchised transgender people, who lack access to inclusive sanitation, are spearheading the takeover of desludging services through self-help groups to generate livelihood opportunities (National Faecal Sludge and Septage Management Alliance and Niti Aayog, 2021). Navigating work and domestic responsibilities, a lack of social security, negative impacts of physical labor on their reproductive health (Kadlak et al., 2019; Senthilir et al., 2020), vulnerabilities to sexual violence and harassment at home and work, poor access to healthcare, housing and education, job insecurity, chronic morbidity, and lack of participation in political activities ultimately has adverse effects on the mental and physical health of women workers (Monteiro and Nalini, 2021) who face “double” or “triple” discrimination due to caste, gender and occupation (Patras and Usman, 2019; Kumar and Preet, 2020; WaterAid India, 2020). Other critical questions relating to gender and sanitation work that remain unanswered include; how do female sanitary workers navigate menstrual hygiene in their shift patterns? Whilst equity and inclusion debates have driven menstrual hygiene management (MHM) provision in schools, can sanitation services truly be inclusive if the MHM needs of women and girls who spend hours collecting waste outside of school are overlooked? What facilities are available for sanitary workers in the workplace (for example, showers, handwashing stations)? What are the needs and priorities of transgender sanitary workers? What safety equipment is available, and is this suitable for different body types, preferences and climates? To what extent are the concerns of workers taken into consideration by employers, particularly in relation to sexual harassment?

## Disability

Whilst there is lively debate in equity and inclusion, and across WASH around access to facilities for users with a disability (see, for example, Wilbur et al., 2022), to date, very little is known about sanitary workers with a disability, and how disability intersects with gender, caste and other personal characteristics. This lack of knowledge exists around two key areas - workers with existing disabilities who undertake sanitary work (their specific needs, challenges and priorities),

and workers who have a disability, *because* of sanitation work (for example, from prolonged exposure to harm, such as hazardous gases or materials, and acute trauma, such as leg or arm fractures). Manual pit and septic tank emptiers and sewer cleaners face particular risks of lifelong disabilities due to work-related injury, including polio, musculoskeletal disorders, skin lesions. These in return are also associated with lifelong impacts on cognition and learning and in some cases psychosis (Gonzalez et al., 1992; Jukes et al., 2002; Esa et al., 2021). Inhalation of noxious gases also reduces quality of life due to asthma (Oza et al., 2022), and can lead to death for septic tank emptiers, who are rendered unconscious and can literally drown in feces in these “death traps” (Mander et al., 2019). Disability-inclusive WASH warrants expansion to consider the rights of injured sanitation workers with disabilities, and how the rights of workers with pre-existing (physical and psychological) needs can be realized. Discussions on the improvement of occupational health and safety for sanitation workers need to further progress to incorporate adapted protective equipment, flexible working hours, accessible facilities in the workplace, and social security support for workers with disabilities. Could disability-inclusive employment opportunities improve livelihoods for and inclusion of people with disabilities, in sanitation work, and societies where disability remains taboo? Inclusive sanitation programming also needs to pay greater attention to the WASH facilities available in low-income settlements or “colonies” in which sanitation workers commonly live, and if these are accessible for those with disabilities - a central question for urban planning and WASH interventions overall. Greater attention also needs to be paid to the harm that sanitation work brings and the wider environment in which it takes place on mental health and well-being, with reports of worker suicides, depression and anxiety, linked to lack of, or withholding of pay, and harassment.

## Age

A further area that has received limited attention to date is that of age, and how this intersects with other identity markers in sanitation work. Whilst there is extensive literature on child labor in relation to solid waste work (including sorting e-waste), less is known about children involved in handling human waste - though we know this also exists<sup>8</sup>, especially where it is a hereditary occupation. Existing studies note how child waste pickers financially contribute to low-income households, but find it challenging to avoid risks including traffic accidents, being trapped in waste compressors, slipping or falling, and being cut by waste materials, due to their age (Krajewski et al., 2002).

<sup>8</sup> In Bangladesh, recent research found that boys as young as 7 years old start shadowing male relatives who enter pits and tanks to remove sludge (often at night) (Cawood et al., 2021).

Studies have also found that families face the financial burden of treating wide-ranging health problems among waste collector children, including respiratory issues, malnutrition, fatigue, skin problems, vision impairments and costly treatment for bone fractures (Alam et al., 2021). Much more information is needed on how the experiences of sanitation work, especially human waste management, vary according to age, among young and older populations. For example, what are the different pathways into and out of the occupation for children and young people? What aspirations do children of sanitary workers have for alternative livelihoods? How effective is education and training in opening up different possibilities? And, how are the needs and priorities for older workers, including pension entitlements (as well as other core social protections) addressed? What are the implications or possibilities of changing occupations, later in life, and for overall life expectancy<sup>9</sup>? And, building upon the emergent scholarship in incontinence in equity and inclusion debates (Rosato-Scott et al., 2020) - how do workers across all ages who experience incontinence manage at work if they cannot control leaks of urine and feces and do not have adequate access to non-food items such as incontinence pads, and regular access to toilets?

The intersections of occupation with caste, class, race, religion, gender, disability and age, ultimately require much greater attention within equity and inclusion scholarship, and the WASH sector and social science research more broadly. To avoid simply listing identity characteristics, we need more detailed, and sensitive research into how these intersections (for example, caste, gender and religion, class and race, or age and disability), affect the everyday experiences of sanitation workers around the world. Whilst the questions posed assume that sanitation workers have “a workplace,” regular employment and clearly identified employers - we also know that this is *not* often the case, especially in contexts where subcontracting and outsourcing of sanitation services is increasingly the norm (reflecting a pressing need to review labor laws and employment practices). Special attention should also be paid, therefore, to the realities and priorities of informal and private workers from different backgrounds. Answering these questions requires, we argue, a mixed methodological toolkit that places an intersectional, interdisciplinary and participatory approach at the fore - something that equity and inclusion scholars and practitioners understand and apply well in their work. In putting forward such an agenda, we must also be mindful of who speaks for whom in research, policy and practice relating to sanitation work, reflecting on our own positions of privilege, questioning our assumptions, and why those associated with sanitation work (particularly Dalits in South Asia), remain poorly represented in leadership positions and debates in research, policy and practice.

<sup>9</sup> Some estimates in India suggest that life expectancy for sanitary workers sits at around 40-45 years old (Dalberg, 2017). Little is known about life expectancy in other country contexts where sanitation work occurs.

The final section below, outlines some tentative avenues forward, with these important limitations in mind.

## From rights “to,” to rights “in” WASH

Collaboration between sanitation workers, human rights activists and allies in the WASH sector and equity and inclusion community, has the potential to foster a long-lasting improvement in the experiences of sanitation workers and workers who are able to leave this occupation. Engaging directly with sanitation workers of all backgrounds through participative and action-oriented research techniques (including, for example, PhotoVoice, oral histories, participant-led video and diary making) is key to realizing the rights of, and with workers, drawing on long-established discussions on “putting the first last” (Chambers, 1997). WASH professionals including equity and inclusion experts, social workers, and social development practitioners, need to apply and adapt the techniques which have enabled them to effectively engage with people with disabilities, women and girls, to work with sanitation workers to identify the support measures they need. Whilst the Washington Group Questions<sup>10 11</sup>, can help to identify injured workers’ functional limitations, accessibility audits can ensure that their rights to WASH are not compromised by their disabilities. Feminist and queer approaches can also elevate the voices of all workers, but especially women, girls and those identifying as transgender, to raise the issues that matter to them in sanitation work, yet may remain hidden.

Existing frameworks for equity, inclusion and rights in WASH such as those developed by WaterAid (n.d) for service users require further expansion to explicitly consider the measures needed to support a diverse population of sanitation workers (and other workers) who provide essential services. A framework of standards for inclusion in the sanitation workforce should be tailored to the needs of workers from different backgrounds and reflect their diversity. As noted above, equity and inclusion frameworks need to also recognize that sanitation workers do not necessarily have a fixed workplace, or access to adequate WASH facilities where they live. Future development of these frameworks to include sanitation workers requires collaboration between sanitation workers and those working on gender issues including MHM and transgender rights, disability, labor rights and planning, to provide inclusive WASH facilities including toilets and spaces for childcare in strategic locations for workers who are constantly “on the move.” Collaborative

<sup>10</sup> The range of Washington Group Questions, including a “short” set and an “extended” set are available at this link: <https://www.washingtongroup-disability.com/question-sets/>.

<sup>11</sup> See Wilbur et al. (2022) for an example of how the Washington Group questions were used as part of assessing girls’ impairments to ensure they met the inclusion criteria for research on MHM needs of adolescent girls with disabilities in Vanuatu.

approaches could also help to identify, and support existing routes for workers to realize their rights through collectivisation and unionization, and work with relevant bodies such as municipal authorities - something that again has a long, and contested history. By better understanding “who” sanitation workers are, there is scope to address barriers to using personal protective equipment including poor fit, discomfort, “breathability” of materials, and design (WaterAid, 2020).

Existing standards for workplace inclusion, promoted by the ILO and enshrined in national law in many countries, such as maternity protection, social security, standards on annual leave, minimum pay, unfair dismissals, harassment cases, insurance and compensation for injury, and sickness support must also form part of inclusive approaches to supporting sanitation workers. Empowering sanitation workers should not just be a device to improving sanitation service delivery but rather a commitment to the human right to decent work, and human flourishing. The WASH sector advances in waste management technology, and sanitation business models should be guided by an equity and inclusion lens to gain a holistic appreciation of the intersectionality of this occupation and the intertwined challenges associated with it. That this lens should be embedded in, rather than added to the current debate seems self-evident to us. Securing the rights of all who work in sanitation is foundational to equity and inclusion. Success is indicated when workers experience safety and security within the sanitation sector as well as access to safely managed sanitation services for themselves. This centring is crucial to promote decent sanitation jobs while extending inclusive sanitation services for all, and to promoting rights “in” WASH, as well as “to.”

## Author contributions

AB and SC conceptualized the paper. AB led the design and drafting of the manuscript with SC and MZ. AB, SC, MZ, and BE

reviewed, edited, and agreed on the final manuscript. All authors contributed to the article and approved the submitted version.

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# Qualities of transformative leaders in WASH: A study of gender-transformative leadership during the COVID-19 pandemic

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**Introduction:** Equal access to water, sanitation and hygiene (WASH) for all requires leadership that prioritises and drives inclusion. Inclusive WASH also presents opportunities to advance equality more widely, with WASH a pathway to meaningful participation and empowerment for diverse groups. The concept of gender-transformative leadership—which connects ideas of leadership to transformative models of gender equality in development theory that challenge prevailing power structures—is a relevant lens for exploring inclusive WASH. This article shares findings and reflections from a positive deviance study that aimed to investigate gender-transformative leadership in the WASH sector to explore (i) the factors shaping gender-transformative leadership and the characteristics of gender-transformative leaders; (ii) actions taken by gender-transformative leaders; (iii) the types of outcomes achieved; and (iv) ways to strengthen gender-transformative leadership.

**Methods:** The study was undertaken during the COVID-19 pandemic and consisted of interviews with 19 leaders in Bhutan, Lao People's Democratic Republic, and Nepal. We developed a conceptual framework which considers leaders' (i) personal values and traits; (ii) leadership styles; (iii) actions; and (iv) outcomes, influenced by a range of (v) enabling factors and barriers.

**Results:** Leaders' personal values and traits included a strong learning orientation, social justice values, humility, courage, and altruism. Leadership styles were primarily empathetic, with leaders guided by a mission to lead by example and pursue equality in their professional and personal lives. Exploration of actions and outcomes revealed a range of inclusion-oriented WASH activities responding to pandemic-related challenges, with associated potential outcomes in shifting norms. However, validation of outcomes was not possible due to the study timeframe and complexity of tracing complex social change in a positive deviance study reliant on self-reporting. Analysis of enablers and barriers to gender-transformative leadership respectively emphasized the importance of educational opportunities and the persistence of traditional gender norms.

**Conclusion:** Findings contribute to the body of knowledge on gender-transformative leadership, being the first study to connect this concept to WASH. Future research could build further evidence by applying the conceptual framework to analyze additional contexts or sectors, and by more fully articulating and validating outcomes in terms of their potential for gender-transformative leadership to drive equality both in and beyond WASH.

#### KEYWORDS

gender-transformative leadership, gender equality, leadership, WASH, gender, transformation, inclusion

## Introduction

Gender-transformative leadership is key to driving inclusion and equality in and beyond water, sanitation and hygiene (WASH) services. It comprises part of a social-inclusion perspective that recognises the importance of both leaving no one behind in access to services, and the potential for WASH to drive inclusion and empowerment more widely. Strengthening WASH services can be a pathway to gender equality by challenging norms, creating opportunities for meaningful participation and addressing inequitable distribution of household tasks (Willettts et al., 2010; Sam and Todd, 2020). Access to WASH has been shown to create leadership and economic opportunities for women and people with disabilities (Indarti et al., 2019; Soeters et al., 2021; Huggett et al., 2022). When intentionally designed to challenge harmful social norms and structural inequalities, WASH has also demonstrated potential to drive gender equality more generally. A recent study found strong associations between gender equality related to WASH and other aspects of life beyond WASH, particularly related to women's and men's agency (Gonzalez et al., 2022). Such approaches to WASH are now widely referred to as gender-transformative, bringing feminist theoretical perspectives to bear such that WASH activities have potential to drive both inclusion and wider equality (MacArthur et al., 2020, 2022).

To realise the dual aims of inclusive WASH and transformative change, leadership is required that challenges the status quo and builds momentum towards greater equality. Such forms of leadership can be termed transformative or transformational leadership. Initially defined by Burns (1978), the concept of transformational leadership was presented as an alternative to transactional leadership. Transformational leadership offered a model of leaders who engaged motives, worked to improve their team's capabilities, were visionary and sought systems change (Burns, 1978, as cited in Stewart, 2006; Hawkins et al., 2022). The concept has been discussed with reference to education, where 'instructional' leadership models focused on goals and curriculum are contrasted with

transformational leadership focused on restructuring and improving school conditions (Stewart, 2006). Transformational leadership has also been widely explored in organisational research, where transformational styles have been associated with organisational effectiveness in diverse institutions (Bass, 1999).

More recently, transformative leadership has emerged as a progression of transformational leadership that emphasises the connections between beliefs, actions, and inclusive outcomes. Transformative leadership ideas draw on Burns' foundational work, but rather than focusing on outcomes of effectiveness and efficiency, transformative leadership theory places greater emphasis on beliefs and actions that challenge inequity and promote inclusion (Shields, 2020). Transformative leadership also recognises leadership as a diffuse and collaborative process, as characterised by (Montouri and Donnelly, 2018, p. 319): "[t]he basic premise of transformative leadership is that everyone can lead, and that particularly in this transformative moment, everybody contributes to, and in fact co-creates, the world we live in, whether conscious of their agency or not." The idea that leadership can be exercised in relational and non-hierarchical ways sees leaders as diverse agents of change, with transformative leaders those that pursue equity and inclusion both within and through their roles.

The clear connections between 'transformative leadership' and 'gender-transformative' concepts have sparked interest in the potential for 'gender-transformative leadership' to drive gender equality, most notably in health and development fields. From the health sector, Hawkins et al. (2022) propose a definition of gender-transformative leadership as "leadership which seeks to address gender inequities in power which perpetuate and reinforce inequities across different systems and structures of oppression" (Hawkins et al., 2022, p. 6). The definition draws on the work of Keeling et al. (2018) who also emphasise that rather than placing the burden of change on women to 'lean in' to roles they have been excluded from, gender-transformative leadership aims to address the biases and discriminatory practises that perpetuate deep-rooted structures of inequality. Beyond the health sector, similar concepts have

been used by UN Women in leadership training offerings, which define gender-transformative leaders as those “*who empower themselves and their organizations to pay close attention to gender power structures and discriminatory practices—both formal and informal—in order to advance gender equity in their organizations as well as in the communities and constituencies they serve*” (UN Women, as cited in [Jhpiego Corporation, 2020](#), p. 1).

As the WASH sector progresses its thinking about gender transformative approaches ([MacArthur, Forthcoming](#)), it is timely to explore the role of gender-transformative leadership in driving inclusion both within and through WASH initiatives. To date, there has been limited exploration of gender-transformative leadership in the WASH sector, with few documented examples. One—an analysis of Oxfam’s programming in Africa (across WASH and other sectors)—found that transformative leadership advanced women’s rights by prompting critical discussion about deeply held values and prejudices ([Brown et al., 2019](#)). Another example analysed participatory water management structures in Brazil from a feminist transformative leadership perspective, finding that participatory approaches may facilitate women’s political involvement ([Moraes and Perkins, 2007](#)). Beyond WASH, gender-transformative leadership has been given focus in health (e.g., [Keeling et al., 2018](#); [Hawkins et al., 2022](#)), though this work tends to conflate gender-transformative leadership with women’s leadership. While women’s leadership is a crucial component of transformative change, assuming the two are equivalent may obscure opportunities for gender-transformative leadership to be conceived as a process through which everyone can co-create more equal societies. As such, there is an opportunity to build on evidence about the potential for gender-transformative leadership to advance gender equality both in and through WASH programs, exploring the role of leaders in challenging unequal power dynamics and striving for greater equality.

The COVID-19 pandemic context presents both barriers and opportunities for gender-transformative leadership in WASH. On one hand, the highly gendered nature of the pandemic ([Simba and Ngcobo, 2020](#); [Wenham et al., 2020](#); [Herten-Crabb and Wenham, 2022](#)) has highlighted how structural inequalities continue to impact women’s roles and experiences. On the other, the disruptions brought by the pandemic and responses present opportunities for social innovations that can drive transformative change ([Montgomery and Mazzei, 2021](#)). The central importance of WASH in pandemic response and preparedness is clear from a health perspective ([Howard et al., 2020](#); [Donde et al., 2021](#)). Yet less attention has been given to the ways in which COVID-19, WASH, and gender-transformative concepts interconnect. A key question is how to leverage the changes brought by rapid pandemic responses to strengthen and create opportunities for gender-transformative leadership, both in and through WASH.

This article shares a study of gender-transformative leadership in WASH undertaken in three countries during the COVID-19 pandemic. This study contributes evidence on the characteristics and actions of gender-transformative leaders working in a variety of WASH roles, exploring how leaders’ values, relational styles and actions might contribute to inclusion within and through WASH-related activities. We first describe the study’s positive deviance approach, which sought to generate knowledge and learning while also celebrating and inspiring gender-transformative leadership through the research process. As part of the approach, we present the conceptual framework that guided questions and analysis, which offers a replicable frame for engaging with the characteristics, outcomes and contextual dynamics of gender-transformative leadership. Findings are presented and discussed across three dimensions: characteristics of gender-transformative leaders, considerations for strengthening gender-transformative leadership, and participant and researcher reflections on the research approach.

## Approach

This qualitative study of gender-transformative leadership in WASH was undertaken in Bhutan, Lao People’s Democratic Republic (Lao PDR), and Nepal during the COVID-19 pandemic in 2021. The study adopted a positive deviance approach ([Bradley et al., 2009](#)), purposely seeking leaders identified as operating in a gender-transformative manner. We also drew on strengths-based research ideas, eliciting success stories and seeking to inspire positive action. The approach built on a previous application of strengths-based approaches for evaluation of gender-WASH dynamics ([Willett et al., 2013](#)). By taking a positive deviance approach, and inspired by strengths-based approaches, the team aimed to celebrate and recognise the participating leaders for their contributions to gender equality in or through WASH and to generate useful insights that might support other gender-transformative initiatives, much needed for recovering from the various negative impacts of the pandemic.

We also sought alignment with the transformative research paradigm ([Creswell, 2014](#)), which promotes social justice and demands conducting research *with*, instead of research *on* participants. Transformative research ideas were applied by inviting and supporting participating leaders to contribute to, review, and co-develop outputs, as well as co-defining ways in which the research could be beneficial to them through sharing their stories and promoting their achievements with the wider international WASH sector. As such, we produced a diversity of non-traditional research outputs targeting different audiences that shared leaders’ experiences in their own voices. The outputs included a visual research report [UTS-ISF and SNV, 2021a](#), a learning brief [UTS-ISF and SNV, 2021b](#)), a series of six blog



stories featuring two selected leaders from each country (e.g., Kumar et al., 2021b) and accompanying video stories (SNV and UTS-ISF, 2021a), two presentations at an international conference, and a webinar.

To ensure the rigour and validity of this qualitative study, we employed criteria for qualitative research quality, namely: credibility, dependability, confirmability, transferability, and reflexivity. In particular, in this article we have included many direct quotes from participants to contribute to dependability and confirmability and substantiate our findings, and have made transparent our methodology and the research context to support credibility and transferability. Reflexivity was supported by ensuring a diverse research team, conducting team sensemaking processes and including researcher reflections in this article. A complementary approach would be to employ quantitative measures of transformative leadership. This was not appropriate or possible due to the lack of agreement around such indicators, and concerns that current measures have a limited theoretical basis and are generally designed for examining leadership in the private sector (Jensen et al., 2019).

This study was conducted in partnership between researchers from the University of Technology Sydney's Institute for Sustainable Futures (UTS-ISF) and WASH practitioners from SNV in each country. Both organisations had pre-existing and long-standing relationships and took a collaborative approach to the research. SNV had a long-term presence in each country implementing WASH programmes with a strong emphasis on systems strengthening and working with government and non-government sector leaders in each country. This study was based on local knowledge and experience and sought to strengthen SNV's responses and coordination mechanisms in each of the three countries. This study was conducted under the Australian Government's Water for Women Fund, as part of their COVID-19 initiatives to support the response and recovery across Asia and the South Pacific.

Each step of the process (Figure 1) was influenced by the collaborative research partnership, from identifying the research need, to co-designing the research approach, to undertaking the different research activities related to data collection and analysis, and lastly to co-producing research outputs. This co-production approach was designed to ensure quality research that also had potential to facilitate learning for all involved (Winterford, 2017; Pereira et al., 2020).

## Study aims

This study aimed to investigate gender-transformative leadership in the WASH sector to identify and explore: (i) the factors that shape gender-transformative leadership and the characteristics of gender-transformative leaders; (ii) the actions gender-transformative leaders take and how they carry them

out; (iii) the types of outcomes gender-transformative leadership can achieve; and (iv) the ways in which gender-transformative leadership can be strengthened. As described above, through an explicit transformative, positive deviance approach, the research also sought to inspire other leaders, current and emerging, to adopt gender-transformative approaches.

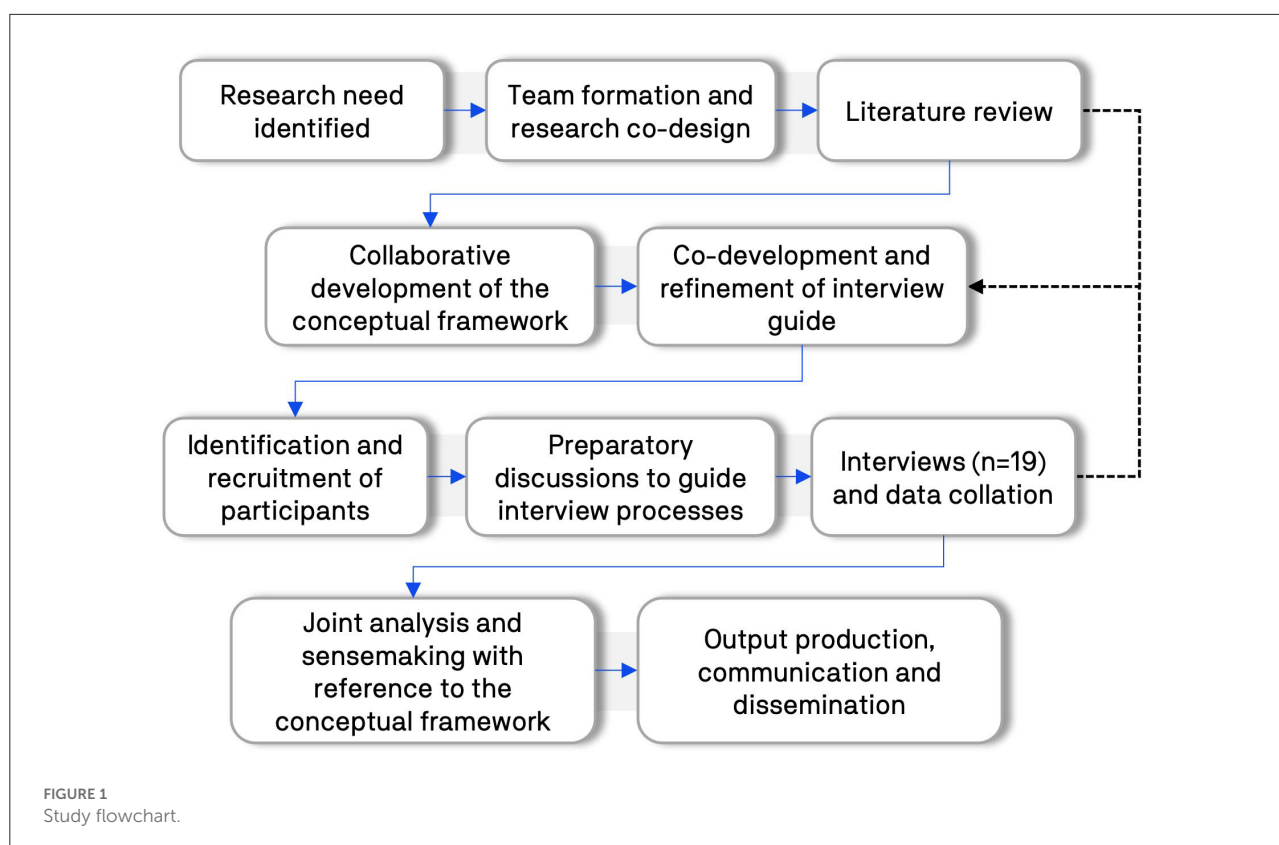
## Study contexts

This study was conducted as part of SNV's Beyond the Finish Line (BFL) programme, a five-year multi-country programme (2018–2022) funded by the Australian Government's Water for Women Fund. The BFL programme aimed to improve rural WASH services in Bhutan, Lao PDR, and Nepal, and adopted country-specific approaches based on country priorities. The programme took a systems strengthening approach and a strong focus on gender equality and social inclusion, in alignment with the Water for Women Fund objectives. Implementation of the BFL programme took an area-wide approach in each country fostering local government leadership, collaborating with rights-holders organisations, and engaging with leadership at the national level.

In Bhutan, the BFL programme focused on working with local leaders to improve inclusion and equality in and through WASH, through initiatives such as 'leadership for change' and 'making rights real'. The programme employed technical support and evidence-based advocacy combined with knowledge and learning processes to strengthen the capacity and performance of three national and eight sub-national government authorities and two civil society partners in eight districts. In four of the eight districts, the programme focused on leveraging political commitments, decentralisation, and cost-sharing mechanisms to achieve area-wide access and usage of WASH services for all, including households, schools, and institutions. In the remaining four districts, the programme focused on going 'beyond the finish line' of open defecation-free status, which included institutionalising strategies to ensure duty bearers and services had improved capacity to identify, reach and respond to the needs of potentially disadvantaged groups including people with disabilities, female-headed households, the elderly, and the poorest households. The onset of the COVID-19 pandemic resulted in delays in programme activities. There were no COVID-19 outbreaks in Bhutan while the study was being conducted. As part of the national COVID-19 response, SNV supported new handwashing stations and worked closely with local governments.

In Lao PDR, the implementation of the BFL programme focused on supporting the provincial and district authorities in three districts of Savannakhet Province, working with existing systems and resources to strengthen rural sanitation in vulnerable flood-prone areas. In each district the programme was implemented by teams comprising officials from public





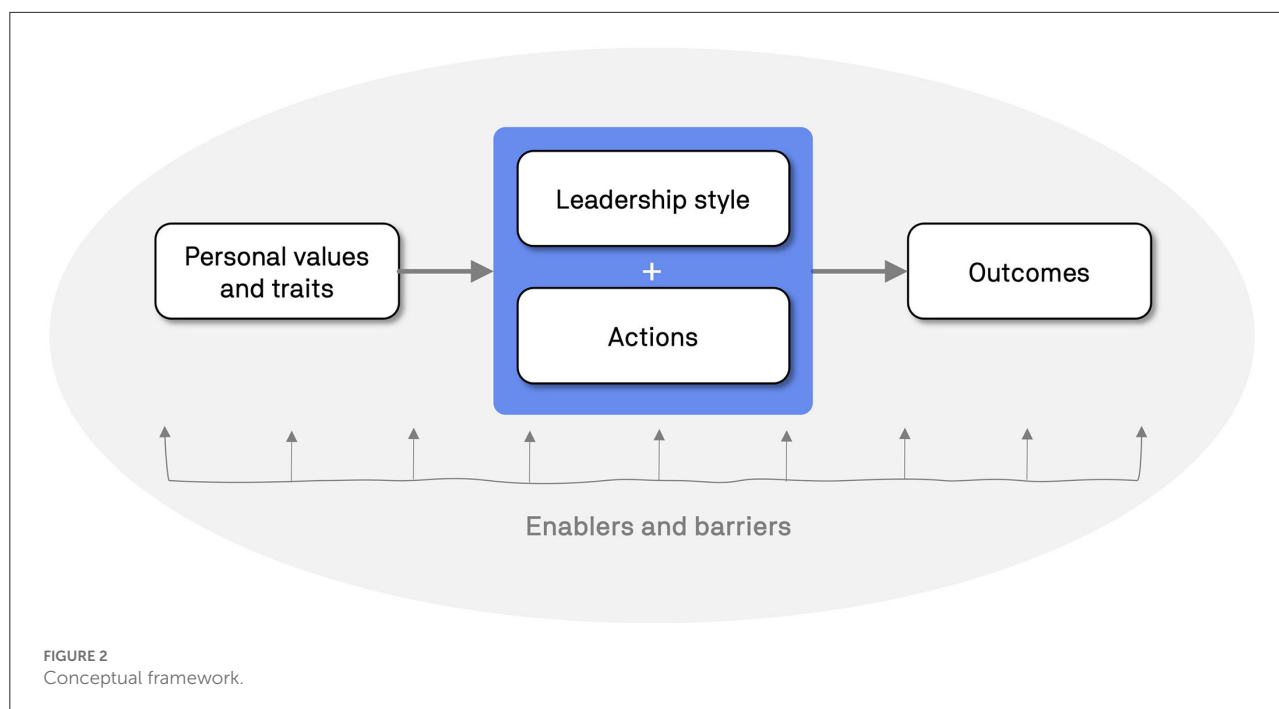
health, education, planning, the women's union, and the youth union. With an emphasis on capacity strengthening for government officials, activities included gender equality and social inclusion (GESI) training, technical support and coaching in forms designed to enable government leadership. During the height of the COVID-19 pandemic, Savannakhet province had the highest number of cases and was affected by lockdowns and other restrictions. SNV supported government pandemic response initiatives including a communication campaign on the importance of soap, safe handwashing, and other protective measures against COVID-19.

Implementation of the BFL programme in Nepal focused on working with the newly formed local government (Rural Municipalities) through water supply operators and support service providers, and with civil society and rights-holder groups to capacitate and build strengthened WASH sector systems. The programme leveraged the opportunity of government decentralisation to develop inclusive, sustainable, and resilient water supply services in eight rural municipalities in Dailekh and Sarlahi Districts as role models for inclusive WASH services. The programme paid special attention to the inclusion of people from sexual and gender minorities and people with disabilities. This was based on an aspiration to include and promote the leadership and voice of such often socially excluded groups

with the intent that this would result in gender and social inclusion outcomes. Throughout the COVID-19 pandemic, SNV continued its commitment to strengthen governance in WASH through continuous coordination and collaboration with local governments and took actions to provide immediate relief. These actions included designing and installing foot-operated disability-inclusive handwashing stations, outreach campaigns to people at risk of marginalisation, delivering awareness communication campaigns in communities, and promoting online platforms for dissemination of information to support local governments.

## Conceptual framework

We developed a conceptual framework to inform interview questions and guide analysis. The framework was based on a rapid review of academic and other literature on transformative leadership and gender-transformative leadership. Aligning with the ideas that leadership is diffuse and relational (Montouri and Donnelly, 2018), and connected to social justice-oriented beliefs (Shields, 2020), the framework spans personal, relational, and action-oriented dimensions. It comprises five components: (i) personal values and traits, (ii) leadership style, (iii) actions, (iv) outcomes and (v) enablers and barriers (Figure 2). The



framework reflects a simplified theory of change in which personal values of a leader drive their leadership styles and actions, which in turn generate WASH and gender-transformative outcomes. Contextual enablers and barriers mediate all stages of the process and operate at multiple levels from individual circumstances through to organisational cultures, social norms, and structural factors. We acknowledge that reality is inevitably more complex and iterative, given that social change is rarely linear and can be shaped by multiple interconnected and unpredictable factors. Yet in designing the framework a key consideration was balancing conceptual rigour with practical usability as determined by research partnership team discussion. This approach aligns with a pragmatic research orientation that justifies shaping social inquiry as appropriate to the pursuit of normative goals (Kaushik and Walsh, 2019).

Including **personal values and traits** recognises the fundamental role of values in driving transformative action (Brown et al., 2019) and combines aspects of what Montouri and Donnelly (2018) refer to as a leader's 'way of being' and 'way of knowing'. Exploring leaders' worldviews, consciousness and personal principles offers the opportunity to identify whether particular values commonly underpin transformative leadership, and how these manifest in leadership styles and actions.

**Leadership styles** describe how a leader conducts themselves and communicates with others. **Actions** refer to what a leader actually does in their role. The rationale for distinguishing leadership styles from actions is that modes of engagement critically shape transformative leadership

*"as an 'everyday, everyone, everywhere' relational process"* (Montouri and Donnelly, 2018, p. 322). Exemplifying the everyday practises and processes, actions offer tangible examples of how leadership is exercised to achieve change. While the boundaries are inevitably overlapping given the inextricable nature of styles and actions, leadership styles broadly align with Montouri and Donnelly's (2018) conception of a leader's 'way of relating', while actions reflect their 'way of doing'.

**Outcomes** refer to the changes that occur as a result of a leader's actions and leadership style. Outcomes of gender-transformative leadership might include changes in rules, policies, formal institutions, systems, structures, and decision-making (Brown et al., 2019; Soeters et al., 2019a). Outcomes can be individual or collective and can span practical or strategic interests (after Moser, 1993). An important consideration is that outcomes may be intangible and challenging to comprehensively map, given the conceptualisation of transformative leadership as involving small actions with cumulative effects (Montouri and Donnelly, 2018).

Lastly, **enablers and barriers** capture the contextual dynamics that influence a leader's values, style, actions, and associated outcomes. Such dynamics include diverse and dynamic personal, collective, relational, and structural factors and experiences. We include contextual factors in the framework in recognition of their potential to drive or undermine gender-transformative leadership in different places and points in time. We also specifically included barriers to identify and acknowledge the challenges (e.g., norms and exclusionary

practises) that gender-transformative leaders must grapple with when seeking to influence change towards greater equality.

## Data collection

We conducted 19 in-depth semi-structured interviews with leaders across the three countries between January and April 2021. The relevant SNV country teams identified the participants, with a primary criterion focused on leaders who were considered to positively contribute to gender transformations in the WASH sector in their local contexts. We also aimed to ensure representation of a diverse group of leaders. The relevant guiding criteria included a broad definition of leadership (both formal and informal leaders), leaders with experience working in WASH or health, ensuring at least two genders represented, a spread of emerging, mid-career and senior leaders, people with disabilities, and minority and majority ethnic groups where relevant.

Question prompts are provided in the [Supplementary material](#). The interviews sought to evoke personal stories and reflections, in line with our conception of transformative leadership as combining personal with social ways of being and relating (Montouri and Donnelly, 2018). We asked participants about themselves and their roles, their experience of gender leadership during the COVID-19 response, their personal perspectives on leadership, leaders' visions for gender equality and ideas for enabling gender-transformative leadership, and next steps for the research, including how the team could make the research beneficial to them. Responses were recorded through written notes as well as audio recordings.

All the interviews were conducted by the local SNV teams in the participants' local language, and one interview was conducted jointly by SNV and UTS-ISF in English. Where possible, the interviews were conducted in person, taking the necessary precautions to mitigate the risk of COVID-19 transmission.

Ethical approval to conduct the research was obtained from the University of Technology Sydney prior to data collection, and informed consent was obtained from all respondents. Acknowledging the potential sensitivity of the discussions and the positions of several leaders as having lived experiences of barriers to leadership, interviewers were trained on ethical research principles and approaches, and briefed on appropriate responses to participant distress. Participants reviewed and approved the research outputs before publication, including seeking permission to use some quotes in this paper with identification of relevant leaders.

## Data analysis and sensemaking

All the interview data were translated into English and transcribed by the interviewers. We manually coded

the transcribed data in Microsoft Excel by first using a deductive analysis approach derived from the conceptual framework to categorise data into the five main framework components. We then used an inductive approach to identify the emerging themes within each component. We undertook a frequency analysis to identify stronger themes. In the thematic analysis we disaggregated responses from men and women leaders to understand differences or alignment between groups. Thematic analysis was undertaken by two researchers to check for consistency and divergence in interpretation.

Following the initial thematic analysis, we conducted an online sensemaking workshop with the three-country research team to (i) share, discuss and validate the preliminary findings; (ii) create space for a group reflection on the research and its implications for the WASH sector; and (iii) decide on the approach to share draft documentation with participants to seek their feedback and approval to use selected quotes.

## Results and discussion

In this section we present and discuss findings from the interviews with 19 leaders and research team collaborative sensemaking. We first present insights on the characteristics of gender-transformative leaders, followed by values, styles, actions, and outcomes. We then discuss considerations for strengthening gender-transformative leadership arising from our exploration of enablers, barriers and leaders' visions. Finally, we reflect on the research approach as a collaborative means to inspire and strengthen gender-transformative leadership, before reflecting on limitations and challenges.

When illustrating findings with research data in the form of quotes, we have attributed some quotes to participants where permission was given to do so, and with a view to profiling and celebrating the leaders involved. Where quotes include sensitive information, we have de-identified the contributions.

### Characterising gender-transformative leaders

The participating leaders worked in a range of organisations and played diverse roles in the WASH sector. They included three leaders in national government positions (one woman and two men), seven in sub-national government positions (four women and three men), five in local rights-holders organisations (three women and two men), and four NGO workers (one woman and three men). Four of the 19 leaders were people with disabilities, and one worked for an organisation for people with disabilities. Participating leaders were between 19 and 65 years old, and the median age of participants was 40. Six of the leaders held senior leadership positions, nine were mid-level, and four

**TABLE 1** Number of participants disaggregated by country and gender.

	Bhutan	Lao PDR	Nepal	Total
Women	2	5	2	9
Men	3	1	6	10
Total	5	6	8	19

were early career leaders. Only two genders were represented, with the gender breakdown by country shown in [Table 1](#).

### Personal values and traits

The data showed compelling evidence of strong social justice and feminist values among gender-transformative leaders, with all 19 participants expressing a desire to do right by those in positions of disadvantage, particularly during the response to COVID-19. Participants linked these values to personal experiences. In some cases, direct personal experiences of discrimination relating to disability or gender shaped justice-oriented values, in other cases they were connected to observed instances of disadvantage. One participant shared:

*“In the community, women are discriminated against by family. They face violence in the house. I also faced discrimination and violence from my in-laws. I want to stop violence toward women. Hence gender equality and inclusion issues became my priority.”* - Participating leader

Related to these values, leaders expressed that striving for equality was central to the work they did, linking their daily work to the pursuit of wider social change.

Leaders also demonstrated a strong learning orientation (12 of 19 participants), expressing openness to learning from others and curiosity about new ideas, and framing life-long learning as critical for being a good leader. One respondent said:

*“One needs to want to lead with an attitude to learn [...] I openly acknowledge that I don’t know everything and I’m willing to listen and learn from others. It’s always important to keep doors open to learning and creating an environment for all to learn and thrive.”* - H.E. Dechen Wangmo, Minister of Health, Government of Bhutan

Another participant with similar views shared:

*“I am a person who likes to learn. I like to try new things, learn from others and reflect about myself. Now, I have better experience in leadership and I guide others, but I do not stop learning. If I do not learn, I cannot perform the leadership tasks well. For example, when COVID came, I learned from young staff in my team how to use Zoom, WhatsApp and*

*meeting online, and new knowledge on COVID.”* - Chomsy Ngamvilay, Deputy Head of the Atsaphone District Health Office, Savannakhet Province, Lao PDR

Humility was linked to a learning orientation, with leaders expressing traits of being open to learning from others, aware of diffuse expertise and seeing themselves as enabled by the people around them.

Some leaders were driven by a wish to prove themselves (eight participants), a trait most commonly reported by women leaders or leaders with a disability. While the situation of leaders reporting this characteristic attests to their sense of agency, the finding also suggests they experience the burden of breaking barriers in contexts where social norms continue to prescribe leadership as predominantly the domain of men and able-bodied people (as described by [Ryan and Haslam, 2007](#)). Respondents shared:

*“Women themselves also need to prove that they can be a leader.”* - Participating leader

*“I wanted to show the community that people with a disability can do everything.”* - Rajesh Sahani

Other common attributes that emerged from the data were self-reflection, courage, trustworthiness, altruism, the ability to inspire, motivate and mobilise others, and being a role model for others. Having excellent communication skills as demonstrated by being a good listener, eloquence, and delivering clear and consistent messages were also highlighted. Additionally, optimism in the face of challenges, which had a positive effect on others, as well as working with dedication, passion and commitment were seen as important leadership traits by participants.

The range of values and traits identified in our sample of leaders broadly aligned with those described in literature on transformative leadership and leadership for women’s rights—particularly the social justice orientation and feminist values ([Brown et al., 2019](#)). A social justice orientation also speaks to [Montouri and Donnelly’s \(2018\)](#) ‘way of being’ that emphasises the role of transformative leaders as continuously creating the world around them, while a humble learning orientation suggests reflective capability and openness to uncertainty in alignment with a transformative leadership ‘way of knowing’ ([Montouri and Donnelly, 2018](#)).

### Leadership styles

The leadership styles of gender-transformative leaders were primarily empathetic (12 of 19 participants), particularly during the COVID-19 response. Styles were shaped by and reflected the above-mentioned values including altruism, social justice, equality, and working with dedication, passion, and

commitment. The pandemic highlighted the gaps and needs of people at risk of exclusion and marginalisation, to which the participating leaders responded by prioritising said populations, specifically, women victims of gender-based violence, the elderly, and people with disabilities. During the COVID-19 response participating leaders also reported prioritising supporting their staff to ensure their wellbeing.

Gender-transformative leaders were also found to lead by example (11 leaders) and to pursue equality in their professional and personal lives, which was associated with the traits of being a role model and motivating and mobilising others, as described above. One respondent said:

*“Gender equality and social inclusion have become a very important issue for me. In fact, when I worked in the community, I handled many cases of violence against women which was much related to household roles and responsibilities. The women complained about being overloaded with work and faced violence when they were not able to complete the work on time. Initially, to mitigate such problems, I used to conduct orientation and training programs only for women. But then I realised that this is not the best option to reduce violence against women, so I started bringing both men and women together in one place to train them on equal responsibility for men’s and women’s household chores, gender equality and gender balance. The result was very positive which encouraged me to work in GESI as well as to change my behaviour. I started to support my wife in household chores. My family now teases me for working in the kitchen, as I would otherwise never enter the kitchen a few years back. When people of the community inquire if I myself apply what I say in my own home, I gladly respond that I do.”*  
- Madan Kumar Barma, Project Coordinator, SNV Nepal

Another respondent said:

*“I have never stopped raising my voice for women and marginalised people in my society as well as in my home.”* - Ambika Yadav, Sarlahi District Coordinator, SNV Nepal

The leadership styles identified were generally underpinned by teamwork, with six leaders reporting they led with an ‘open door’ policy to welcome new ideas and collaboration. Over a third of leaders demonstrated inclusive leadership styles by involving and giving voice to others, as well as actively seeking others’ input and participation and not elevating their own status. These styles were linked to the values of humility and a learning orientation described above. One leader stated:

*“I firmly believe that everybody, irrespective of who they are, has things to contribute. Valuing other people’s potential and always keeping my door open to my subordinates,*

*nourishing the relationships that support my leadership is important to me.”* - H.E. Dechen Wangmo, Minister of Health, Government of Bhutan

Gender-transformative leadership styles were shaped by goal- and vision-orientations (seven participants) and over a third of leaders demonstrated strategically influencing people at both the community and government levels in order to effect change. Participants enacted persuasive leadership styles (six of 19 participants) by building consensus and convincing others to see the importance of gender equality and social inclusion in their own work. This sometimes led to criticism and backlash within communities and among peers, which leaders were equipped and experienced to manage, with some leaders expressing feeling energised by and not shying away from these challenges.

Less common leadership styles that emerged from the research included leadership of self (four of 19 leaders), which involved self-reflection and actively seeking feedback from others. Two leaders demonstrated risk-taking leadership styles, linked to the value of courage. Lastly, adaptive management styles and having flexible plans without compromising the overall goal were also highlighted by two leaders.

The gender-transformative leadership styles identified at the time of the research aligned with those outlined in gender-transformative literature, which describes gender-transformative leadership styles as motivating, caring, collaborative and collective (Brown et al., 2019; Soeters et al., 2019a; Fuhrman and Rhodes, 2020). Styles also matched a transformative ‘way of relating’ that rejects binary oppositions (e.g., leader/follower) and pursuit of the creation of mutual benefit (Montouri and Donnelly, 2018). A particular contribution of our study is the inclusion of men demonstrating transformative leadership styles, which offers empirical examples of cases where such styles—often described as ‘feminine’ leadership attributes (Billing and Alvesson, 2022; Saseanu et al., 2014)—can be enacted by women or men in all their diversity for the progression of gender transformations. As such, this research affirms the value of having all genders engaged as leaders in the realisation of women’s rights and gender equality and inclusion (Brown et al., 2019; Soeters et al., 2019a; Meagher et al., 2020).

## Actions

Illustrative actions taken by gender-transformative leaders were captured in the form of stories and specific examples of efforts leaders had made to ensure that their work was gender-transformative and supported social inclusion, particularly during COVID-19. All the leaders shared compelling stories of actions they had undertaken, which were closely aligned



with the personal values and traits and leadership styles previously described.

Leader's actions were diverse. Actions within government included enabling women's participation in the workplace through building a breastfeeding room in a public government office and supporting younger women in the workplace to move up into higher roles and leadership positions in local government. Other actions included championing gender mainstreaming into public health and WASH work at the local government level, providing mentorship to younger staff, and seeing value in building others' skills and knowledge up. Importantly, actions included involving men in gender-related training and activities because *"it is not just about telling men, but also about involving them"* (Participating leader, man). Encouraging men's participation was also a strategy to manage resistance and backlash to gender transformations and to start conversations about gender equality together. Finally, a leader reported placing the vulnerable at the centre of the COVID-19 response by mobilising teams to call all the elderly people in the country, ensuring their safety and well-being during the pandemic.

A particularly compelling story of gender-transformative actions during the pandemic is one from a participant from Nepal (Box 1). Her actions highlight her efforts to improve WASH services for all during the pandemic, and reflect her personal journey of overcoming personal barriers and limitations within a conservative community with strong patriarchal norms.

## Outcomes

The outcomes achieved through gender-transformative leadership were difficult to ascertain in this research, which was not designed to be evaluative. As such, we instead sought perspectives on possible or expected outcomes, self-reported by leaders, as a means to explore the potential for gender-transformative leadership to drive positive outcomes, and as a basis for further research.

When exploring outcomes, we took guidance from literature asserting the potential for gender-transformative leadership and programmes more generally to drive structural change towards equality. Literature has asserted the potential for gender-transformative leadership to drive changes in social norms and perceptions of women leaders (Mulder et al., 2019), in formal and informal decision-making practises (Brown et al., 2019), as well as tangible improvements in access to quality services such as water, education, and healthcare (Brown et al., 2019; Soeters et al., 2019a). In this study, while we did not expect to identify and attribute significant outcomes to specific leadership actions, we did wish to highlight the transformative potential of practises featured as strengths. As such, interviews explored short-term outcomes and potentially

catalytic changes self-reported by participants, with a view to identifying indicative or illustrative examples.

The self-reported outcomes were categorised into societal (external) and personal (internal) changes. Societal outcomes were diverse and predominantly referred to inclusive service provision and contributions to broader systemic changes. Specifically, leaders mentioned achieving the placement of groups at risk of exclusion at the centre of the COVID-19 responses (12 of 19 participants); improving quality WASH services for all (eight participants) particularly related to access to water and hand hygiene behaviours during COVID-19 response and prevention; and delivering inclusive health services (five participants).

Leaders shared several examples of societal outcomes related to efforts made towards achieving systemic changes within rural communities and institutions. Outcomes spanning both communities and institutions included changes in the public's negative perceptions of women leaders (three leaders), an increase in women's participation in the workplace and as beneficiaries of activities in the community (nine leaders), and perceived higher awareness of the need for gender equality and social inclusion among community members and in professional bodies (four leaders). In communities, five leaders reported changes in gender social norms related to the division of household work, decision-making, and women's access to education and work. Lastly, specific institutional societal outcomes included an increase in girls' access to education (two leaders); cultivating an intergenerational legacy of gender-transformative leadership through mentorship (two leaders); and changes in national policy concerned with women's and children's health (one leader).

Related to changes in perceptions about women leaders, one participant said:

*"I am pleased and really proud of how my leadership has encouraged women in my community to come forward and to participate. My work also made people realise the importance of diversity of voices in the decision-making rooms, particularly on the importance and value addition of women leaders."* - Namgay Pelden, first female Gup (local elected leader), Dagana District, Bhutan

Two personal outcomes were identified. The first one was associated with a sense of personal satisfaction (more commonly expressed by men) as a result of the outcomes achieved throughout their careers and their influence on others (10 leaders). One respondent expressed:

*"I get a sense of satisfaction when I am able to bring positive changes in others. I try to cultivate these aspects in my own leadership style."* - Rinchen Wangdi, Chief of Public Health Engineering Division, Department of Public Health, Bhutan

**BOX 1 Improving WASH services for all during the pandemic, the story of Ambika Yadav.** Source: Adapted from [Kumar et al. \(2021a\)](#) and [SNV and UTS-ISF \(2021b\)](#).

Ambika Yadav is a community leader and an active advocate for GESI in her personal and professional life. Ambika reported playing a bold and pivotal role to ensure the continuation of WASH services in the communities where she worked, taking the risk to go out into the communities to provide services during the peak of the pandemic.

Her team started by conducting a WASH sector gap analysis with the local government to identify the vulnerable groups whose access to sanitation and handwashing facilities was impacted by COVID-19. The results from the gap analysis led to the installation of GESI-friendly contactless (foot-operated) handwashing stations in public places and quarantine centres. In turn, these efforts led to significant improvements in hygiene behaviours among women, children, people with disability, elderly people, and members of minority groups.

Ambika was also proactive in mobilising her team to spread awareness about the importance of physical distancing and handwashing with soap through mobile messaging, particularly among people with disabilities. This resonates with her belief in creating an enabling environment for people with disabilities and empowering them in every way.

Ambika is motivated to challenge gender and social norms, particularly within her community, which restricted her access to education and to work outside the home when she was younger:

*"Living in a community that largely had reservations about sending girls to school, and having a daughter who lives with a disability, drove me to take action professionally and personally."*

She continues to advocate for equal participation of women and marginalised groups in society, including in the Rural Municipal WASH Coordination Committees, and has collaborated with various rights-holder organisations. Ambika believes that a leader should be bold and should invest in building strong relationships:

*"Twenty-five years of my professional journey have taught me that trust is the strong bone of leadership. Clear determination, dissemination of information in the right manner, and regular communication has helped to build trust with stakeholders in the community and has supported me in influencing them."*

And another one said:

*"I feel proud that local government has been focusing their activities on the most vulnerable in the community because of our facilitation."* - Madan Kumar Barma, Project Coordinator, SNV Nepal

The second personal outcome referred to the leaders' increased self-confidence (nine leaders) in both their abilities as leaders and how being a leader made them a more self-confident person. One woman leader expressed:

*"My own leadership changed my economic status, built my confidence, and empowered me. I am not economically dependent on family and now I feel I am respected by other people in my community. I can confidently speak and raise my voice for women's rights and the rights of people with disabilities."* - Suchitra Chaudhary, School teacher and Member of Disabled People Organization Network, Nepal

Another leader said:

*"My work changed me a lot, especially my self-confidence, and helped me appreciate my ability."* - Silivanh Khamsingsavath, Accountant and Secretary, Lao Disabled People's Association, Savannakhet Province Branch, Lao PDR

Leaders' self-reported outcomes were diverse and spanned societal and personal changes. Although difficult for leaders to articulate and for the researchers to independently verify, leaders' self-reported outcomes provide sufficient evidence of plausible contributions of gender-transformative leadership to positive social change in and through WASH.

## Strengthening gender-transformative leadership

In this section we present and discuss the enabling factors, barriers, and leaders' visions and wishes for the future. These three factors evoke pathways for contributing to strengthening gender-transformative leadership.

### Enablers

There was very strong evidence of external support from others as a main enabling factor for gender-transformative leadership. External support was perceived to come from different levels, categorised into domestic sphere, professional sphere, and external organisations and networks. Support in the domestic sphere (reported by nine participants) included family members relieving leaders from domestic chores and childcare allowing them more time in professional roles, and was particularly highlighted by women. Families also

provided emotional support and encouragement. Support in the professional sphere (reported by 14 participants) generally came from bosses, colleagues or teachers through mentoring, professional opportunities, constructive feedback, and advice. Support from external organisations and networks (reported by 10 participants) was received through access to capacity building opportunities and exposure to new ideas. Reflecting on the support she received from other leaders, a participant expressed:

*"I am in this position because of the leaders who trusted my capacity and ability. I could complete the tasks assigned by my boss when I was a technical staff [...] I also have learned from other senior women leaders at the Provincial Health Department, who have been my role models."* - Souksakhone Kothliengthong, Head of the Health and Hygiene Communication and Promotion Unit, Savannakhet Province, Lao PDR

Other enabling factors included access to education and training (12 participants), though this was also expressed as a challenge for some women leaders and leaders with disabilities. Leaders expressed that accessing education and training gave them the right academic qualifications and built their self-confidence, credibility, and trust from others. Access to role models (three participants), mentorship, and capacity building opportunities (five participants) also supported leaders to gain confidence, knowledge, and skills. Enablers identified by participants reflected those described in gender-transformative leadership literature, which particularly highlights the importance of knowledge, transformative learning experiences, apprenticeships, and mentorships (Brown et al., 2019; Soeters et al., 2019a; Fuhrman and Rhodes, 2020).

Lastly, four leaders expressed that their personal experiences of disadvantage or direct contact with those in disadvantaged positions shaped them to be the gender-transformative leaders they are and gave them direction in their journeys as gender-transformative leaders.

## Barriers

Barriers to gender-transformative leadership in the WASH sector were diverse and ranged from personal experiences of discrimination, to wider social resistance and backlash, to formal and institutional structures and policies. The majority of participating leaders expressed great difficulty in overcoming harmful gender and social norms to drive change within the communities where they worked (13 of 19 leaders). Additionally, women leaders and leaders with disabilities articulated having to overcome these harmful norms in their personal lives and for their professional advancement, for example, when trying to access education and join the workforce, which in their respective communities was not the norm for women or people with disabilities.

*"I experienced people not welcoming me to go to school because I am a person with a disability. I wanted to see changes by starting from myself to show them that I have ability and I can do many things. I can take a job. This is what I wanted people in society to accept people with disabilities and this gave me energy to create change in society, office and within myself and for others."* - Silivanh Khamsingsavath, Accountant and Secretary, Lao Disabled People's Association, Savannakhet Province Branch, Lao PDR

Standing up against harmful gender and social norms was not easy for leaders (6 of 19 leaders), particularly women leaders, and it included a sense that women had to work harder to fulfil new leadership roles while also fulfilling traditional gender roles. Three leaders also expressed that women lack confidence to lead, and three other leaders also experienced the consequences of the public's negative perceptions of women leaders.

Leaders expressed that in their gender-transformative work it was not uncommon to encounter backlash, resistance to change, and criticisms (5 leaders). They reported dealing with these challenges by drawing on their values of optimism, courage, dedication, and passion. They also used the leadership styles described earlier, of persuasion and building consensus, leading by example, being goal- and vision-oriented, and maintaining openness to new ideas.

Lastly, six leaders (predominantly from the NGO sector) reported having to navigate broader institutional and systemic challenges. These included a lack of clear national policies and guidelines for GESI, weak implementation of policies and guidelines, and difficulty accessing funds for GESI-focused work. The latter was particularly difficult during the COVID-19 response since other work was prioritised. One respondent said:

*"Our government has more focus on infrastructure development rather than human development. GESI issues are still not a priority issue for the government. Somehow, this also creates obstacles when raising the voice for gender equality."* - Ambika Yadav, Sarlahi District Coordinator, SNV Nepal

## Visioning

While investigating how gender-transformative leadership could be strengthened, we asked participating leaders what would be the one change they would make if they could snap their fingers and magically enable better leadership for equality and inclusion. Responses revealed three themes in desired changes. The first desired change was for social norms that celebrate and enable diversity in leadership. Achieving this vision would represent dismantling harmful social norms including traditional ideas about what makes, and who can be, a good leader. The second theme focused

on enabling environments, envisioning systematic embracing of transformation ideals such that gender equality and social inclusion are mainstreamed in institutions. This theme also envisioned an increase in educational and capacity-strengthening opportunities. The third theme focused on intersectionality and diversity, particularly focusing on the importance of addressing multiple structural power imbalances, including but not limited to gender. In the study, the importance of considering disability inclusion was particularly emphasised for advancing transformative leadership.

Each of these themes reflects ongoing discussions in literature on gender equality and social inclusion in WASH (e.g., Soeters et al., 2019b; MacArthur et al., 2022; Water for Women, 2022). Having such perspectives expressed by participating leaders affirms their relevance for practical action and the importance of those working in WASH to continue advocating for a focus on transformative change. As we recover from the social and economic impacts of COVID-19, grapple with urgent climate change challenges, and continue to champion the delivery of essential WASH services, we must do so in a way that actively advances gender and social transformation towards more equal, inclusive societies.

## Reflections on the research approach

The research approach emphasised collaboration, strengths, and transformation both in and through the process of undertaking this study. In this section, we share reflections in the form of testimonies from a leader and members of the research team, then synthesise themes and implications for future research.

### For the participating leaders

The transformative approach to the research involved engaging the participating leaders beyond data collection. Leaders identified ways in which the research might support and benefit them. These included building and expanding networks, creating opportunities to speak at events, creating opportunities to share and learn from others, sharing their testimonies and experiences with donors and others who might support their work, and participating in developing the research outputs. We took a storytelling approach in the production of the different outputs (described in Section Approach) to celebrate leaders and provide them with resources to share their achievements and inspire others. We also selected leaders to be featured in videos and blog stories, sought leaders' input and review into the different research outputs, and shared outputs with donors and the wider WASH sector. One of the participating leaders shared his reflections (Box 2).

### For the research team

The pandemic has created many challenges, but also some opportunities. Interviewed leaders shared the increased pressure it placed on them and their roles, but they showed continued strength and courage during very challenging times. The research team hoped that this research would provide fresh insights into the critical and varied roles that gender-transformative leaders can and do play in facilitating more gender equitable and socially inclusive WASH systems, policies, and services. The case studies of the leaders opened our eyes to the rewards, challenges, and benefits of transformative leadership, showing us what is possible. Two members of the research team shared their personal reflections on the research and what it meant for them (Boxes 3, 4).

## Limitations and challenges

We identify three limitations spanning practical and methodological aspects of the study, which should be considered when interpreting and drawing conclusions from insights presented. First, conducting the research in the context of the COVID-19 pandemic across three countries created some practical challenges and resulted in occasional interruptions and delays. The team was aware of the potential for delays, and while the research plan was flexible and adaptable, the approach to conducting certain activities had to be adjusted. One such example is collective data analysis, which had initially been planned to be conducted jointly by all team members. Due to delays and time pressures, a sequential process was instead undertaken in which UTS-ISF team members undertook initial analysis which was then shared and critically discussed during a wider team sensemaking workshop. To address the associated risk of confirmation bias, during wider sensemaking we included interactive processes with opportunity for anonymous input and critique of identified themes.

A second limitation concerns identification of outcomes associated with gender-transformative leadership. As noted in Section Characterising gender-transformative leaders, outcomes were not easy for participants to articulate due to both the timing of the research and personal characteristics of leaders (with modesty and humility characteristic traits). As such, evidence presented about outcomes should be interpreted as indicative and instructive for further research, rather than comprehensive or strongly evidence-based. We justify the inclusion of outcomes despite these limitations given the imperative to build evidence about how gender-transformative leadership can contribute to positive social change. In future, studies could include use of quantitative indicators of change combined with qualitative insights to provide a robust, substantiated evidence-base of change.

Finally, the positive deviance approach and strengths-based orientation to interviews means that explicit details

**BOX 2 Personal reflection by Ugyen Wangchuk, former Executive Director of Ability Bhutan Society, Bhutan.**

I was inspired by other leaders who participated in this research. In particular, I was inspired by the stories of Namgay Pelden, a local government woman leader in Bhutan, and H. E. Dechen Wangmo, the Minister of Health of Bhutan. I admired their leadership, initiative and genuine passion for people from marginalised groups including women and people with disabilities, and learnt lessons about accessibility and inclusion in WASH.

Being part of the research changed some of my perspectives on leadership. For example, in Bhutan we do not have many women leader champions, and those are 2 leaders that I can look up to. Their skills and leadership really inspired me and made me aware of my own biases. As a male leader, sometimes I fail to take into consideration the needs of women. But through this research, I saw how women leaders take into consideration the needs of women and people with disabilities, and this was very inspirational. As men, we tend to assume things, and I have reflected that we are not in a position to understand the needs of women and people with disabilities in difficult times. As a leader, sometimes we could do more harm than good even if we have good intentions, because we might make assumptions that are not necessarily true.

**BOX 3 Personal reflection by Aastha Chhetri, MandE Advisor, SNV in Nepal.**

This research has enabled me to understand that no circumstances can stop you from doing what you want. Being a leader is not an easy task, and it requires education, continuous hard work, patience, and dedication. A new perspective on leadership I gained from working in this research is that being able to influence people into doing something good is noble work and it provides a high sense of satisfaction at the end of the day. I would like to inspire women and disadvantaged people to speak for themselves and raise their voices in WASH. I want to work towards supporting them in doing what they can to improve the sanitary conditions in and around their households and their entire community.

This research has been conducted in trying to understand the pathway followed in the making of a leader. This involves the struggles faced along with support received by the leaders and covers all the lived experiences which have shaped the leaders, which is a new and different approach in WASH research.

**BOX 4 Personal reflection by Phetsakhone Somphongbouthakanh, Gender Equality and Inclusion Consultant for SNV in Lao PDR.**

Sitting with leaders and learning about their work and experiences gave me a new perspective on leadership: being a leader does not mean following one standard model of leadership. Everywhere and everyone is different and needs to be led in different ways. Especially listening to the leaders with disabilities inspired me to advocate for policy change that benefit them and continue working on inclusive leadership as well as improving my own self-leadership.

Something I could do differently, or might do in future to support the kinds of leaders I spoke to through this research is to spend more time with them to listen, learn about their needs and share what I have learned with others as much as possible. I believe the work SNV did to collect these valuable experiences from leaders, and different levels of ability is very important work. These findings and insights could be used to strengthen CSOs' work on WASH leadership programmes. They could also be used in policy dialogues to progress gender equality and social inclusion and to inspire other organisations and governments to prioritise GESI in their WASH programmes. I invite readers to reflect on themselves as they read through the findings, select the aspects of their leadership they think could be strengthened and think of a doable action that could improve their gender-transformative leadership. Share and inspire others.

on the challenges of being a gender-transformative leader, or barriers to exercising gender-transformative leadership, may have been missed. Barriers discussed in this article represent those experienced by leaders who were specifically identified as gender-transformative, and therefore do not explore the ways in which pervasive structures and norms create leadership opportunities for some while excluding others. While we assert the value of a positive deviance approach in this study as a means to celebrate and inspire, we also affirm the importance of complementary research that more deeply engages with the multiple, intersecting barriers that may limit gender-transformative leadership.

## Conclusions

This article presented a conceptual framework for analysis of gender-transformative leadership, and results from a positive deviance study of gender-transformative WASH leaders in

Bhutan, Lao PDR, and Nepal. The conceptual framework reflects a conception of leadership as diffuse and relational. In the framework, personal, relational, action-oriented and contextual dimensions are all identified as shaping the qualities and potential of transformative leadership.

Findings from interviews with 19 leaders identified alignment between the values and styles of gender-transformative WASH leaders and those discussed in wider transformative leadership literature. Leaders were found to have strong learning orientations and social justice and feminist values, often shaped by direct personal experiences of discrimination or their observations of disadvantage. This aligned with typical values and traits of transformative leaders in the literature. They also displayed characteristics of being altruistic, humble, and brave.

Leadership styles were found to be relational, shaped by empathy and a commitment to lead by example, in alignment with literature which suggests that such leaders are typically motivating, caring, collaborative and collective. Interestingly,



these ‘feminine’ leadership qualities were exhibited by both women and men leaders, affirming the value of having all genders engaged in the realisation of women’s rights and gender equality and inclusion. Illustrative actions identified in the study included direct support for women’s advancement, championing gender mainstreaming and placing vulnerable groups at the centre of the COVID-19 response. Indicative outcomes—while requiring further validation—suggested the potential of gender-transformative leadership to drive tangible societal outcomes such as inclusive service provision, shifts social norms and perceptions, as well as personal changes in self-confidence and work satisfaction.

The study identified strong external support to be an important enabler of transformative leaders. Such support could come from different levels, including in the domestic sphere, professional sphere, and external organisations and networks. Common barriers faced by transformative leaders included personal experiences of discrimination, wider social resistance and backlash, and lack of formal and institutional structures and policies. Three key areas noted as areas to strengthen in the future included increased celebration of diversity in leadership, increase mainstreaming of equality and inclusion in institutions, and the importance of paying attention to intersectionality and concurrently addressing multiple structure imbalances.

This study contributes to the body of knowledge in leadership in general, and gender-transformative leadership applied to the WASH sector in particular. Having been undertaken during the height of the COVID-19 pandemic, the study also highlights the critical role of transformative leaders in prioritising inclusion during times of rapid social upheaval and change. The conceptual framework and key findings from this research can be beneficially applied to other contexts or sectors to generate evidence about how transformative leadership can be celebrated and supported as a means to drive gender equality and social inclusion in and through WASH, and beyond.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

The studies involving human participants were reviewed and approved by University of Technology Sydney, Human Research Ethics Committee. The patients/participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

## Author contributions

Conceptualization: NC, DG, JW, and GH. Methodology: NC, DG, and JW. Investigation: AC, RB, TC, and PS. Data curation: DG. Analysis: DG, NC, AC, PS, RB, TC, and GH. Writing-original draft preparation: DG, NC, AC, and JW. Writing-reviewing and editing: PS, UW, RB, TC, and GH. All authors have read and agreed to the published version of the manuscript.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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## Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/frwa.2022.1050103/full#supplementary-material>

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# Human rights, COVID-19, and barriers to safe water and sanitation among people experiencing homelessness in Mexico City

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Access to safe water, sanitation, and hygiene (WASH) are human rights and play a fundamental role in protecting health, which has been particularly evident during the SARS-CoV2 (COVID-19) pandemic. People experiencing homelessness face frequent violations of their human rights to water and sanitation, negatively affecting their health and dignity and ability to protect themselves from COVID-19. This research aimed to identify barriers to safe water, sanitation and hygiene access for people experiencing homelessness in Mexico City during the COVID-19 pandemic. A survey of 101 respondents experiencing homelessness was conducted using mobile data collection tools in collaboration with El Caracol A.C., an NGO that contributes to the visibility and social inclusion of homeless people in Mexico. We report findings according to the following themes: general economic impacts of COVID-19; experiences with reduced access to WASH services due to COVID-19, challenges in accessing hand washing to follow COVID-19 public health advice; and coping mechanisms used to deal with reductions in access to WASH. We discuss the broader implications of the findings in terms of realization of the human rights to water and sanitation (HRTWS), and how people experiencing homelessness are left behind by the existing approaches to ensure universal access to water and sanitation under SDG 6.

## KEYWORDS

human rights to water and sanitation, WASH, COVID-19, homelessness, Mexico City, human rights-based approach, water, sanitation

## 1. Introduction

Water, sanitation, and hygiene (WASH) services are essential for a dignified and healthy life. This became even more evident with the SARS-CoV2 (COVID-19) pandemic (Howard et al., 2020), as around 2.4 billion people continue to lack access to handwashing with soap and water (Brauer et al., 2020). In 2010, the human right to water and sanitation was recognized (United Nations General Assembly, 2010), and in 2015 sanitation was recognized as a standalone human right that “entitles everyone, without discrimination, to have physical and affordable access to sanitation, in all spheres of life, that is safe, hygienic, secure, socially and culturally acceptable and that provides privacy and ensures dignity” (United Nations General Assembly, 2016). Despite adoption of the human rights to water and sanitation, people experiencing homelessness (PEH) are frequently denied access to safe water and sanitation services, and face related discrimination, violence, and criminalization. Provision of water and sanitation services for PEH is often viewed as a form of charity rather than realization of human rights, which can reinforce inequalities and lead to the provision of low-quality services (Neves-silva et al., 2018).

Although homelessness is assumed to be linked to poor access to WASH, the experiences of PEH and their specific barriers to accessing water and sanitation have been under-researched (Ballard et al., 2022). Existing studies have examined WASH and homelessness in the contexts of rural Kentucky, United States (Ballard et al., 2022) and in urban settings in Dhaka, Bangladesh (Uddin et al., 2016), Belo Horizonte, Brazil (Neves-silva et al., 2018), and Delhi and Bangalore, India (Walters, 2014). There is limited evidence collected in a systematic way on a global level that addresses WASH and homelessness, as information on access to WASH services outside the household, schools, or health care facilities is sparse. Progress on PEH's access to safe water and sanitation is not effectively tracked as part of SDG 6, despite the focus on ensuring universal access and leaving no one behind. In Mexico, there is a lack of official data on some components of the human right to sanitation such as access to safely managed sanitation, especially for vulnerable populations (García-Searcy et al., 2022). Without policy targets or adequate collection of data, it is challenging to motivate decision-makers to act (Hugh and Fox, 2020). Further adding to these challenges is the fact that homelessness can be defined in different ways making it challenging to collect accurate and reliable data, let alone assign people to a category since people move in and out of homelessness and have heterogeneous circumstances (Fowler et al., 2019). In Mexico, historical exclusion and invisibility of PEH have been exacerbated by the lack of information available and collected on this group and the criminalization of its members due to their life circumstances (Comisión Nacional de Derechos Humanos (CNDH)/El Caracol, 2019).

During the COVID-19 pandemic, residents in Mexico were instructed to maintain personal hygiene, stay at home and keep a safe physical distance to prevent the spread of COVID-19; a challenging task for those experiencing homelessness (Ruiz Coronel, 2021). A review of the impacts of the COVID-19 pandemic in several low- and middle-income countries including Mexico indicated that PEH were among the most vulnerable groups impacted by COVID-19 lockdowns (Chackalackal et al., 2021). This is because COVID-19 public health recommendations put a large focus on hand hygiene, which requires ongoing access to safe water and soap. Closures of public spaces, businesses, and self-isolation in the context of COVID-19 further restricted opportunities for PEH to access safely managed water and sanitation services, creating new health challenges (Brauer et al., 2020).

The aim of this paper is to present findings on the barriers faced by PEH in Mexico City when attempting to access water, sanitation, and hygiene (WASH) services during the COVID-19 pandemic, and to contribute to a broader discussion about the operationalization of the human rights framework for the fulfillment of the human rights to water and sanitation for PEH.

## 1.1. Challenges in addressing homelessness in Mexico City

People experiencing homelessness and precarious housing may have a range of different forms of insecure housing, ranging from living in temporary structures, temporarily with friends, housing without legal tenancy, to a complete absence of shelter, such as living in the streets (Amore et al., 2011). Piat et al. (2015) highlight the complexity of pathways into homelessness, including the interplay

between structural factors such as lack of affordable housing, unsafe communities, and discrimination, and individual risk factors such as mental illness, childhood trauma and substance use. The failure to communicate the complex causes of homelessness has created a limited and biased narrative, that portrays PEH as lazy and dirty, and an individual issue disconnected from the broader societal context (Devereux, 2015). This has contributed to further discrimination toward PEH and on many occasions the criminalization of homeless individuals. For example, many cities in the US criminalize life sustaining behaviors of PEH such as public sleeping and laying or sitting down in certain areas of the city (Robinson, 2019). In Hungary in 2010 an anti-homeless campaign banned people from begging and picking up left over food from bins (Faragó et al., 2021). These anti-homeless laws have reinforced the negative perceptions of PEH among the public and authorities and lead to support for punitive policies (Turner et al., 2018).

In the case of Mexico City, there are an estimated 6,754 members of the street population, of which 4,354 live in public spaces while 2,400 live in one of the Social Assistance and Integration Centers (CAIS) (IASIS, 2017). However, due to stigmatization of this group, there is a significant undercounting (Comisión Nacional de Derechos Humanos (CNDH)/El Caracol, 2019). According to the "Censo de Poblaciones Callejeras 2017," 87% were men and 13% were women, with women more likely to avoid rough sleeping because they are more prone to face sexual harassment, abuse, and violence (Bretherton and Nicholas, 2018). The lack of understanding of the complexity of homelessness and the paucity of information surrounding this group has affected the way in which PEH are addressed and represented in public policies and government programs in Mexico (Moreno et al., 2017). In the last few decades, government initiatives have promoted and operated paternalistic and isolated programs that focus on serving the immediate needs of PEH instead of creating policies that address the root cause of the problem, such as secure access to essential services like housing and healthcare (Guerra and Arjona, 2019). Such is the case with the most recent government programme "Comprehensive Care for Members of the Street Populations (PAIIPC)" which aims to provide immediate assistance to PEH through provision of blankets, clothing and food (CDHCM, 2021). On the other hand, Guerra and Arjona (2019) highlight that government programmes framed under a crime prevention scope reinforce prejudices related to the use of public space by PEH as a means to displace this group from their conventional locations. For instance, in Mexico City the "Ley de Cultura Cívica" punishes those who use public space for sleeping at night or who undertake survival activities such as cleaning windshields with up to 36 h in jail and possible additional fines (CDHCM, 2021). When it comes to WASH services for PEH, the government does not guarantee access to drinking fountains, toilets, and showers although these services are essential for a life with dignity as established and protected under the Mexican Constitution (Guerra and Arjona, 2019).

## 1.2. Homelessness and links to WASH inequalities

Historically, access to public services such as water, sanitation and public health care among PEH has been constrained by their lower standing within social, economic, and cultural power structures



(Quesada et al., 2011). In Mexico City homelessness frequently intersects with one or more characteristics like immigration status, health status, indigenous status, ethnicity, skin color, sex, age, disability, sexual preference, or gender identity to exacerbate exclusions (Guerra and Arjona, 2019). As a result, PEH have been subjected to various forms of discrimination, violence, and racism, which have constrained their choices and opportunities. For example, many PEH face numerous obstacles when trying to access medical care due to their physical appearance (Comisión Nacional de Derechos Humanos (CNDH)/El Caracol, 2019).

Due to these structural vulnerabilities, a deeper understanding of the complexity of homelessness and the intrinsic power relations in access to WASH services is needed by WASH researchers and practitioners. This will improve understanding of how realizing rights to safe WASH can best contribute to efforts to address drivers of homelessness and associated negative health and wellbeing outcomes across the spectrum of living situations. Addressing the WASH needs of this group is especially important as research shows that individuals who do not follow community hygiene norms, such as those related to sanitation and handwashing, are consistently stigmatized which exacerbates social and economic marginalization (Brewis et al., 2019).

On a global policy level, provision and monitoring of water and sanitation services are usually addressed at the household level, dismissing other spaces, such as public areas. For instance, the Joint Monitoring Programme that tracks WASH progress reports zero level of open defecation in urban areas in Mexico (WHO and UNICEF, 2022). However, overlooking certain underserved groups due to challenges with data collection from people living outside of typical households may lead to human rights violations that disproportionately affect PEH (Heller, 2019). A barrier to addressing WASH needs for PEH is the focus on technical solutions alone, such as the provision of drinking water and sanitation infrastructure as means to tackling inequalities. This practice fails to acknowledge the distinct reasons and constraints that drive people to undertake certain water and sanitation practices and discards cultural differences arising from gender, age, ethnicity, and socioeconomic factors (Peal et al., 2010; Coswosk et al., 2019). Additionally, access to WASH services is determined by the socio-cultural characteristics and power dynamics of a given location (Nunbogu and Elliott, 2021). Together these factors mediate people's ability to benefit from water services (Gimelli et al., 2018). For example, placement of hand-washing facilities in public places recommended by the WHO, such as in front of commercial buildings, may not be acceptable or accessible to PEH due to the power and social dynamics that control that space (Ballard and Caruso, 2021; Nunbogu and Elliott, 2021).

A handful of existing studies highlight some of the structural drivers and particular vulnerabilities of PEH in the context of WASH. Neves-Silva et al. (2019) found that in Belo Horizonte Brazil, not being able to access WASH increased discrimination and exclusion of PEH. For instance, a lack of facilities to wash menstrual materials meant that washing had to be done in public showers which contributed to a lack of privacy and dignity while also impacting health and personal security. In a study in Central Appalachian Kentucky, United States, researchers identified factors at multiple levels that created barriers to WASH access and use, such stigma, particularly among those who were drug users, as well as place-based characteristics such as long distance to businesses and facilities

with WASH services related to lack of transport (Ballard et al., 2022). This study found that these factors not only limited people's ability to perform safe WASH practices but generated a feedback loop where unmet WASH needs further exacerbated negative health outcomes, and further limited safe WASH access. Uddin et al. (2016) examined the experiences of PEH in accessing WASH in Dhaka, Bangladesh. They identified risks related to poor water quality provided by the Dhaka Water Supply Authority's open supply taps, and risks related to accessing those sources, particularly at night, that varied with gender and age. The authors argue that PEH's lack of access to water is due to their marginal position in society, and the associated unequal distribution of power and opportunities. Uddin and colleagues propose a rights-based approach to address the structural causes of discrimination and marginalization, rather than only addressing the symptoms underlying limited access to critical resources such as WASH.

Human rights-based approaches have been applied in a number of other WASH contexts to highlight challenges faced by vulnerable and marginalized groups in the realization of their rights to water and sanitation. For example, these efforts have sought to "make rights real" at a local level, establish the criteria against which the normative criteria of this right can be monitored, and draw attention to populations in vulnerable situations (Winkler et al., 2014; Giné-Garriga et al., 2017; Carrard et al., 2020). This framing is particularly relevant in the context of homelessness due to the interdependence and indivisibility of the HRTWS with other rights such as the rights to health and adequate housing (Uddin et al., 2016; Neves-Silva et al., 2019). The rest of the manuscript contributes to this growing understanding of barriers faced by PEH in realizing their human rights to safe WASH services.

## 2. Methods

### 2.1. Case study site

This study was conducted in 3 municipalities, Cuauhtémoc, Venustiano Carranza, and Gustavo A. Madero, in Mexico City, Mexico, from February through April 2021. According to the latest street population census, these municipalities have the highest density of PEH (IASIS, 2017). Additionally, these are the areas in which El Caracol A.C. has been conducting activities for the past 10 years. El Caracol is a civil society organization that contributes to the visibility and social inclusion of homeless people in Mexico City through research, health campaigns and advocacy. El Caracol staff have a longstanding relationship with the PEH that live and work in the study area.

On March 24<sup>th</sup>, 2020, SARS-CoV2 (COVID-19) was recognized as a serious priority disease by the Mexican government. The "Jornada Nacional de Sana Distancia" (Healthy Distance Campaign) was then introduced to help mitigate the transmission of the SARS-CoV-2 virus. The Healthy Distance campaign consisted of the interruption of any face-to face activity that involved a high concentration, transit, or movement of people, and included closures of private and public venues as well as the avoidance of public and crowded places and the compliance of the basic hygiene measure such as frequent hand washing (Ruiz Coronel, 2021). This meant that public spaces and private businesses had to remain closed or operate

within limited hours and people had to stay at home until further notice. These unexpected and strict guidelines had a major impact on PEH, as most were left without a safe space to quarantine or access soap, face masks, and water, making it nearly impossible to follow such guidelines. As a response, El Caracol established a health and protection campaign for PEH. This campaign consisted of weekly support to PEH with basic water and sanitation supplies, education on preventive measures, procurement of safe spaces, and mental and physical health checks.

## 2.2. Ethics approval

Prior to conducting research, ethical approval was obtained from the Stockholm Environment Institute Ethics Committee [2021-01-29-02]. Fact sheets describing the planned research were provided to potential participants describing the aims of the study and outlining the rights of respondents. These were handed out and read to potential participants before the start of each survey. Informed consent was obtained from participants through either a signature or a fingerprint in cases where the participant did not know how to write.

Data collection activities were guided by El Caracol's health and safety protocol to prevent the spread of COVID-19 to the target population and staff. The protocol consisted of staff limiting their activities to one visit per day to a group of PEH with a maximum stay of 45 min. One person was assigned to conduct the surveys. The surveys were conducted outside, and both the surveyor and the interviewee were required to wear a mask at all times. The interview was programmed to last between 15 and 20 min, and the surveyor could not lengthen the interaction.

## 2.3. Sampling approach

The collection of data took place in 3 municipalities of Mexico City: Cuauhtémoc, Venustiano Carranza, and Gustavo A. Madero. The research participants comprised adult men and women, who at the time of the study were either living on the streets or in private or public shelter with no permanent form of housing. Using convenience sampling, 101 respondents were surveyed, leading to a total of 97 responses (67 = men and 29 = women and 1 with a person that did not wish to reveal their sex) after data cleaning to remove incomplete surveys. Recruitment of participants for the study was carried out by El Caracol during their daily street work activities and the safety and health campaign, however participation was not required in any way to benefit from these activities.

Additionally, 2 workers from El Caracol were selected for one-on-one key informant interviews that addressed questions related to the survey, including their perceptions of adversities that PEH faced when accessing water and sanitation services at the height of the COVID-19 pandemic; their perceptions of how PEH dealt with these adversities; their observations of violence and discrimination toward PEH from the local authorities and public; their views surrounding their health campaign that aimed to assist PEH during the pandemic as well as their perspectives surrounding the government's (in)action to protect and assist vulnerable groups at the height of the pandemic. The interviews were carried out online by the first author and lasted between 45 and 60 min.

## 2.4. Data collection tools and measures

The individual survey was designed in English and translated into Spanish. The survey questionnaire comprised both closed- and open-ended questions divided into seven sections. The first two sections collected information on descriptive characteristics of the target population, such as sex, marital status, education level, occupation, working status, income before and during the COVID-19, health insurance, and sleeping conditions. The third section covered access and use of water, sanitation, and hygiene services before and during the pandemic.

Before implementing the survey, the questionnaire was tested among the enumerators and other workers from El Caracol allowing them to build confidence and clarify any cultural or language misinterpretations. Survey responses were collected with mobile data collection using cellphones and the survey platform Kobo Toolbox.

## 2.5. Data analysis

The dataset was downloaded from Kobo Toolbox in an XSL format. The first author used Microsoft Excel for data management, organization, and initial analysis. After data cleaning to remove incomplete responses, 97 respondents were included in the analysis. Descriptive statistics and exploratory factor analysis were generated using SAS University Edition software package. Interview transcripts were analyzed using deductive thematic analysis based on the main survey themes.

## 3. Results

### 3.1. Participant characteristics

Of the 97 participants, 87 (90%) had some type of formal education, with 22 (25%) having graduated from or attended high school and 33 (38%) stating that they had attended or completed junior high school.

Regarding employment, 63 (65%) of the 97 participants said that they were employed in some capacity both before and during the COVID-19 pandemic; all jobs reported were informal with some of the most common jobs reported being windshield cleaners ( $n = 24$ ; 38%), street sellers ( $n = 15$ ; 23%), and waste collectors ( $n = 15$ ; 16%) (Table 1).

When asked about their sleeping conditions, most of the respondents ( $n = 70$ ; 72%) said that they had slept in the street during the last month, while a small number of respondents indicated that they had slept at a rental space 9 (9%), family's house 5 (5%), friend's house 3 (3%) or government hostel 3 (3%).

### 3.2. General impact of COVID-19 on participants

Overall, the most frequently mentioned impact reported by respondents was through reduced work opportunities ( $n = 37$ ; 45%) and reduction of income ( $n = 31$ ; 37%), highlighting negative socio-economic impacts for many (respondents selected as many

TABLE 1 Participant characteristics.

	<i>n</i>	%
<b>Age</b>		
18–25	15	15
26–35	23	24
36–45	31	32
46–55	12	12
56–65	14	14
Older than 65	2	2
<b>Sex</b>		
Female	29	30
Male	67	69
Prefer not to say	1	1
<b>Highest level of formal education</b>		
No school attendance	10	10
Elementary school	8	8
Elementary school (incomplete)	21	24
Jr. High school	15	15
Jr. High school (incomplete)	18	19
High school	10	10
High school (incomplete)	11	11
University degree	1	1
University (incomplete)	3	3
<b>Current work status</b>		
Not working	34	35
Working	63	65
<b>Sleeping location in the last month</b>		
Government hostel	3	3
Street	70	72
Friend's house	3	3
Family house	5	5
Hotel	2	2
Rental space	9	9
Other	4	4
<b>Health insurance (Seguro popular)</b>		
I don't know	4	4
I don't have insurance	56	58
Only my children	3	3
I have insurance (only me)	14	14
My whole family has insurance	15	15
Only me and my children	2	2

responses as applicable). Of the 63 participants that worked before and during the pandemic, the vast majority (87%) noted that their income had been negatively affected (Figure 1). Respondents felt

these changes were mainly a result of the lack of job opportunities, closure of private businesses, and the low number of people on the streets.

Further, the housing situation of respondents was negatively impacted by COVID-19. Of the 83 respondents that noted COVID-19 had negatively impacted some aspects of their life, 13 participants (16%) mentioned they had started to live in the streets, 9 participants (11%) stated they had been evicted from their place of residence and 8 participants (10%) noted that they had gone back to living in the streets during the COVID-19 pandemic.

In terms of gendered impacts, one El Caracol interviewee reported women faced disproportionately more difficulties than men during the COVID-19 pandemic:

*“Women had to go out and look for food and water while still taking care of the children. Many times, they were left to educate, entertain, and feed their families without any resources.”*

Additionally, some women respondents reported a rise in domestic violence as a consequence of COVID-19 ( $n = 3$ ; 4%).

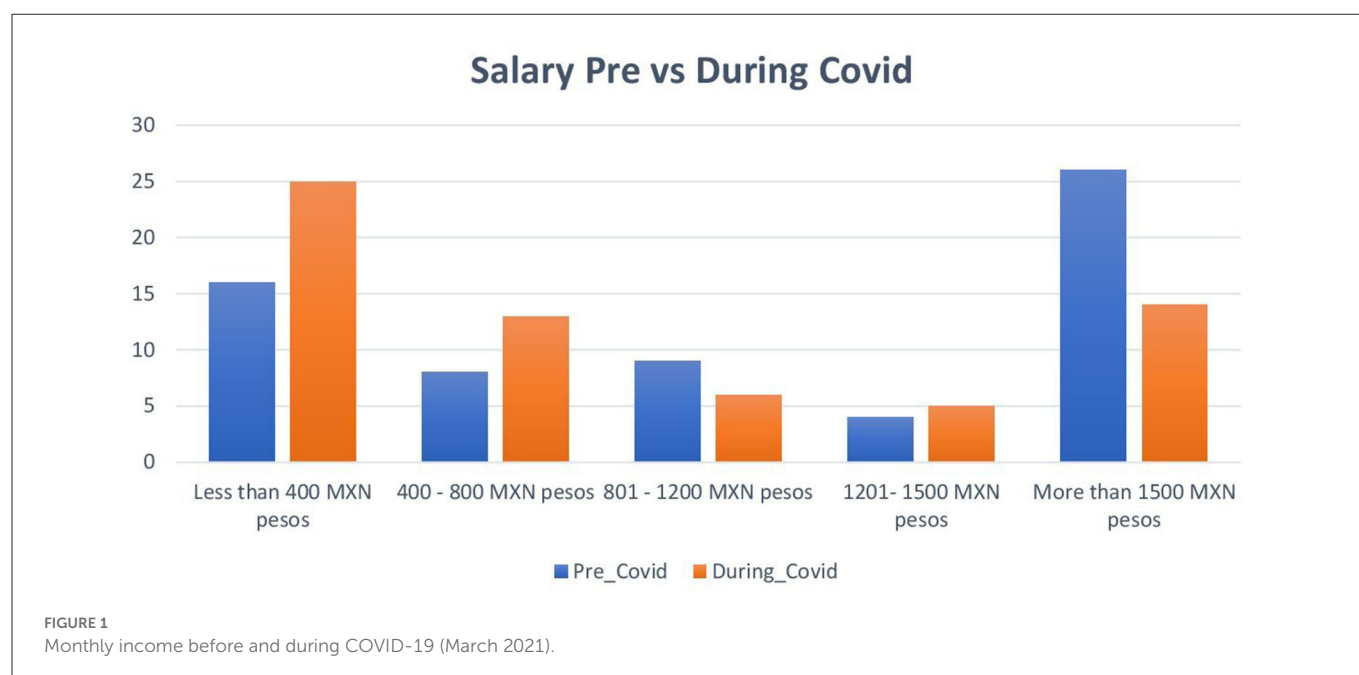
### 3.3. Barriers in access to drinking water sources

Survey participants reported that their main drinking water source was purchased bottled water ( $n = 36$ ; 37%) and water points in private businesses ( $n = 25$ ; 26%), the latter not always being available. In terms of affordability, 32 (33%) participants reported spending no money on drinking water daily while others reported spending between 1 and 15 Mexican pesos ( $n = 33$ ; 34%) and 16–30 Mexican pesos ( $n = 21$ ; 22%) daily on drinking water. According to the interviewees, those who are parents must also look after the water and sanitation expenses of children, and in many cases those of elder family and friends.

Of the total respondents, 35 (36%) reported using a different drinking water source before the COVID-19 pandemic. Of these, 12 (34%) noted that the water from the new source was of worse quality, further away ( $n = 7$ ; 20%), or more expensive ( $n = 4$ ; 11%) (Table 2). Respondents stated that some of the coping mechanisms adopted to deal with these changes were drinking less water than needed ( $n = 15$ ; 43%), drinking other liquids such as soda, juice, or milk ( $n = 8$ ; 22%) and storing drinking water in barrels ( $n = 8$ ; 23%).

### 3.4. Barriers to accessing hand washing facilities and soap

When asked about hand washing and hygiene, 48 (49%) respondents noted that their hand washing facility was the same as their drinking water source. Of these respondents, 15 (31%) respondents stated using bottled water as their main drinking water as well as hand washing source. Of the 49 (51%) respondents who used a different source for washing their hands, 18 (37%) noted that water was not always available at this source. When asked about soap availability at the hand washing facility or surrounding area,



**TABLE 2** Reported changes in water sources with the pandemic (36 respondents and total number of responses = 42).

Reported change in water source	n
The water from the new source is of worse quality	12
The water from the new source taste worse	4
The new source is further away	7
The water from the new source is more expensive	4
The water from the new source is of better quality	7
I don't see any change	5
Don't know	3
Other	3

55 (57%) respondents reported having to bring soap to the hand washing facility.

In terms of hand-washing advice respondents received on how to protect themselves and others from COVID-19, most of the respondents ( $n = 60$ ; 62%) had either heard protection measures on the TV ( $n = 31$ ; 50%) or radio ( $n = 24$ ; 39%) or had been told by family members ( $n = 11$ ; 18%) or civil society organizations ( $n = 9$ ; 15%) that regular hand washing with soap and water was one of the best ways to prevent the transmission of COVID-19 ( $n = 33$ ; 52%). All these respondents reported trying to follow this advice, despite not always having access to a reliable handwashing facility with water and soap.

### 3.5. Barriers to accessing sanitation facilities

Three types of sanitation facilities were found to be most commonly used among survey respondents: a toilet in a current living space (25%), a toilet in a public parking lot (23%), and a toilet in a private business or restaurant (16%). Open defecation was

a common practice among survey respondents with 19 respondents (20%) stating that they practiced open defecation daily. Of the respondents that reported practicing open defecation, 9 participants (9%) mentioned that they previously used a toilet either in the place that they used to live or in a private business before the COVID-19 pandemic. In terms of cost for using a sanitation facility, respondents reported spending between 1 and 5 Mexican pesos ( $n = 24$ ; 25%), 6–10 Mexican pesos ( $n = 15$ ; 15%), and 11–15 Mexican pesos ( $n = 11$ ; 11%) per day for use of the sanitation facility, while 36 (36%) of the respondents reported not spending any money on using a sanitation facility. When asked about accessibility of sanitation facilities respondents stated that they could always (58%), almost always (12%), sometimes (12%), and almost never enter the facilities (1%). Reasons for not always being able to access the sanitation facilities included lack of money ( $n = 9$ ; 36%), physical appearance of the person ( $n = 6$ ; 24%) and the facility being closed ( $n = 3$ ; 12%).

Less than half of the survey respondents ( $n = 33$ ; 34%) reported using a different sanitation facility prior to the COVID-19 pandemic. Of these, respondents ( $n = 23$ ; 70%) reported that the conditions of the new sanitation facility were worse than the ones from the previous facility, stating that the new facilities are not always open ( $n = 7$ ; 30%), they were dirtier ( $n = 6$ ; 26%), more insecure ( $n = 4$ ; 17%) and more expensive ( $n = 3$ ; 13%) (Table 3). Some of the coping mechanisms used by the respondents to deal with these changes were drinking or eating less to avoid having to use the sanitation facilities so often ( $n = 7$ ; 21%), holding urine/feces for longer than wanted ( $n = 2$ ; 6%), and practicing open defecation ( $n = 1$ ; 3%). Of the 29 women surveyed, 5 participants (17%) stated that they did not have access to a private space in which to manage their menstrual health needs or wash themselves. Of these respondents, 2 practiced open defecation, 1 used the toilet in the metro station, 1 reported using the toilet in a private business and 1 used the toilet in the shelter.

One key informant interviewee noted that they had received complaints from other civil society organizations, at the height of



**TABLE 3** Reported changes in sanitation facility with the pandemic (33 respondents, total number of responses = 40).

Reported change in sanitation facility	<i>n</i>
The facility is not always open	7
The facility is dirtier	6
The fee for entering the facility is higher	3
The facility is more insecure	4
The bathroom is cleaner	4
The fee is less expensive	2
Discrimination is lower	1
The facility is always open	1
The facility is more secure	2
I don't see any change	4
Other	6

the pandemic, about the increase of human feces around the area in which they work:

*“The priest from the church was angry about the fact that every morning he would find several human feces in the surroundings of the church. He came to tell me this as a complaint, but there is nothing I can do about it.”*

### 3.6. Experiences of WASH-related violence and harassment

Previous experience of physical and verbal violence while using the toilet, practicing open defecation, or fetching water was reported by 29 (30%) of the respondents, with 16 (55%) reporting that they had suffered some type of violence while practicing open defecation. The most common forms of aggression noted among the participants were verbal violence ( $n = 14$ ; 48%), intimidation ( $n = 8$ ; 28%), and physical violence ( $n = 6$ ; 20%). Although the survey did not ask respondents to specify whether the timing of these experiences was before or after the start of the COVID-19 pandemic, one key informant interviewee reported a perceived increase in discrimination and violence against the homeless population during the COVID-19 pandemic stating:

*“The police became more aggressive towards people experiencing homelessness, it almost felt like the virus was a justification for such attitudes.”*

## 4. Discussion

This study investigated barriers to accessing safe WASH among people experiencing homelessness in Mexico City during the COVID-19 pandemic. There is no doubt that prior to the COVID-19 pandemic, PEH faced a number of challenges characterized by structural vulnerability, such as poor access to public health services, malnutrition, a lack of awareness of psychiatric disorders,

substance abuse, early chronic morbidity, and shorter life spans (Ruiz Coronel, 2020). Furthermore, many respondents reported poor WASH services prior to the pandemic.

Our findings indicate that COVID-19 lock-downs exacerbated the challenges faced by PEH in accessing WASH services and securing their human rights to water and sanitation. For instance, we found an increase in open defecation, which was likely a result of the closure of public spaces and businesses as well as evictions. A lack of financial resources was one reason PEH were not always able to access a sanitation facility. Similarly, a study carried out in Bangladesh found that PEH reported using sanitation facilities less often than needed, and hence practiced more open defecation, due to the costly entry fee of the facilities (Uddin et al., 2016). This study also highlights that due to a lack of action taken by authorities, both at the local and national scale, PEH participants in this study are in general left to rely on private businesses to informally meet human rights to water and sanitation in Mexico City. Similarly, a study by Rodriguez et al. (2022) showed that closure of public spaces and restricted access to regular services such as toilets and shower rooms, hampered PEH's ability to meet their most basic needs. Other research on open defecation shows that while open defecation is often considered a public health risk, it also has safety and dignity implications and can cause long-term negative effects on the psychosocial wellbeing of individuals engaged in these practices (Saleem et al., 2019). Girls and women are particularly at risk of verbal, physical and sexual abuse when practicing open defecation or managing menstruation in public spaces (Cherian and Sahu, 2016). Viewed in this way, open defecation is not just a violation of the human right to sanitation, but also gender discrimination and an infringement on human dignity (Saleem et al., 2019).

In the case of hand washing, which has been a central pillar of COVID-19 prevention, many of the respondents in the study reported not having reliable access to a handwashing station with water and soap. This finding conflicts with public health recommendations to wash hands with soap and water as frequently as possible to prevent disease transmission. In the study of Brauer et al. (2020) undertaken in the US, some of the barriers to handwashing among PEH during the COVID-19 pandemic were a surge in prices of hygiene supplies such as soap and sanitizer, and the lack of financial means for PEH to obtain such resources. In our study we found that PEH would need to bring their own soap to the handwashing facility in order to wash their hands, which could prevent many from adhering to health and safety measures. Many reported using bottled water as their main drinking and handwashing source, which, compounded by the fact that many PEH had lost their job or normal earnings during the pandemic, created an additional economic burden on top of existing economic constraints.

Bottled water consumption is a widespread practice in Mexico, owing to a variety of factors, including lack of institutional and regulatory frameworks and poor water infrastructure that discourage people from drinking water straight from the tap (Pacheco-Vega, 2019). The findings of our study support this assertion and demonstrate that, even during non-COVID times, this practice places a significant financial burden on PEH, with the cost of purchasing bottled water daily potentially accounting for up to 15% of respondents' monthly income. In the US, a study conducted in a homeless shelter showed that people preferred drinking bottled water even if the price was significantly higher than tap water (DeMyers et al., 2017). In addition to this, some respondents in our study



mentioned drinking sugar sweetened beverages (SSB) such as juice, milk, or soda instead of water as coping mechanism to deal with the difficulties in accessing their usual drinking water source. Similarly, in the US, a study on youth in a rural southwestern context showed that the preference for SSB increased for those who lacked access to safe drinking water (Hess et al., 2019). Further research is needed to fully assess the economic and health impact of purchasing water bottled and SSBs on PEH and other groups in vulnerable situations.

The coping strategies employed by respondents further underscore how authorities neglected consideration of PEH in Mexico when developing COVID-19 preventative measures, which were found to create new daily challenges for the participants in this research. Some studies on PEH found an increase in loneliness and substance abuse during the COVID-19 pandemic (Tucker et al., 2020; Bertram et al., 2021). However, there is limited evidence on how the lack of access to essential services such as toilets and water points during the COVID-19 pandemic affected PEH's physical and mental health. As Perri et al. (2020) suggest, added stress as a result of the limited access to essential resources and services could lead to a decline in the mental and physical health of PEH and increase their risk of alcohol and drug use, emphasizing an important area for further consideration. In addition, limited access to WASH facilities can pose challenges for women and all those who menstruate to take care of their menstrual needs in a private and dignified matter (Teizazu et al., 2021). In our study, some women reported not having access to a private space in which to take care of their menstrual needs. Likewise, a study in New York City, US, found that during the COVID-19 pandemic women had to pass as someone who was not homeless to gain access to a toilet inside a restaurant for managing menstruation (Sommer et al., 2020).

## 4.1. Addressing WASH and homelessness through the lens of human rights

Ensuring universal access for all people, as outlined in SDG 6.1 and 6.2, means it is imperative to take actions to ensure marginalized groups benefit from safe WASH. In this way the human rights framework can provide a powerful tool to highlight these needs and enable more inclusive delivery of WASH services (Carrard et al., 2020). The findings in this study show that many people experiencing homelessness in Mexico City do not have their HRtWS fulfilled, and the COVID-19 pandemic exacerbated this unjust situation. This also has implications for realizing other human rights, such as the right to health and housing. Further, the inability to easily access water and sanitation services limits the already constrained autonomy and freedom of people experiencing homelessness, and their ability to improve their living conditions (Neves-Silva et al., 2020).

A common challenge to applying a human rights perspective in the water and sanitation sector is the lack of operationalization of human rights by local governments and service providers, which is the case in Mexico City. People experiencing homelessness are often left out of public policies or state funded programmes, and this omission is often purposeful in both the planning and the implementation of programmes, which prolongs inequalities in a cycle of increasing marginalization (Busch-Geertsema et al., 2010; Ruiz Coronel, 2020). In Brazil, Neves-silva et al. (2018), found that providing access to WASH services was seen as a form of charity

and not as realization of human rights, which has prevented the government from taking action to fulfill the HRtWS. In addition, the criminalization of people experiencing homelessness has on many occasions justified the lack of action from the government to provide public services such as water and sanitation (Guerra and Arjona, 2019). There are further policy barriers, such as the coexistence of the HRtWS with other laws and policies that may not favor these human rights and thus impede their fulfillment (Brown et al., 2016). Furthermore, the realization of the human right to water has been affected by the push for commodification and privatization of water, whereas pricing and affordability are elements that are deemed inseparable from the recognition of the right as means to compensate for water scarcity (Cullet, 2019). As Pacheco-Vega (2019) argues the production of bottled water represents a process of commercialization and commodification of the human right to water in Mexico.

In light of these challenges there is a need for greater accountability for WASH duty bearers when the HRtWS is not realized (Dickin et al., 2022; Hepworth et al., 2022) as well as supporting empowerment of marginalized groups to claim their rights. To address some of these challenges on a local level Carrard et al. (2020) describe a “make rights real” approach to make the human rights to water and sanitation relevant and helpful for local government. This approach seeks to achieve transformational change in local government officials in terms of greater awareness, intrinsic motivation, and operationalization of the human rights principles and standards, and has been used in 12 countries so far. Furthermore, this study highlights a need for WASH practitioners to work with actors in other sectors such as those working to ensure adequate housing. Improved understanding of how WASH insecurity varies across the full spectrum of housing exclusion and homelessness, beyond times of crisis such as the COVID-19 pandemic, requires further attention to better target interventions.

While the HRtWS is a good starting point for addressing inequalities among PEH, it does not fully encompass all the ways that people use water (Mehta, 2014; Jepson et al., 2017; Neves-Silva et al., 2019). There is often a focus on drinking water, while adequate water for personal hygiene such as for showers and laundry is neglected as part of one's human right. In addition, there is a need to better understand the different ways that people use water beyond material and domestic uses, such as water for cultural purposes and income generation. Researchers have suggested that the capabilities framing extends the HRtWS to include these other ways that people use water (Wutich et al., 2017), and could provide a valuable framework for future research to further elucidate WASH inequalities among PEH.

## 4.2. Limitations

First, the convenience sampling approach might have missed certain groups such as indigenous populations who experience homelessness, women who look after children and other family members, and men and women living in high-risk municipalities of Mexico City such as Iztapalapa and Coyoacan. Second, due to time constraints with COVID-19, the sample size for the study was small, and the research team was unable to collect more in-depth lived experiences through other methods such as one-on-one interviews, participatory photography, or go along interviews to describe WASH

facilities. In the future the use of participatory photography could provide a better understanding of use of water beyond material and domestic uses and help identify and meaningfully address inequalities in WASH service provision (MacArthur et al., 2022).

## 5. Conclusions

We identified barriers to use of safe WASH services among people experiencing homelessness in Mexico City, and how the COVID-19 pandemic exacerbated these challenges. Many respondents used informal water and sanitation facilities, such as private businesses, rather than having their human rights met by rights duty bearers such as local authorities. Respondents who experienced reduced access to WASH services due to COVID-19 used a range of coping mechanisms, such as using water of poorer quality or practicing open defecation. Barriers to accessing handwashing facilities was a particular challenge due to COVID-19 public health messaging. This study contributes to a growing body of research examining WASH barriers in the context of people experiencing homelessness. We highlight the importance of greater evidence collection to understand the needs of this vulnerable group to ensure they are not overlooked by policy-makers in Mexico City and in other urban areas. Finally, we describe the potential applications and limitations of the human rights framework in this context, including a need to better operationalize the WASH needs of PEH and important links to other human rights, such as health and housing, for WASH practitioners to consider.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

The studies involving human participants were reviewed and approved by Stockholm Environment Institute Ethics Committee

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# Influences on water source selection and use among women in rural Odisha, India

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**Introduction:** Water is a crucial resource for many household functions, including drinking, cooking, bathing, and washing clothes. Globally, women bear the burden of water collection in households without piped water, as well as responsibility for household chores that require water. Carrying water has a number of health and safety risks, and women often rely on multiple water sources. The goal of this study is to understand how women in rural Odisha, India, an area with high coverage of improved water sources, make decisions on where to collect water.

**Methods:** This is a grounded-theory, secondary analysis of qualitative data collected from 69 women across life stages in eight villages in rural Odisha. Women were asked about their concerns and difficulties related to water and probed for details in a variety of contexts, including at night, during monsoon season, and during pregnancy.

**Results:** Women's standards for water quality vary depending on the planned use of the water. They report a willingness to travel long distances to collect better tasting water for cooking and drinking. When washing clothes, they often prefer a larger body of water. Bathing or washing menstrual cloths requires privacy. Their ability to access water varies based on individual characteristics such as: life stage, as recently married women have less freedom of movement than older women; health status, as older women report difficulties carrying water long distances; cyclical patterns such as seasonality, as certain sources are inaccessible during monsoon season; and characteristics of the water and the source itself, which encompasses distance, perceived quality, and privacy, among others.

**Discussion:** These findings indicate that public health interventions and surveys that monitor household water should not only consider the presence of a water source on the premises, but should also include multiple source use and consideration of individual members of households and the time of data collection, as water sources may not be equally available or acceptable to all household members at all times. In climate-sensitive areas, multiple water source use may become increasingly necessary as a response to changes in the environment, and should be considered in climate resilience interventions.

## KEYWORDS

multiple water sources, water quality, life stage, menstruation, monitoring, climate change, decision-making

## 1. Introduction

Access to safe, accessible, acceptable, and affordable drinking water that is available when needed, is a human right and critical for health ([Resolution 64/292, 2010](#)). Research has shown that compromised water quality and access is associated with negative physical health outcomes, such as diarrheal ([GBD Diarrhoeal Diseases Collaborators, 2017](#); [Wolf et al., 2018, 2022](#); [Pruss-Ustun et al., 2019](#)) and respiratory diseases ([Hennessy et al., 2008](#); [Ashraf et al., 2020](#)) and



musculoskeletal injury, and negative mental health outcomes, such as anxiety (Brewis et al., 2019), psychological distress (Stevenson et al., 2012, 2016), and depression (Cooper-Vince et al., 2018; Brewis et al., 2019; Mushavi et al., 2020). Yet despite the need for and right to water, progress toward Sustainable Development Goal (SDG) target 6.1, which aims to “achieve universal and equitable access to safe and affordable drinking water for all,” (UN General Assembly, 2015) is lagging. Notably, data from 2020 reveal that two billion people lacked access to safely managed drinking water services globally (JMP, 2021).

It remains unclear how many people lack access to water for non-drinking purposes, such as personal and domestic hygiene, cooking, and homestead gardens, and where that water is accessed. A World Health Organization review of water quantity needs states that an individual needs an average of 50 L of water a day for drinking, cooking, and personal and food hygiene; only 5.3 L are allocated to drinking water in this estimate (Howard et al., 2020). An emerging body of research has reported that households access multiple water sources to meet household water needs, including in areas where households have access to improved drinking water sources (Daly et al., 2021). In Pacific Island countries, Elliott et al. (2017) found that 91% of households used more than one source, frequently choosing different sources for drinking and cooking than for handwashing or bathing. In Ghana, Chew et al. (2019) found that cultural norms that prevented people from accessing sources at specific times as well as the physical burden of collection from certain sources influenced women to collect water from multiple sources. Several studies have found multiple water source use to be influenced by seasonality, which can influence the quantity and perceived quality of water at a preferred source (Shaheed et al., 2014; Elliott et al., 2017; Chew et al., 2019; Daly et al., 2021). There is a need for greater understanding of multiple water source use, including what sources are used, and for what purposes.

Understanding how women select water sources for different uses is particularly important because they are typically responsible for water fetching globally (Sorenson et al., 2011; Graham et al., 2016). Water fetching incurs safety risks (Varickanickal et al., 2019), can be physically burdensome (Sahoo et al., 2015; Varickanickal et al., 2019), and is associated with musculoskeletal problems (Geere et al., 2018), all of which may influence where water is accessed and collected. Further, women are frequently the decision-makers over household water management, including both collection and use, decisions that may be constrained by water quantity (Wutich and Ragsdale, 2008), time required for fetching (James et al., 2002; Kher et al., 2015), distance to the source (Varickanickal et al., 2019), cost (Wutich and Ragsdale, 2008), and the need for childcare (Varickanickal et al., 2019). Multiple studies in South Asia have found that decisions surrounding household chore allocation, including water collection, are governed by senior women in the household (James et al., 2002; Sultana, 2009; Jha, 2012; Clement and Karki, 2018), often to the detriment of younger women, who report their movement outside the house and ability to fetch water from preferred sources to be limited as a result of cultural traditions or restrictions (Jha, 2012; Mehta and Saxena, 2015; MacRae et al., 2019). As such, in addition to understanding which water sources are used, it is also critical to understand what factors influence women’s decisions to use various sources.

While research documenting and describing multiple water source use is growing, global monitoring focuses on primary sources for drinking water only; it does not address other needs for water

at the household level or sources that are non-primary except for households that report their “main” source as packaged/bottled water (JMP, 2018). There is a need for global health researchers and practitioners to understand how and why various water sources are accessed, both to mitigate water-related risks to health and wellbeing beyond those linked to drinking water and to ensure sufficient quantity and acceptable quality of water for all needs.

The aim of this study is to understand water source selection and use among women in rural Odisha, India and to explore the reasons for their decision-making. In 2016, shortly after this study was conducted, India’s National Family Health Survey found that 87.5% of households in rural Odisha had an improved drinking water source (International Institute for Population Sciences, 2016); data collected from 2020 to 2021 show an increase in coverage to 90.8% (International Institute for Population Sciences, 2021). Jal Jeevan, a piped water scheme to extend access to piped water to all households in rural Odisha communities by 2024 is currently underway (Department of Drinking Water and Sanitation, and Ministry of Jalshakti). Understanding behaviors surrounding multiple water source use in Odisha, an area with high coverage of improved water sources at the time of the study, is crucial as this piped water scheme moves forward, particularly if desired outcomes related to health and wellbeing are to be achieved.

## 2. Methods

### 2.1. Study design and setting

This is a secondary analysis of qualitative data from a parent study that used a sequential mixed-methods design (Creswell and Clark, 2017) to create measures to understand and assess sanitation (Caruso et al., 2017a,b) and menstruation (MacRae et al., 2019; Caruso et al., 2020) insecurity and practices in villages that had been included in a trial evaluating the impact of a sanitation intervention on various health outcomes (Clasen et al., 2014). The qualitative data used for this secondary analysis were collected in eight rural villages in Puri district of Odisha, India. While the parent study focused on sanitation, a specific line of questioning was asked about water to initiate the interviews given the need for water in these communities for sanitation purposes, including post-defecation cleansing and flushing toilets, among other needs. The decision to carry out this secondary analysis emerged during the preliminary analyses focused on sanitation and menstruation as we found women noting the various sources of water that they use despite the widespread coverage of improved water in the area. Specifically, an estimated 94% of rural households in Puri were reported to have had access to an improved drinking water source at the time of data collection (International Institute for Population Sciences, 2016). This analysis sought to examine how women selected water sources in an area with a high coverage of improved water sources.

### 2.2. Study population and eligibility

Study participants were women aged 18 years or older residing in the study villages. Only one woman per household was eligible. Women were ineligible if they could not communicate verbally in Oriya or understand the purpose of the study. Participants were

initially recruited via community gatekeepers who were familiar with the characteristics of local residents and could identify eligible women to participate. In addition, snowball sampling was used to find additional participants. Specifically, the study team asked participants if they knew of any other women who fit the eligibility criteria and, if so, where to find them. The study team went looking for the additional participants identified using directions offered.

## 2.3. Recruitment

We purposively recruited 69 women from four life stages: (1) unmarried women (UMW;  $n = 17$ ) since young women living with their parents commonly fetch water for the household; (2) women who had recently married in the previous 3 years (RMW;  $n = 12$ ) as these women often have limited independent freedom of movement outside the home so depend on others to provide water for them (Joshi et al., 2011; Routray et al., 2015); (3) women who have been married for longer than 3 years (MW;  $n = 21$ ), since they typically have greater social status in the household and more freedom of movement outside the house than RMW (Medhi, 2002); and (4) women older than 49 years (OW;  $n = 19$ ), who may experience unique water challenges related to aging, such as difficulty walking or carrying heavy loads (Singh et al., 2013), which could make them dependent on others for their water needs. Women over 49 years are also under-represented in national surveys about water, sanitation, and hygiene (WASH). We recruited women at each life stage from each study village.

## 2.4. Data collection

Data were collected from March to April 2014 via in-depth interviews. Interviews were conducted in the local language (Oriya), by two female interviewers fluent in both Oriya and English, who were part of research team for the parent study. The interviewers were experienced in qualitative research and participated in a multi-day training on qualitative data collection which included piloting the interview guide.

Prior to each interview, demographic characteristics of participants were recorded, including their level of education, age, marital status, number of children, household water sources, sanitation facilities and practices, and menstruation resources and practices. The semi-structured interview guide for the parent study included five topics: water use, urination, defecation, menstruation, and hygiene practices. This secondary analysis focuses on the data related to water use. Questions about water use were the least sensitive and were asked first to develop rapport with participants. Participants were asked to describe “concerns and difficulties you or women like you in this community face related to water use.” Interviewers probed women to continue sharing concerns until nothing else came to mind. Once general concerns were shared, interviewers asked additional probing questions to identify concerns or difficulties related to water use in specific contexts: at night, during monsoon season, while caring for dependents, and during pregnancy. Interviews lasted between 30 and 90 min, were digitally recorded, and took place in a private space identified by the participant, typically the participant’s home. After each day of data collection,

interviewers reviewed notes from each interview, summarized them, and discussed each interview and key themes that arose with the broader research team. Data collection continued until saturation of issues was reached within each of the four life stages (Hennink et al., 2017; Hennink and Kaiser, 2021).

Data comprised 69 interview transcripts that were generated by simultaneously translating and transcribing recorded interviews from Oriya into English. To check the accuracy of the translation and transcription, 10% (i.e., 6 min of a 60-min interview) of each interview was independently transcribed in Oriya by a team member who had not conducted any interviews, and a separate team member then translated Oriya transcription into English. This was then compared with the simultaneous transcription and translation of the same segments of data to check accuracy.

## 2.5. Data management and analysis

All data were managed using MAXQDA 2018 (VERBI Software, 2018). We used a grounded theory approach to analyze the data which involved the following steps. First, a preliminary codebook was created a priori, from topics and questions in the interview guide. Data were then read and memos were written to capture specific concerns, behaviors, and issues raised by participants themselves. Several close readings of the data generated further inductive codes that were added to the codebook. All relevant data were then coded which allowed the analysis to focus on specific topics one at a time. Each code was reviewed in detail, and categories were developed to capture water needs, preferences, and challenges to accessing water sources. These categories of needs were then compared across life stages to identify patterns and linkages. Links between categories were explored and conceptualized into an explanatory framework (Figure 1) to show how women select water sources. All components of the framework were validated by continually returning to the data to confirm linkages, by considering negative cases and their contexts, and through discussion with analysts, wherein three researchers reviewed data to confirm results were evidence-based vs. individual interpretations.

## 2.6. Ethics and informed consent

The Emory University Institutional Review Board in Atlanta, Georgia, USA (IRB00072840) and the KIIT University Ethics Review Committee in Bhubaneswar, India (KIMS/KIIT/IEC/795/2014) approved study protocols. Women provided oral consent to participate in interviews and for the recording.

## 3. Results

Participants reported multiple reasons for domestic water use, including drinking, cooking, bathing, washing utensils, washing clothes, washing menstrual cloths, and anal cleansing. Participants acquire water from a variety of sources, including private and public wells, private and public ponds, rivers, and from water sellers. Women reported a myriad of influences that affect their selection of water sources beyond the specific use of water, including their personal characteristics, cyclical (e.g., day/night) or seasonal

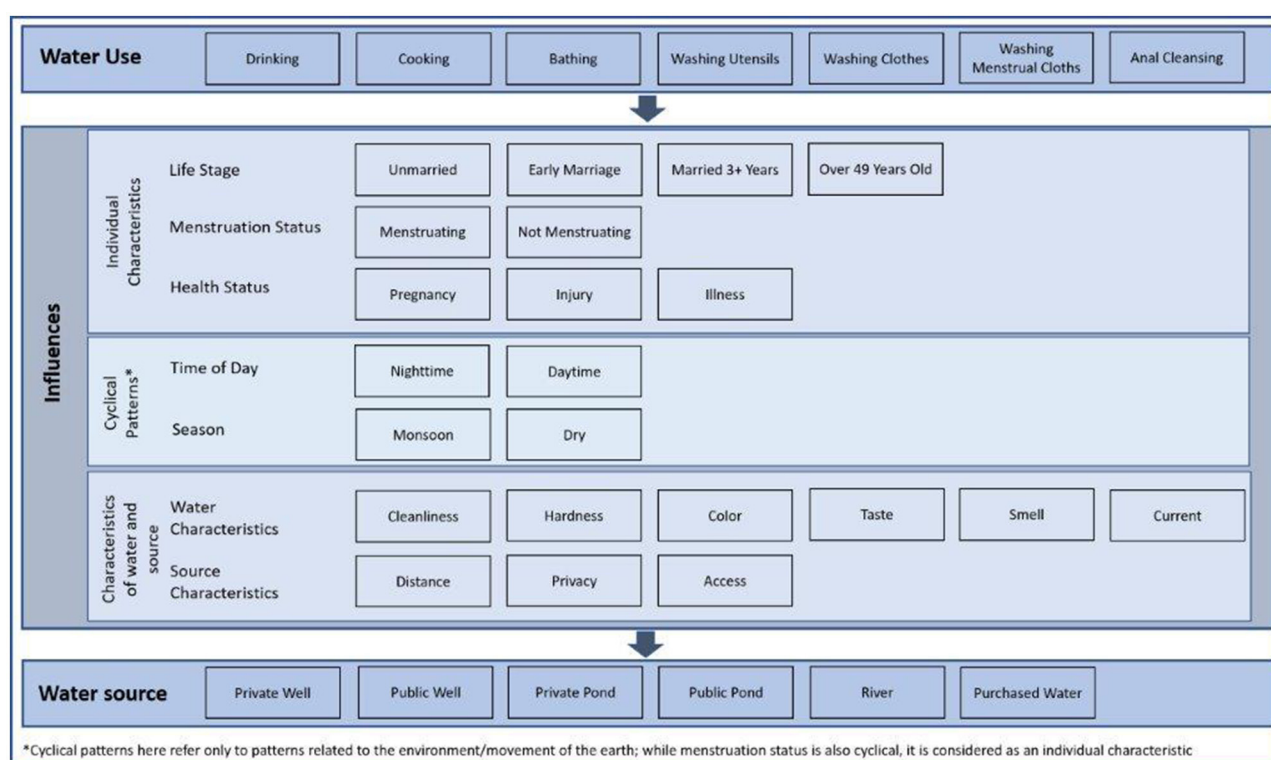


FIGURE 1  
Influences on selection of water source.

influences and characteristics of the water and the source. Influences on water source selection also change over time and require concurrent consideration of multiple influences, creating a complex web of intermingling and compounding influences on decision-making regarding whether water at a specific source is acceptable for a specific need at a particular time. The influences on water source selection are summarized in Figure 1 and described in greater detail in the sections that follow.

### 3.1. Individual influences

Women reported that their selection of water sources, both for transporting home and for on-site use such as bathing or washing clothes at the water point, is influenced by their personal circumstances, such as life stage, menstruation, and health status.

#### 3.1.1. Life stage

Unmarried women living in their parents' home (UMW) described water collection as their primary household chore. Several unmarried women claimed that water collection is their only responsibility apart from schoolwork, and they can usually complete this task without difficulty. These women reported fewer constraints on their freedom of movement before marriage than immediately after marriage. As UMW in this study reported fewer household responsibilities that require water, such as cooking, cleaning, or laundry, they have fewer water needs. However, UMW have to be mindful of their reputation in the community to secure husbands; if they are seen talking to boys during water collection, this may

negatively affect their reputation and marriageability. UMW reported more concerns over safety, such as fear of robbery or assault, when walking to water sources compared to older, married women. This perceived risk serves as a barrier to water collection, especially at night or from distant sources, affecting their decisions on where to get water.

Due to cultural tradition, recently married women (RMW) typically move into the home of their husband's family where they are expected to stay indoors and not be seen, meaning they rely on others in the household to access water for them. Even women in families with private water sources, for example, a well outside the house but within their household compound, reported needing other women in the family to fetch water for them. If the primary water collector, such as the mother-in-law or sister-in-law, is not at home, women reported having no water or insufficient water when needed. RMW who do fetch water themselves often have dependents, like small children or elderly in-laws to care for, and described either having to rush to fetch water or having to find someone in the family willing to provide dependent-care. Social support within the household, whether for water provision or dependent-care, is therefore necessary for RMW to meet their water needs.

RMW expressed differing levels of satisfaction regarding their reliance on others to meet their water needs. Some RMW are content to depend on their mothers- and sisters-in-law to fetch water as they feel shy in public. Others reported frustration that they must depend on others to meet their water needs. Women without sisters-in-law or a reliable social network of women in the household shared concerns about not having sufficient water to drink or bathe. One RMW who is not a full-time resident of the study area refused to adhere to constraints on movement that prevent water collection, causing

friction with her husband's family. She and her husband moved to a city where she has more freedom of movement, and her parents-in-law in the area disapprove when she refuses to remain at the family home when visiting them.

Women who have been married for several years (MW) and are in their thirties or forties, are often the primary water collectors for their household as they have the fewest constraints on their freedom of movement. They have fewer cultural norms restricting their movement outside the house than RMW, and they reported fewer physical infirmities preventing them from accessing water sources than OW. As more senior members of the family, especially if they have borne children, they have fewer restrictions on their mobility and are likely to be assigned the task of water collection by their mothers-in-law who may not have the health or the desire to fetch water themselves. This life stage group reports the highest burden of work, as they do not have sufficient authority in the family to delegate chores to other women.

Older women (OW) often have more physical limitations that affect water collection. They reported tiring easily, difficulty pumping water, and having sore hands, preventing them from carrying heavy loads of water. However, OW have more power in the household than women in other life stages, and they use that authority to delegate water collection to their daughters and daughters-in-law living in the house, particularly if they are unable to fetch water without help. Women without daughters-in-law reported a concern that their sons would not find wives to help them with household chores like water collection. Some OW who are physically able to carry water serve as the primary water collector, as they have more freedom of movement to leave the household and are less likely to report fear of assault or robbery during water collection.

### 3.1.2. Menstruation status

Women's menstrual status affects the amount of water needed to meet their needs. During menstruation women need more water to wash their bodies, and soiled menstrual cloths, clothes, and bedsheets. Washing sheets requires carrying so much water that women reported sleeping out of their beds when expecting to begin menstruation to avoid the additional work of washing soiled sheets.

Cultural norms around menstruation, such as the perception that menstruation is polluting, limit women's access to water, which may require them to seek help from others to meet their needs. When menstruating, women are not permitted to go inside temples, participate in festivals, or worship at their household shrines. In one village, the water source is located inside the temple, which prevents menstruating women from accessing the water. Women therefore have to rely on others who are not menstruating to fetch water from that source. Even women with private water sources in accessible locations face restrictions during menstruation and require help. Cultural norms require women to have a ritual bath as soon as menstruation begins. Prior to the bath, women have prohibitions on what they may touch, including food, beds, and household shrines. Some women discussed how they are unable to touch their household tube well until they have had their ritual bath. Women rely on support from female family members to collect water for the ritual bath. Unmarried women rely on their mother, sisters, or sisters-in-law to accompany them to the tube well to dispense water for the ritual bath and to carry and hold their clean clothes while they bathe; while married women rely on their mothers- or sisters-in-law. This dependence on family support begins at menarche and

continues through to menopause with no change due to age, marital, or motherhood status. Women described visiting some water sources without support during menstruation, such as ponds or rivers, demonstrating that some water sources are considered acceptable for their use during menstruation.

In addition to an increased need for social support, menstruation also requires the need for privacy when accessing water as women are embarrassed to have others witness them washing their menstrual cloths or bathing. Women who travel to rivers and ponds for cleaning cloths need to wait for men to leave those areas before they will wash bloodied materials. Even women with tube wells within their family compound reported additional privacy needs and embarrassment if seen. One participant reported that her father-in-law passed all of his time in the courtyard where the tube well was located, which presents challenges when she needs to take her ritual baths. She feels embarrassed when her father-in-law asks why she is bathing at an odd time and lies, saying she stepped in dog excrement for example, to avoid disclosing her menstrual status.

### 3.1.3. Health status

Changes in health status as women age or transition through different life stages can temporarily or permanently affect a woman's ability to fetch water. Pregnant women reported greater difficulties carrying water long distances. Women reported that water collection can exacerbate their menstrual symptoms, like stomach ache or weakness, particularly if they have to walk long distances in hot weather. Women with injuries and women with chronic or permanent conditions such as arthritis, incontinence, or physical limitations related to age also struggle to carry water or use the mechanical handpumps. These physical ailments or health conditions, whether temporary, chronic, or permanent, limit the water sources they can access, how often they can make the journey, how far they can go to fetch water, and how much water they can carry.

## 3.2. Cyclical patterns

Cyclical patterns also influence water source selection, including changes in time of day and season that may render certain water sources inaccessible or unusable for certain times of the day or year.

### 3.2.1. Time of day

The majority of participants indicated that water collection times are limited to daylight hours. Women do most of the domestic tasks requiring water during the day and are able to store water during daylight hours to accommodate nighttime drinking water needs, thus reducing the need for nighttime water collection. Because women avoid the task of collecting water at night, most did not identify safety issues related to nighttime water collection. The exceptional cases who did report collecting water at night largely did so due to unplanned events regarding water, and reported fearing snakes, dogs, vehicles, and people.

The most frequently reported unplanned event requiring water at night was the unexpected onset of menses. The onset of menstruation requires water for ritual bathing, which is already a struggle for many women during the day and is exacerbated at night. Social support



for getting water can be harder to obtain at night, when the family is asleep, and can vary by life stage. Young women living in their parents' home are more willing to wake their mothers and sisters for help than women newly living in their husband's home, who are hesitant to wake mothers- or sisters-in-law.

### 3.2.2. Season

Women reported that the water quantity, accessibility, and quality at a source change seasonally, impacting which sources they use. In the dry season ponds, rivers, wells, and boreholes produce less water. Reduced quantity of water and decreased water currents in river mean that women need to visit multiple locations to gather sufficient water, which can make water collection take longer. Participants described even greater difficulty for water uses that demand larger quantities of water, like bathing. Women who usually bathe in ponds or rivers could find water sources dried up or too muddy for use.

The rainy season similarly can affect the accessibility and quality of water at different sources. Accessing water sources becomes more difficult in the rainy season. Women are unable to carry water while holding an umbrella, so they reported getting wet or waiting until the rains stopped. Fetching water in inclement weather presents additional safety concerns, such as slipping and falling because the paths were slippery from rain and "siuli" (an algae-like growth). Mosquitoes that breed in standing water or leeches that live in muddy areas may bite women as they collect water. One participant reported compounding physical and social barriers to water access noting that the rain creates a swamp that prevents her from taking her usual path, and her uncle will not allow her to detour across his land, which would be the quickest and safest alternate route.

Women reported that heavy rains can change the water quality. Rains increase the insect population, which can get into the well water, resulting in some participants having to change water sources. Other participants reported greater satisfaction with water during the monsoon season. The water level in ponds, rivers, and wells is higher, which makes it easier to use or collect a sufficient quantity of water for bathing, washing, and rainwater harvesting for water collection, storage, and use. One participant reported additional water needs during monsoon season, as her duties caring for livestock require her to bathe more frequently, but those needs are mitigated by the more easily available and plentiful water supply.

## 3.3. Characteristics of water and source

Women's choice and preferences of water sources are also influenced by the characteristics of both the water itself and the source it comes from. The characteristics of the water from different sources affect women's perception of water quality for different household needs, which in turn drives their choice of water source. Participants require the highest water quality for drinking and cooking, meaning water that has no color or smell and is not perceived as dirty, chemically contaminated, or hard, but they still have to make choices on which quality standards they most prioritize. Water that is iron-rich or saline does not taste good for drinking, and it can affect the taste and smell of rice boiled in the water, leading participants to use alternate sources. One participant reported feeling forced to use pond water to cook even though she perceived the water as dirty, because

she said the tube well produced hard water that turns pakhalā, a traditional rice and water dish, to "live saliva." A participant from the same village likes the water in her tube well for drinking, and described the taste as "sweet" but still uses the pond water to cook, despite having to filter and boil it, because she claims the tube well water spoils the food and makes it smell. In another village, a participant used a well at a nearby school until the water became yellow and saline. At this point, she began using a tube well from another village that she has to walk to, even though she suffers verbal abuse from the local villagers who do not want women from outside the area using their water point.

Different water quality concerns were reported for water used for washing clothes or bathing. Several participants prefer to draw water from sources other than conveniently located tube wells because their tube wells produce water that is iron-rich and red in color, which then stains clothing if used for washing. Participants reported that ponds contain large amounts of trash, and rivers may have cows being bathed or dead animals and feces in the water, so disgust at the water quality and the smell prevents them from bathing there if there are other options available. If the water from sources such as rivers is sufficiently clean, participants prefer these sources for bathing or washing clothing, as the flow or current of the water facilitates these activities.

In addition to the characteristics of the water, the characteristics of the water source itself can influence which water source to use. Distance, access, and privacy are all considerations for water source selection, depending on the specific water use. If large quantities of water need to be collected and carried, some participants reported going to sources within a shorter distance from their home, as walking long distances with large quantities of water is physically tiring and time-consuming. However, distance may not be as prohibitive a factor if smaller quantities of water are being collected for drinking from a source perceived to be high-quality.

Privacy is an important influence when finding a source for bathing or tending to menstrual needs so participants can maintain dignity. Participants do not want to be seen by men when bathing, so they may choose to use ponds in their back yards, even if those ponds are dirty. Several women discussed the importance of not being seen when washing cloths used for menstruation. This can result in using dirty ponds to clean menstrual cloths, and several women complained of infections that they believe happen as a result. Some participants reported waiting at rivers until others are done using them in order to have the privacy necessary for bathing or washing menstrual cloths.

Some water sources may be selected or avoided due to the ability to access them comfortably or easily. Pathways to the water source may shift as a result of floods, or become unusable at night due to safety concerns. Participants also reported experiencing social barriers to accessing some water sources. Participants can be harassed or blocked from using certain sources by other users, as experienced by one woman who tried to use the water point of a neighboring village. Another young girl reported that despite the presence of a private tube well near her house, she was not comfortable using it because boys would congregate there, drinking and spitting.

## 4. Discussion

Women in rural Odisha reported a variety of household needs that require water and noted that decisions on source selection



are based on numerous influences including, but not limited to, the intended use of the water they are fetching. Other influences include individual characteristics that may affect their ability to access sources, such as physical limitations as noted by women who were elderly, physically disabled, or pregnant; or cultural norms, such as menstrual restrictions or constraints to movement among women who were newly married. This research is consistent with findings in a recent systematic review, which found that using multiple water sources is common, and water source selection is governed by water quality and a series of concurrent assessments of resource efficiency that consider cost, distance, and time, and shift between wet and dry season (Daly et al., 2021). Findings illuminate the importance of considering multiple water sources when designing water access systems and monitoring water access, as households may not have a clearly defined primary source of water, and source selection can vary throughout the year based on seasonality (Box 1).

Our findings are particularly important in the context of Jal Jeevan, the local government's expansion of piped drinking water schemes toward rural households in Odisha. We found multiple water source use to be common despite high coverage of tube wells at the household level. It will remain critical to assess multiple water source use as the piped water scheme goes into effect to understand if and how use of multiple sources has changed, including what influences women's decisions about water sources selected. These piped schemes may not achieve the expected uptake if they do not produce water perceived to be acceptable by women (Kulinkina et al., 2016). As the focus of the scheme is limited to drinking water, women may continue to collect water from multiple sources for other household uses, particularly if they are not consulted on placement of the tap. Past research in Puri district has shown that women have not been consulted on placement of latrines, resulting in latrines that were not used because they did not sufficiently meet women's needs (Routray et al., 2017). Restrictions that prevent women from touching water sources before they have had their ritual bath at menstrual onset will likely remain, meaning that new water sources may not alleviate the need to seek social support or alternative water sources. As demonstrated in these results, women are the primary decision-makers and collectors of water, so it is crucial for them to be consulted as this scheme moves forward. Further, the piped water scheme should be evaluated not only to assess if it provides clean water, but if gender-specific impacts—which are often ignored (Caruso and Sinharoy, 2019)—are realized, including improved safety, time savings, and reduced harm, injury, and labor (Box 1).

These findings are consistent with existing qualitative research that has demonstrated a variety of cultural influences on women's ability to use certain sources, particularly in multi-generational households. Daughters-in-law in rural Bangladesh have been found to collect water from arsenic-contaminated sources near houses, instead of traveling outside the house and therefore exposing the family to disgrace (Sultana, 2009). Older women may have fewer restrictions on their movement, but as senior women in the household, they are able to delegate chores such as water collection to daughters-in-law (Sultana, 2009). Similarly, our results show that recently married women who were not able to leave the house due to cultural traditions also had limited access to water sources, resulting in stress over their reliance on other family members to meet basic needs. Additional cultural constraints in this population, which are described more thoroughly by MacRae et al. (2019)

prevent menstruating women from accessing water as needed, despite increased water requirements during menstruation. This research demonstrates that not all women within a household have equal access to water, thus monitoring efforts that presume the presence of a household water source is sufficient to result in equitable water access for *all household* members may be over-estimating access, even if the source is located on the household premises. Monitoring water access at the individual level for uses beyond drinking water alone could provide more accurate assessments of equity than current assessments at the household level, and would be consistent with a recent call for greater consideration of gender in WASH-related monitoring (Caruso et al., 2021) (Box 1).

This study supports the importance of user acceptability of water, finding that participants prioritize *perceived* quality of water, which includes odor, taste, and appearance (World Health Organization, 2022). The Joint Monitoring Programme for Water Supply, Sanitation, and Hygiene (JMP) collects and reports on water sources to track progress toward the SDG target of “universal and equitable access to safe and affordable drinking water for all” (UN General Assembly, 2015). The gold standard, “safely managed drinking water sources,” or improved sources that are “accessible on premises, available when needed, and free from fecal and priority chemical contamination” (JMP), not only ignores other household water priorities, but only judges water quality according to microbiological, chemical, and radiological standards which ignore users' priorities for acceptability (World Health Organization, 2022). In Ghana, qualitative research found that people avoided piped water systems that produced salty water not only because of taste, but also because soap wouldn't lather when doing laundry (Kulinkina et al., 2016). In several communities in rural Vanuatu, households chose rainwater over groundwater for drinking and cooking, despite microbiological testing showing that rainwater had higher levels of *Escherichia coli* contamination (Foster and Willetts, 2018). This research supports those results, finding that iron-rich or saline water is not perceived as acceptable for drinking or cooking, leading participants to avoid using water from improved sources nearby. The JMP core questions for household surveys assume one primary drinking water source; monitoring efforts should, whenever possible, use the expanded questions in order to capture information on multiple water sources for drinking.

This research further demonstrates the importance of seasonality in water source selection, and understanding multiple water source use may become increasingly important as the climate continues to change and seasons grow more unpredictable or extreme. Water sources may change between wet and dry season, as a result of changes in quality and availability in sufficient quantities (Elliott et al., 2017; Daly et al., 2021). Communities that rely on rainwater during the wet season may require different or supplementary sources in the dry season and may resort to purchasing water for vendors, spending long wait times at shared water points, and using less water (Kulinkina et al., 2016; Daly et al., 2021). Rainy seasons have their own risks, as heavy rains can contribute to contamination of surface waters and increases in water-borne diseases (Ahmed et al., 2020). In their exploration of multiple water source use in developing countries, Elliott et al. (2019) suggest that the use of multiple water sources diversifies risk and builds resilience, which can therefore help lead to water security in an unpredictable climate. Given the shifts in water source use based on seasons, surveys should consider the

**BOX 1 Implications for policy and practice.**

- **Monitor the use of multiple water sources for a more comprehensive understanding of needs and practices.** Current national and global monitoring efforts only query the “primary” or “main” water source used for drinking, which dismisses both the possibility that multiple water sources may be used and that water needs extend beyond drinking. Further, those with improved water source access may still use other sources for drinking and other needs. The source used as the primary or main source for drinking also may change depending on a variety of influences, including seasonality, perceived water quality, and specific need. The narrow approach of monitoring just the primary drinking water source type may over-estimate access and use of optimal sources. Thus, monitoring efforts should assess the use of multiple water sources for both drinking water and other uses to ensure all practices are assessed more accurately.
- **Monitor individual-level water access and use, not just access and use at the household level.** Current monitoring efforts focus on assessing water access at the household-level, which assumes water is equally accessible to all household members. However, household-level data collection is gender-blind, obscures differential access to water within a household, including women and girls, individuals with physical limitations, and other groups who may experience physical barriers or socially-mandated restrictions to their access, and ignores those who are unhoused. Current progress toward the SDG 6.1 goal of safe and accessible water for *all* may be over-estimated based on these assumptions. Individual-level monitoring data on water access, use, and experiences could illuminate differences that are currently hidden.
- **Ensure equitable access to water sources.** Those involved in the delivery of water systems (e.g., piping) or other forms of water infrastructure (e.g., community bore-holes) should ensure equitable access to women, girls, and vulnerable populations. Water delivery efforts should not contribute to inequity by not providing services to all or by placing infrastructure in areas that may be inaccessible to some, whether due to physical or social barriers.
- **Design interventions for household water for domestic uses beyond drinking and cooking.** While improving the quality of water for consumption is important for reducing risk of pathogen exposure, initiatives that seek to improve water access should consider water needed for bathing, washing clothes, and other uses. Focusing on improving drinking and cooking water alone misses the opportunity to positively impact the lives of women who largely are responsible for all water needs. Improving water access for all needs could also result in reducing time burden, physical labor, and safety risks of water collection and water-related tasks that women shoulder.

season of data collection. Further, future research should also assess if and how climate change impacts water sources used and why, with particular attention to women’s decision making and experiences given the likelihood that they will be particularly impacted (Sinha et al., 2019).

## 4.1. Strengths and limitations

A major strength of this study is that participants were asked an open-ended question about concerns related to water use, which enabled them to share behaviors such as multiple uses of water, including drinking, cooking, bathing, anal cleansing, and washing utensils, clothes, and menstrual cloths. Asking about the full range of water use beyond drinking water enables a more complete and nuanced description about water needs, experiences, and challenges than studies that are limited to drinking water or household-level assessments of access alone. Despite evidence of the importance

of water for productive uses (Hall et al., 2014), the open-ended questioning did not prompt participants in this context to indicate concerns about water for productive purposes (e.g., gardening, caring for livestock, or income-generating activities). Probes could be added to future work about water uses and water-related concerns related to productive use as confirmation. Additionally, because this research focuses exclusively on women, men’s decision-making regarding water selection and use and gendered household dynamics were not explored. Future research can investigate perceptions from men and women.

This study engaged rural women in Odisha and its findings are limited to that population. While the study population included women from various castes and tribes, there were no questions asked about water source decision-making related to caste. Other studies have found that caste may limit women’s ability to access certain sources for water collection (Singh, 2006; Narain, 2014; Leder et al., 2017) or bathing (Sahoo et al., 2015), and so additional study is warranted. However, because of purposive sampling among women of different ages and marital statuses, from different villages, and with different water and latrine access, there is diversity in experience and variability in the data. Girls under age 18 were excluded from data collection, so their voices are only represented through adult participants’ sharing of their past experiences or the experiences of other, younger women they know. The deliberate inclusion of women over 49 years of age is an important contribution. Research tends to focus on girls and women of reproductive age, but increases in age are associated with higher rates of disability, which result in poorer WASH access (Mactaggart et al., 2018).

## 5. Conclusion

A growing body of work has explored the prevalence and importance of understanding multiple water source use. The interweaving influences on water source selection are important to understand from a monitoring perspective, where calls have been made for a greater consideration of gender in data collection, and also from the perspective of those designing and implementing public health interventions. Consideration only of water quality and quantity and location of water source may result in underperforming interventions. Extending water sources to homes or communities should take into consideration cultural norms that may limit access to water and community perspectives on what makes a water source acceptable.

## Data availability statement

The datasets presented in this article are not readily available because: ethical restrictions prevent these data from being publicly shared. Participants did not consent for their data to be shared with anyone outside the research team. While this analysis focuses on water, the full data include more sensitive information on menstruation, urination, and defecation practices, and how these practices result in shame and embarrassment to individuals and families. Participants were assured of their privacy and the confidentiality of the data. Requests to access the datasets should be directed to: [bethany.caruso@emory.edu](mailto:bethany.caruso@emory.edu).

## Ethics statement

The studies involving human participants were reviewed and approved by Emory University Institutional Review Board in Atlanta, Georgia, USA (IRB00072840) and the KIIT University Ethics Review Committee in Bhubaneswar, India (KIMS/KIIT/IEC/795/2014). Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

## Author contributions

MP conducted the formal analysis, contributed to interpretation of results, created the conceptual model, and wrote the original manuscript. MH contributed to the supervision of the analysis, interpretation and validation of the results, and review and revision of the conceptual model. MD and MR contributed to the investigation, data curation, and validation of the results. TC acquired funding and resources and administered and supervised the project. BC conceptualized the interview guide and methodology, contributed to the investigation, data curation, administration of the project, contributed to the supervision of the analysis, interpretation and validation of the results, and review and revision of the conceptual model. All authors reviewed, edited, and approved the final manuscript.

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# Working together: A study of civil society partnerships between WASH (water, sanitation, and hygiene) and GESI (gender equality and social inclusion) organisations in Timor-Leste

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This article reports on an empirical study conducted in Timor-Leste that explored the drivers, benefits, and challenges of partnerships and collaborations between water, sanitation, and hygiene (WASH) and gender equality and social inclusion (GESI) organisations as integral parts of the WASH system. The research design was primarily qualitative and included a data-collection workshop with 30 representatives from 16 civil society organisations (CSOs) in Dili, longitudinal research involving two rounds of semi-structured interviews over 2.5 years with five organisations, and semi-structured interviews with an additional 18 CSOs. We applied a framework of post-development theory, including critical localism and working contingently. Key drivers to form partnerships were found to be the identification of community WASH service gaps and the alignment of advocacy agendas. Key benefits reported were increased inclusion and empowerment outcomes and strengthened organisational knowledge and capacity. Challenges emerge when organisations' key staff change, strategies misalign, and financial and administrative capabilities differ. The study contributes practical insights into how civil society organisations (CSOs) partner to strengthen mutual WASH and GESI strategies and programmes and their outcomes. We recommend strengthening the partnerships between WASH and GESI organisations in ways that are cognisant of power dynamics, local priorities, and capacity needs and promote longevity and continuity through ownership of decisions at the local level. Our findings suggest that meaningful, reciprocal, and respectful engagement with WASH and GESI organisations enables WASH programmes to be in a better position to address the harmful norms that drive inequitable behaviours, thus strengthening localism, and the WASH governance system overall.

## KEYWORDS

partnerships, gender, localism, civil society, inclusion, post-development, water, WASH



## 1. Introduction

The turbulent history of Timor-Leste, encompassing colonisation, military occupation, and domestic political challenges, has hampered development in the water, sanitation, and hygiene (WASH) sector. The *Republica Democratica de Timor Leste* (RDTL), or the Democratic Republic of Timor-Leste, achieved independence on 20 May 2002 after 24 years of military occupation by neighbouring Indonesia (1975–1999) and 2 years under the administration of the United Nations (UN). The Indonesian occupation was fiercely resisted by an independence movement, resulting in a high death toll. Today Timor-Leste is considered a successful, resilient democracy but one that faces post-conflict and economic challenges (Croissant and Lorenz, 2018). One of these challenges is the provision of clean water and sanitation, with 43% of its people not having access to basic sanitation, 15% not having access to basic water supplies, and 72% not having access to basic hygiene (World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), 2021). The lack of access to water, sanitation and hygiene affects the poorest and most marginalised people, primarily in rural contexts (Troeger et al., 2015; Neely and Walters, 2016; Clarke et al., 2021).

Safely managed WASH services are commonly sought after and requested by those responsible for reproductive and domestic labour, predominantly women and girls (in all their diversity). WASH is an area of life that women and girls are often keen to participate in because of the pressing WASH needs they experience and their knowledge of community needs. Better access to WASH facilities would do much to improve the lives and status of the poorest women in Timorese society (Grant et al., 2019a). In 2021, Timor-Leste had a female Human Development Index (HDI) score of 0.580, in contrast with 0.633 for males, placing it among the lowest gender-parity ranked countries (United Nations Development Program (UNDP), 2022, p. 288). Women also have significant knowledge about WASH needs and systems that can be drawn on to design and implement effective and sustainable WASH. For these reasons, WASH and Gender Equality and Social Inclusion (GESI) advocacy and service are natural allies with civil society organisations (CSOs) in Timor-Leste, and their partnerships and collaborations are the focus of this study. We aim to provide insights for Timor-Leste CSOs collaborating to advance gender equality and build WASH systems led by Timorese people and supported by international donors and agencies. This article reports on an empirical study conducted in Timor-Leste (from 2018 to 2021) about selected partnerships developed across WASH and gender equality CSOs, with an in-depth focus on partnerships developed as part of a WaterAid-facilitated project to strengthen the WASH system in Timor-Leste.

## 2. Theoretical framing of the study

Focusing on locally led WASH and GESI CSO partnerships and collaborations, this study draws on and contributes to the literature and discourse about post-development theory, including critical localism and working contingently. We have integrated feminist, empowerment, and development theories related to conceptions of power and empowerment into the study design and analysis process

and offer five foundational theoretical framings for this study: (i) post-development; (ii) critical localism; (iii) contingency theory; (iv) empowerment; and (v) CSO partnerships. Each provides a basis and rationale for an empirical study on CSO partnerships in Timor-Leste and is explained below with reference to partnerships and collaborations for development outcomes.

### 2.1. Post-development

Post-development theorists have long critiqued the notion of development as a Northern discourse that obscures local knowledge, systems, and practises (Escobar, 1995a,b). Escobar called for the development agenda to create intellectual space for a local agency to assert itself and for the recognition of the importance of grassroots movements (Escobar, 1992). Practical post-development theorists place significant weight on community-based initiatives and social movements. As Schoneberg offers: “Post-development demands the questioning of dominant discourses, representations, and power/knowledge nexus, and argues that this can only be achieved by local, i.e. Southern, movements and organisations themselves” (Schoneberg, 2017, p. 605).

In a study on aid and development trends in Timor-Leste in McGregor (2007) drew on the practical post-development approach adopted by Latouche (1993), Escobar (1995a,b), and Gibson-Graham (2005). McGregor found that post-development theories had ‘successfully challenged many of the ways in which we think about development but have yet to substantially influence development practice’ in Timor-Leste (2007, p. 155). While post-development theory questions the very desirability and centrality of the notion of “development,” the urgent humanitarian and sustainability challenges facing the world are undeniable. So, what are the alternatives to conventional and Northern-led development? In his study of development paradigms in Timor-Leste in 2007, McGregor found that “The international and individualised partnerships between institutions and communities would seem to hold the biggest potential for cross-cultural support and understanding” (2007, p. 167). Our study sought to explore one of the dimensions of the post-development social change agenda, which sees “local, pluralist and solidaristic initiatives [as] central, and where connexions to place, local knowledge and the non-human are highly valued” (Roche et al., 2020). A “localism,” to which we now turn.

### 2.2. Critical localism/localisation

Externally led development interventions are often poorly informed by local knowledge in terms of language, culture, history, and politics. The international humanitarian and development sector has long been criticised for ignoring local knowledge, being top-down and Northern-driven (Escobar, 1992). Local preferences and ways of working are often different from Western or “Northern” ideas and the practise of development agencies and may be overlooked by larger, better-resourced International Non-Governmental Organisations (INGOs) (Crewe and Harrison,

1998; Guttenbeil-Likiliki, 2020; Roche et al., 2020). Weak “local ownership” and gaps between local and international priorities are major factors explaining the failure of many externally imposed state building interventions, such as that implemented by the UN in Timor-Leste after the violence and destruction of the Indonesian withdrawal in 1999 (Chopra, 2002).

In response to the critique of top-down approaches to development, “localisation” (or “locally led”) has emerged as a contemporary reform in the development sector. Drawing on the work of McCulloch and Piron (2019) and Booth and Unsworth (2014), Roche et al. define locally led development as “driven by a group of local actors who are committed to a reform agenda and would pursue it regardless of external support” and “who are local in the sense of not being mere implementers of a donor agenda” (2020, p. 137).

Although local participation has been a long-held guiding principle for development since the 1970’s, it is elusive (Eversole, 2003). Despite progress in visions of and commitments to localisation, implementation is “patchy at best” (Roche and Denney, 2021, p. 23). Local partners are often utilised in a way that reinforces existing paradigms of donor power and North over South rather than transforming development practise (Roche and Denney, 2021, p. 23; Guttenbeil-Likiliki, 2020). Critics of top-down development call for critical engagement with the concept of “local” in terms of how power is shared but also warn against romanticising and over-validating the local level (Mac Ginty, 2015). In this vein, the localism agenda has been criticised for proliferating partnerships with “local” actors that remain entirely transactional in nature but provide a nod to wider donor trends’ (Smith, 2017, in Roche and Denney, 2021, p. 25). Critical localism, in comparison, challenges weak attempts to engage or empower at the local level, in some cases over-validating local norms at the expense of more flexible and activity-oriented (rather than place only) interpretations of the local (Mac Ginty, 2015). Broader conceptualisations of the local include systems of beliefs and practises that “loose communities and networks may adopt that change over time and with circumstances” (Mac Ginty, 2015, p. 851). By adopting a critical lens to local engagement, the present study investigates whether or not collaborative, genuine, and effective partnerships with local Timorese CSOs improve and strengthen outcomes for WASH and GESI programmes and organisations. It focuses on power, knowledge diversification, local beliefs, and norms and practises.

## 2.3. Contingency theory and CSO partnerships

Contingency theory looks at how contextual factors shape organisational outcomes and asserts that organisational effectiveness depends on the organisation’s ability to adapt to its environment. Turbulent environments require organic organisational approaches in the development sector to achieve their aims (Sauter et al., 2009). While contingency theory has evolved since the 1950’s, more recent applications, such as that developed by Honig and Gulrajani (2018), offer three principles of contingency theory. Development actors must (i) focus on better

understanding the local contexts in which they operate; (ii) adapt or tailor development initiatives to local contexts during project design; and (iii) change projects and programmes in line with how contexts change (Honig and Gulrajani, 2018, p. 69–70). To be effective, working contingently must be done in association with the autonomy,<sup>1</sup> motivation, and trust of people working directly with communities and change agents. Together, these factors provide a pathway to advancing contingent ways of working with a focus on the individuals themselves within a context they uniquely understand (Honig and Gulrajani, 2018, p. 74).

Honig and Gulrajani (2018) emphasise the importance of trust, especially of field-level staff, in order to adapt to changing local circumstances. Trust is an essential component of working contingently, and “contingent ways of working need to be coaxed, not commanded” (Honig and Gulrajani, 2018, p. 71). In the WASH sector in Cambodia, localisation has been found to enhance the effectiveness of leaders through building on existing institutional arrangements and adapting to a variety of participants’ needs (Nhim and McLoughlin, 2022). However, increased autonomy alone is not a panacea. It needs to be supported carefully by tailored feedback loops that leverage positive change (Meadows, 1999). Honig and Gulrajani (2018) call for a fundamental rethink of where decision-making needs to take place to achieve the changes that development agencies aspire to, in line with the critical localism and post-development views of development outlined above.

## 2.4. Gender, empowerment, and movement building: “Power with”

CSO partnerships and social movement building are essential for advancing gender equality and inclusion in all societies (Htun and Weldon, 2018; MacArthur et al., 2022; Siscawati et al., 2022). Seeking renewed possibilities for social change in gender equality and associated issues, such as ending violence against women, international women’s advocates have pursued partnerships with national women’s movements (Batliwala, 2012; Horn, 2013; Guttenbeil-Likiliki, 2020). A stronger focus on supporting local or national women’s organisations and movements follows several decades of feminist principles being overlooked in favour of “women in development” programmes and the “NGO-isation of feminist movements,” which have failed to bring about the hoped-for changes (Batliwala, 2012, p. 17–18). The Asia Pacific Forum on Women, Law and Development, for example, emphasised that local women’s movements grounded in local struggles and experience are central to transforming current approaches to development. Pressure and action by local women’s movements have the capacity to bring about improvements on substantive issues of concern to women within their own communities (Rajbhandari, 2014; Grant et al., 2019b; Niner and Loney, 2019).

Empowerment theorists also see that engaging local women’s organisations and movements is a key form of power and an important domain of change. VeneKlasen and Miller (2002),

<sup>1</sup> Autonomy is explained by Honig and Gulrajani (2018, p. 71) as being greater freedom from external control and influence for both organisations themselves and individual agents.

Elben et al. (2008), and Taylor and Pereznieta (2014) included “power with” in their frameworks as one of four key aspects of empowerment. “Power with” highlights the importance of the process of movement building and partnerships to agitate for rights and change social norms and conditions. As explained by VeneKlasen and Miller in 2002 (p. 55):

“Power with” involves finding common ground among different interests and building collective strength. Based on mutual support, solidarity and collaboration, “power with” multiplies individual talents and knowledge. “Power with” is a key tenet of empowerment, by building voice and increasing power through acting together around mutual interests. Advocacy groups seek allies and build coalitions drawing on the notion of “power with.”

The consideration of “power with” as a central tenet in empowerment theory invites us to look more deeply at the literature on coalitions and partnerships within feminist and women’s movements, and how it might be useful for advancing not only WASH outcomes but also gender equality outcomes through WASH programming. We now present the relevant literature related to partnerships as another foundational body of work that informed the design of our present study.

## 2.5. CSO partnerships and the WASH system

Partnerships, coalitions, and networks are understood to be essential to the collective action required to address global challenges (Roche and Kelly, 2014; Doerfel and Taylor, 2017). Partnerships, such as those between North–South CSOs, can be understood to be: “... a response to complex problems in which partners can build on each other’s comparative advantages through a rational division of labour. Through their complementary roles, partners can achieve goals they could never reach by themselves” (Elbers and Schulp, 2013, p. 50).

Well-managed civil society partnerships can yield a range of benefits, including access to the political process, organisational legitimacy, and tangible and intangible resources (O’Brien and Evans, 2016). However, these benefits can only be realised if the power dynamics between the partners are addressed and considered meaningfully. A study on power dynamics between Northern and Southern women’s movements and organisations found that Global North organisations often lacked contextual and cultural understanding of the focus country and communities and tended to follow their own agendas with little input from local organisations (Guttenbeil-Likiliki, 2020). It found that “elite feminism” tended to favour well-established organisations. Global South organisations faced uncertain financial and other sustainability factors when accountability and transparency were viewed as one way, and dependency and donor-and-beneficiary dynamics were perpetuated (Guttenbeil-Likiliki, 2020, p. 13). Similarly, a study of Northern and Southern NGO partnerships in Ghana, India, and Nicaragua found that Northern NGOs unilaterally set the rules of the partnerships even though informal

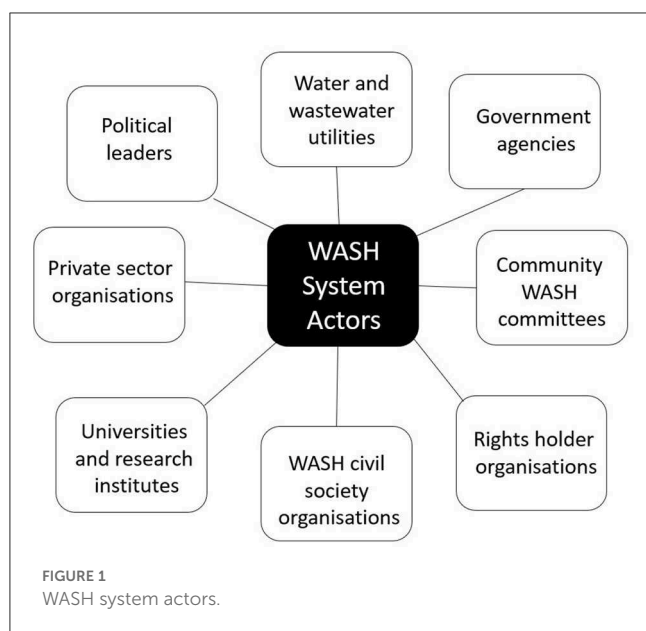
rules allowed for more flexibility (Elbers and Schulp, 2013, p. 48). These studies reveal the pitfalls of many North–South partnerships that reinforce existing power dynamics and the importance of evolving flexible partnerships and a broadening of the types of partnerships to include supporting local networks and coalitions. Until now, research has not been conducted on the bilateral partnerships formed between WASH and gender-focused organisations (North–South or local partnerships), which this study seeks to redress.

The growing complexity of the development landscape calls for “multiple perspectives and collective action” to address wicked problems such as human rights violations and climate change (Roche and Kelly, 2014, p. 60). “Traditional” aid relationships and projects need to shift towards critical localism agendas by engaging local CSOs to encourage policy agendas that focus on empowerment and voice, support domestic policy processes that reduce inequality, and build broader support for inclusive policy interventions (Roche and Kelly, 2014, p. 61). Networks and coalitions are considered a potentially effective means to support a localisation agenda: “NGOs will need to move beyond unique partnerships as bilateral relationships with a single “partner” or counterpart, but rather become simultaneously engaged with multiple actors through networks, coalitions and alliances” (Roche and Kelly, 2014, p. 61). Smith et al. (2016) also recognise that NGOs have catalysed progress in global health governance due in part to their relative independence, links to populations most affected, and a range of functions that they undertake, including building diverse coalitions and advocacy roles.

A number of studies have explored the emergence and success, or otherwise, of civil society coalitions related to driving social justice issues (Mizrahi and Rosenthal, 2001). Coalitions are more likely to change gender norms when formed in response to local events and critical junctures; are locally driven and owned; share a common purpose and values; and have adaptive and regularly renegotiated distributed leadership (Fletcher et al., 2016; Spark and Lee, 2018). In her review of how leaders collectively influence institutions, Nazneen (2019) found that the way in which coalitions can bring about positive change is influenced by their sources of material wealth, their collective strength, and their ideational collective power (i.e., ability to shape ideas and build legitimacy).

### 2.5.1. Rights-holder organisations: Part of the WASH system

WASH system strengthening is increasingly a focus for international civil society organisations and local WASH actors, as opposed to working purely at a project and infrastructure level in many contexts. Valcourt et al. (2020, p. 2) define a WASH system as “a collection of all the factors and their interactions which influence WASH service delivery within a given contextual, institutional or geopolitical boundary.” A focus on the system, and its interrelated parts, stems from evidence pointing to a high level of WASH project failure when human behaviours and system sustainability, as well as the complex relationships and varied actors that make up the WASH sector, are not adequately considered (Moriarty et al., 2013; Neely, 2019; Grant et al., 2020; Hollander et al., 2020; Valcourt et al., 2020; Huggett et al., 2022, p. 17–28).



Partnering with diverse rights-holder organisations (RHOs) has become part of a broader trend within the rural water sector in low- and middle-income countries in an attempt to move away from infrastructure-focused models towards more integrated service delivery models. Service delivery models are conscious of the combined effect of a range of factors and how a range of governance and behavioural factors affect WASH delivery and success, including gender equality and social inclusion (GEDSI) (Huggett et al., 2022; Water for Women, 2022). WASH system strengthening is understood to involve working with, supporting, and strengthening the institutions and actors that are part of the broader WASH system, as well as the relationships between them (Jenkins et al., 2019; Nhim and Mcloughlin, 2022, p. 1–12). While the WASH system includes water utilities, government agencies, and CSOs, other actors are increasingly recognised as integral to the system, such as RHOs, including women's organisations, organisations for people with disabilities, and sexual and gender minorities organisations (Figure 1). As these actors work together in a range of ways, various support systems, or “building blocks,”<sup>2</sup> are needed to facilitate their optimal functioning and interrelationships (Huston and Moriarty, 2018). Systems approaches are considered ways to not only tackle the complexity of WASH systems and address systemic failures but also to promote inclusion. Kimbugwea et al. (2022, p. 69) argue that adopting a system approach underpinned by human rights principles can advance progress towards inclusive and sustainable WASH for all. A range of tools and approaches has been developed within the WASH sector to guide practitioners and policymakers in how to consider and influence the many interconnected factors that make up the WASH system

(Casey and Crichton-Smith, 2020; Valcourt et al., 2020). However, guidance to support partnerships between RHOs and WASH actors is nascent.

### 3. The Timor-Leste context: WASH and GESI CSOs

#### 3.1. The WASH system in Timor-Leste

WASH services are delivered by a range of actors in Timor-Leste, including government agencies, water utilities, CSOs, and small-scale private sector actors (Willettts and Murta, 2015). Efforts to strengthen the WASH system in Timor-Leste have been undertaken by CSOs (such as the INGO WaterAid) looking to work with, influence, and engage the WASH system as a whole, including several levels of government (from the national to the *suco* or village level), utilities, businesses and local CSOs. Efforts have also been made by a range of WASH actors to improve gender-equality outcomes, shift gender norms, and empower women and girls in the development and delivery of water and sanitation programmes (Grant et al., 2019a; Huggett et al., 2022).

While governments are regarded as “rights duty bearers” globally (Carrard et al., 2020), they often fail to ensure delivery of effective WASH services, especially in challenging contexts such as those with disparate communities, mountainous terrains, and populations who do not have a high degree of disposable income. The local government bodies across 14 municipalities<sup>3</sup> in Timor-Leste are highly diverse and home to different ethnolinguistic groups. These municipalities are further divided into 67 *posto* (administrative posts, formally sub-districts) and 442 localities or *suku* led by local councils headed by a *xefe* (chief). Local governance is a “hybrid” and complex form, embracing both newly introduced democratic processes and customary and ritual *lisan* practises (Cummins, 2010).

Local demand and donor focus on improved WASH services have resulted in CSOs and governments focusing more on inclusive programming, with the aim of achieving health and wellbeing outcomes for all members of the community. CSOs support and amplify women's and diverse perspectives, and their advocacy and engagement with government helps to hold to account those responsible for providing safely managed WASH and sanitation services. For these reasons, international and local CSOs, such as WaterAid in Timor-Leste, along with community and women's organisations, have become a key part of the ecosystem to deliver and work with governments to provide WASH services in Timor-Leste. Increasingly, CSOs see the benefits of collaboration between themselves and other organisations working on social justice issues for the intertwined and mutually beneficial goals of strengthened WASH and GESI (Water for Women, 2022).

<sup>2</sup> Building blocks may include policy and legislation, regulation and accountability, finance, monitoring, planning, infrastructure, water resource management, and learning and adaptation (Huston and Moriarty, 2018).

<sup>3</sup> Including 12 municipalities and the *Special Administrative Region of Oecusse Ambeno* (RAEOA). As of January 2022, there were 14 municipalities.



### 3.2. GESI and civil society movements in Timor-Leste

The 2002 Constitution of Timor-Leste formalised equality between women and men in law. At the time, there was broad general support for gender equality, but in everyday reality, there are significant differences between the status of men, women, and non-binary gender expressions (Niner, 2018b; Niner and Nguyen, 2022). While many East Timorese in contemporary society believe women's and men's roles are balanced, from a political-economy or feminist-analysis perspective, gender relations remain inequitable (Niner, 2018a). Disparities in economic indicators are reflected in women's low substantive political participation in the labour force, the high rates of violence against women, and unequal education outcomes at higher levels for women and girls (Wild et al., 2022).

In documenting three key phases of civil society development in Timor-Leste, Wigglesworth (2013) explained that the political crisis of 2006–08 precipitated an analysis of Western development models and gave rise to activists promoting traditional practises and culture through development models that engaged better with local communities (p. 70). However, the way in which gender issues has been incorporated into these new approaches is still emerging.

Timor-Leste has an active women's movement comprising a coalition of local women's CSOs and key female leaders and parliamentarians, many of whom played significant roles in the independence movement. The kernel of an East Timorese women's movement was created in the early 1970's with the establishment of the Popular Organisation of Timorese Women (OPMT) as part of FRETILIN, the Revolutionary Front for an Independent East Timor, which was opposed to colonial rule. Women are proud of the roles they played in the struggle for self-determination. As their role is yet to be fully recognised, the women's movement continues to advocate for this recognition (Niner and Nguyen, 2022).

After the end of the Indonesian occupation, East Timorese women continued to provide the bulk of care for their families and communities under the most difficult of conditions while also building up a strong movement for women's rights that drew upon the networks and alliances established during the occupation period (Wigglesworth, 2013). The first National Congress of the Women of Timor-Leste, held in June 2000, established *Rede Feto*, the mainstream umbrella organisation for the women's movement, and developed a Platform of Action for East Timorese Women. Held every four years, the Congress has provided a road map for action (Rede Feto, 2007). An admirable list of achievements includes gender mainstreaming policies, a gender quota resulting in 39% of women in the national parliament, a progressive domestic violence law, and the *bolsa da mae* social protection programme for mothers.

However, in Timor-Leste, strict binary gender roles undermine human development and equality goals. There is much anecdotal evidence of violent discrimination against LGBTQI+ people, who do not conform to these expected roles (Niner, 2022). Solidarity extended by *Rede Feto* in publishing a report documenting such abuses was a watershed moment for the LGBTQI+ movement in contesting conservative gender relations and values of the wider society. The movement advocated for the acceptance of and respect for the human rights of LGBTQI+ peoples through successful alliance building with other progressive social forces in

society. In support of Gay Pride celebrations, the Prime Minister and President urged Timorese to create an inclusive nation and accept people with all sexual orientations, gender identities, and expressions (SOGIE); other senior politicians declared similar support (Niner, 2022). This illustrates the importance and role of CSO partnerships and coalitions in support of mutual agendas such as WASH and GESI.

As presented above, literature is available on the importance and role of CSO bilateral partnerships and coalitions in support of localist and contingent ways of working and the dynamics of the women's and LGBTQI+ movements in Timor-Leste. Yet, little has been written on the WASH sector in Timor-Leste academically and nothing, until now, on the burgeoning relationships between the WASH sector and the women's and LGBTQI+ movements.

## 4. Materials and methods

Our research design was primarily qualitative. It included three key data collection components: (i) a data collection workshop with 30 CSO representatives from 16 organisations in Dili to inform the research design and participants as well as collect data on drivers, benefits and challenges of CSO partnerships, (ii) a longitudinal research component using semi-structured interview guides over 2.5 years with two rounds of primarily in-person interviews with WaterAid Timor-Leste and four of their local GESI partners (iii) semi-structured interviews with another 18 civil society organisations. Participating organisations included local WASH organisations ( $n = 2$ ), international WASH organisations ( $n = 3$ ), local GESI organisations ( $n = 17$ ), and international GESI organisations ( $n = 1$ ). International organisations were defined as those that had offices and headquarters in another country, while local organisations were defined as born or based in Timor-Leste. Combining all participant types, 23 organisations were interviewed for the predominantly qualitative study. Our sample size was informed by Hagaman and Wutich (2017, p. 36), who found that ~20–40 interviews were needed to reach data saturation for all metathemes across data sets.

The organisations WaterAid Timor-Leste partnered with and that were involved in the longitudinal component of the study included three local organisations and one INGO:

- A. **Dili-based CSO** focusing on supporting women and girls in engineering (local organisation).
- B. **Community development and WASH CSO** based in Manufahi with eight staff (local organisation).
- C. **International CSO** with a focus on gender equality (international CSO).
- D. **Women's organisation** established since the Indonesian occupation and comprising five staff. Women in the organisation were part of the Independence movement (local organisation).

Participating organisations were purposefully sampled, drawing on the knowledge of the Timorese research team, WASH, and gender equality CSOs. Inclusion criteria included local and international organisations working on (a) GESI issues or (b) WASH issues. We used a single semi-quantitative interview template for the longitudinal study to capture changes in the



partnership dynamics over time. Questions were asked about the purpose, nature, and development of the partnership between the organisations. Drawing from the literature (as outlined above), our questions related to power dynamics, decision-making processes, values, and typologies of partnerships. A major change occurred in 2020 with the start of the COVID-19 pandemic, which led to significant adjustments in programmes, less travel, and changes in some staff members in a number of organisations. However, despite these challenges, we conducted interviews in person in Dili, Liquisa, and Manufahi Timor-Leste, with a small number by phone when meeting in person was not possible. We conducted online joint analytical processes and joint development of recommendations for policy and practise with primary research partners (described below).

Notes during interviews were taken in Tetum and transcribed in summary into English, potentially losing some of the details and nuances of the conversations between researchers and interviewees. The English notes were then used as the basis for the analysis, though Timorese researchers were involved in coding and sensemaking processes to ensure the reliability of interpretations. The quality of the transcriptions of notes taken in Tetum which were transcribed and summarised in English was assured through timely reviews of notes, feedback, and regular phone conversations with Timorese researchers, so that any gaps were picked up early and transcripts could be improved. Given telecommunications issues in Timor-Leste, Whatsapp phone calls were most useful for these regular check ins and discussions about transcripts.

The analysis of the types of partnerships drew on a framework we adapted from Winterford (2017), who drew from Moore and Skinner (2010). It described a spectrum of collaborations from “independent,” where organisations operate separately with minimal interaction, to “collaborative,” where organisations are highly committed in a longer-term and formalised partnership, as described below:

- **Independent:** Organisations operate independently.
- **Cooperative:** Organisations remain independent but network and share information; low commitment; informal arrangements (no memorandum of understanding or contracts in place, for example).
- **Coordinated:** Some joint planning is conducted between organisations; project-based coordination; memorandums of understanding (MOUs) or contracts may be in place.
- **Collaborative:** Organisations share culture, visions, values, and resources; joint planning is undertaken; a high level of commitment by both parties is demonstrated; the partnership is formalised through agreements, contracts and the like.

Analysis was also informed by an inductive and deductive thematic coding undertaken in Dedoose and coding was conducted primarily by the Timorese research team members with quality assurance and contributions from the lead research team members to ensure reliability and trustworthiness. A codebook was developed by four data analysts, and was inductive and deductive, based on the research questions. Researchers also conducted thematic analysis (by hand) with the translated transcripts, in order to validate findings emerging from the Dedoose coding process. While COVID-19 travel restrictions limited the Australian research

lead’s ability to engage in person with the Timorese research team, we managed this through a series of online workshops and co-analysis processes with 10 members of the broader research team in Timor-Leste.

Deductive coding and thematic analysis was conducted with the transcripts to and informed by the research questions:

- (RQ 1) What are the drivers, benefits, and challenges of engagement between WASH sector CSOs and gender equality and women’s rights organisations?
- (RQ 2) How can CSOs partner more effectively to maximise WASH, gender equality and inclusion outcomes in the context of a localisation agenda?

We provided all interviewees with information sheets outlining the purpose of the research and how the information they shared would be used and ensuring confidentiality. Interviewees were provided with this information sheet in hard copy and it was emailed to them prior to the interview. A consent form was read out by the interviewer at the start of the interview and participants were given the option to stop at any point without providing a reason, as well as withdrawing from the research process at any time. Consent was provided by way of interviewees signing the consent form provided. Ethics approval for this research was obtained (approval number UTS HREC REF NO. 2015000270).

## 5. Results

The following results stem from interviews with women’s and WASH organisations that were both local and international and from all the interviews conducted across the study ( $n = 23$ ). Interviewees provided insights into the types of collaborations underway between WASH and GESI organisations and the drivers, benefits, and challenges of collaboration between organisations of different sizes and types pursuing interrelated but different objectives.

### 5.1. Types of collaborations between WASH and GESI organisations

Collaborations took various forms, including programme implementation, contractual relationships, knowledge and information sharing, and informal networking. Partnerships between WASH and GESI CSOs were found to be driven by organisations wishing to strengthen the WASH system overall in Timor-Leste and achieve tangible gender equality outcomes, especially for women and girls. Of those interviewed for the project ( $n = 23$ ), 14 were in some type of WASH–GESI partnership or engagement, and 9 others expressed an interest in collaborating in the future, though to varying degrees; 8 organisations reported having a formal partnership agreement in place (MOUs, funding arrangements, or contracts).

Two organisations described national-level forums in which WASH and GESI organisations shared information and discussed ideas together, such as the Forum Be’e Mos (Clean Water Forum), led by the National Directorate of Water and Sanitation Services



FIGURE 2

CSO interviewees involved in WASH and GESI partnerships identifying where their partnerships sit against a spectrum, adapted from Winterford (2017) and based on the work of Moore and Skinner (2010).

(DNSAS), and the WASH and gender discussion forum led by the women's CSO, Fokupers.

Most organisations (5 out of 9) who were already partnering or connecting across WASH and GESI organisations described their current partnership as “cooperative,” and the others (4 out of 9) described it as “coordinated,” according to the spectrum used in this research (Figure 2). Most of the organisations interviewed for the longitudinal component of the study (3 out of 5) described their partnership as collaborative or between coordinated and collaborative, as shown in Figure 2.

The research did not point to any model being more successful than the others. However, interviewees did express an interest in moving towards more “collaborative” types of partnerships characterised by a shared organisational culture, visions, values, and resources; joint planning and delivery of some services; and a high level of commitment from partners.

## 5.2. Drivers for partnerships

Partnerships between WASH and GESI organisations were shown to have been driven by a range of factors, including mutual agendas, observed community WASH needs, and commitments to inclusive practises. The most notable driver was “complementary agendas” due to the understood intersection between WASH and GESI objectives. Six GESI organisations that worked closely with communities were motivated to cooperate with WASH organisations as a result of the urgent and unfulfilled WASH-related needs that they saw and heard about in communities, particularly for women and girls. Responding to gaps in services was a key driver for collaboration, with organisations reporting they had undertaken partnerships to address gaps in government services, including combining resources and funds to meet community needs in remote villages.

The perceived mutual benefits reported by WASH and GESI interviewees were: increased economic empowerment through WASH both directly for women's business opportunities (e.g., water to produce coconut oil and vegetables) and indirectly by improving people's health and hence their productivity; less violence towards women and LGBTIQ+ people, who face bullying while trying to meet their daily WASH needs; improved family

harmony by reducing tension around WASH-related work and roles, including decreasing gender-based violence through a better understanding of gender equality concepts at the community level and safer WASH access.

Mutual advocacy agendas were also expressed as key drivers for collaborations between organisations and across the sectors. For example, interviewees reported that they wished to utilise connected advocacy agendas to share WASH information at the community level (through and by local leaders) and to lobby the government at the national level to improve WASH services. Interviewees also saw that partnerships helped to improve the sustainability of WASH project outcomes through empowering women, shifting harmful gender norms, and improving the responsiveness of WASH services to people's real needs.

## 5.3. Benefits of partnerships

Regarding the drivers for collaboration, interviewees identified at least 14 distinct benefits of WASH and GESI partnerships, relating to three main areas: (1) increasing participation and inclusion of women in WASH programmes and related decisions, (2) mutual learning and capacity building, advocacy opportunities and connexions with government, and (3) shifts in gender norms (changing perceptions of roles and responsibilities related to WASH) (Table 1). Organisations within existing WASH and GESI partnerships reported positive power dynamics between CSOs, positive working relationships (including good communication styles and organisational policies), and the supportive nature of networks and bilateral partnerships in Timor-Leste.

One national GESI organisation described the tangible benefits its members gained from the collaboration with a WASH organisation thus: “Some of our members in seven districts have already accessed clean water. For example, in one community, the water arrived at their house. That is the result of working together between [WASH organisation and GESI organisation].” Two GESI organisations described their positive working relationships with a larger WASH CSO: “We have a good working relationship because if there are some issues or a problem occurs, we try to resolve it [together].” The interviewee explained that this relationship began on a relatively equal footing: “they [the WASH CSO] did not

**TABLE 1** Benefits reported by CSO interviewees ( $n = 23$ ) of partnerships between WASH and GESI organisations.

Increased participation and inclusion	
Increased participation of marginalised groups	An increase in participation of women and people with disabilities in the decision-making and delivery of WASH services.
Increased access	Securing WASH rights for people with disabilities by elevating their needs to relevant parties (e.g., Government and WASH organisations).
Increased knowledge and services	Increased information about and access to WASH services for women and people with disabilities.
Mutual learning and capacity building	
Increased equality within partner organisations	An increased value of equality within the partner organisations and programme communities.
Mutual learning	Positive outcomes for mutual learning and developing capacity (for both WASH and GESI organisations about each other's areas of expertise), including new methods and approaches to apply locally.
Government collaboration	Opportunities for collaboration on advocacy activities, particularly to influence national actors and government agencies who oversee and influence WASH systems.
Partnership scope increased	Increased scope of areas of work for the partnership organisations—for example, new WASH skills or deeper gender equality knowledge to apply in WASH programming.
Capacity development	Capacity development for women's organisations enabling them to represent and discuss WASH issues with other WASH system actors (e.g., government actors and agencies).
Strengthened response to Gender Based Violence (GBV)	Strengthened WASH sub-national and local system responses to GBV through a referral network.
Shifts in gender norms, perceptions and responses	
Norms change around WASH roles	Partnership activities led to a positive change in the community's perspective of WASH tasks and work, which it now sees as both women's and men's work.
Enhanced capacity to achieve strategic plan	Making important contributions to achieving each organisation's strategic plan.
Increased data collection capabilities	Partnerships support organisations to obtain data on the effectiveness of activities focused on gender equality and changing gender norms around WASH services.
Increased networks	Increased professional networks and new organisational connexions were developed leading to more effective programmes and improved sustainability of services.
Contribution to a stronger and more resilient WASH system	A contribution to promoting equality and democratic decision-making processes in partnerships in Timor-Leste.

come and dictate what they wanted. Instead, they came here to present to us about their project related to disabled people and that they wanted to work with us ... we made a plan together with them and they support us with money, and we implemented our plan.”

A benefit of one partnership was the increased connexion between WASH partners and government actors at several levels. These CSO-government relations were facilitated by capacity-building initiatives for women's organisations so that they could confidently represent WASH issues themselves, thereby increasing their capacity to talk with government agencies and representatives. As one interviewee reported: “their activities have influence at the national level. They did different types of advocacies about decision-making with consideration of women's suffering regarding sanitation and hygiene.” In this case, the disproportionate challenges women face to use toilets instead of openly defecating, including increased risk of rape and violence, as well as to manage menstruation, were explained to political leaders and decision-makers. Advocacy benefits from the collaboration in one case resulted in GESI partners providing their suggestions on the state budget related to sanitation and hygiene, as noted by one interviewee: “Women's groups speak out about WASH problems in the communities. I think the big change is that this community aspiration reached the Parliament. They also had a meeting with the women's parliament group [GMPTL].”

## 5.4. Challenges of partnerships

Establishing and maintaining partnerships between distinct organisations (and between individuals) requires continuous attention and improvement, facilitated through good communication and trust. This study looked closely at bilateral partnerships rather than coalitions; consequently, the lessons learned focus on partnerships between WASH and GESI organisations, though they could be considered beyond these particular types of relationships. Interviewees reported 14 distinct challenges (Table 2), broadly related to three main factors: (1) organisational barriers that prevented realisation of outcomes; (2) weak links in the WASH system; (3) power dynamics and relationships. These are elaborated below.

Organisational barriers included a misalignment of organisational strategy, priorities, and geographical focus; limited human resources practises, organisational capacity, and facilities, particularly within smaller CSOs; and changes in staff, which broke continuity and caused delays in the partnership and project activities.

Weak links in the WASH system were reported to be related to misperceptions of who was responsible for WASH and therefore a reticence to get involved if it was perceived to be outside the domain of the CSO; transactional relationships and insecure funding leading to short-term projects rather than longer-term movement building; some functional barriers around providing funds into partner bank accounts; and power imbalances related to organisational capacity and size, leaving some smaller CSOs feeling vulnerable.

There were reports of a lack of openness to collaborate due to hidden agendas and personal or political interests. Others identified the challenge of partnering or collaborating outside what is perceived to be an organisation's specific area of focus. Interviewees mentioned a tendency to collaborate with others in the same sector and where there were shared values and visions

**TABLE 2** Challenges reported by CSO interviewees (*n* = 23) of partnerships between WASH and GESI organisations.

Organisational barriers	
Misaligned strategy	Misalignment of organisational strategy, priorities, and geographical focus.
Human resources limitations	Limited human resources (in one or both organisations), different organisational capacity, financial base and facilities.
Staff changes	Changes in staff break continuity and cause delays in the partnership and project activities.
Confidence and technical knowledge	Lack of confidence about “WASH literacy,” including a fear of the technical aspects of WASH (grounded in engineering and plumbing thinking and practice).
Practicalities of sharing resources	Practical challenges related to making payments to staff and getting funds into organisations’ bank accounts.
Weak links in the WASH system	
Misperceptions	Misperceptions of who is responsible for WASH in a given area—for example government, community, or CSO.
Transactional approaches	Transactional relationships, “projectisation,” and insecure funding can lead to one-off projects rather than development of a broader and longer-term movement.
Power dynamics and relationship aspects	
Short-term funding models	Unequal power dynamics related to the donor/recipient dynamic, how the financial arrangements are structured, and funding insecurity, leaving some smaller CSOs vulnerable.
Staying in one’s lane	The challenge of partnering or collaborating outside of an organisation’s specific area of focus was particularly noted by GESI organisations. They suggested there is a tendency to collaborate with others in the same sector where there are existing shared topics, values, and visions.
Time	The challenge of finding time to collaborate, particularly with a new partner and a new sector.
Concerns about sustainability	Financial viability of WASH services and the role of government in ongoing delivery of services.
Communication issues	Irregular meetings and infrequent communication. Different opinions about whose role it is to initiate contact and communications.
COVID-19 challenges	Reduced budgets and communication challenges due to COVID-19 pandemic and restricted travel.
Hidden agendas	A lack of openness to collaboration due to hidden agendas and personal or political interests.

and difficulty finding the time to collaborate, particularly with a new partner or sector. Communication challenges also arose due to irregular meetings and infrequent contact, and sometimes there was confusion about who needed to initiate the communication.

Funding dynamics, financial sustainability, and operational issues (related to accessing bank accounts) were identified as challenges in some WASH–GESI partnerships. For example, One GESI CSO reported that it faced considerable funding insecurity: “We don’t have a permanent donor.” A WASH organisation felt that CSOs needed support to become more financially sustainable:

“... if all are based on projects, they cannot sustain themselves. We need to think about this so that CSOs can be self-sustaining and developed.” Another funding-related challenge was noted in terms of how proficient organisations are at writing proposals. One GESI organisation explained that funding often goes to those who can prepare the required proposals rather than those who are best placed to do the work. This disadvantaged smaller, local-level organisations in Timor-Leste: “There are a lot of requirements from the funding agency, and people do not have good skills to prepare the proposal.”

Recommendations for supporting more effective collaboration included:

- Strengthening joint planning processes.
- WASH and GESI training.
- Ensuring both partners understood and could use data available on access to and quality of WASH.
- Ensuring both partners understood gender-norms issues.

Other suggestions included targeting funding at the existing priorities of gender equality CSOs and for organisations to focus on their internal capacity. Regular, open communication between partners was emphasised as vital, including partnership check-in processes, addressing staff changes (which may involve rebuilding relationships), and emphasising the importance of individuals for partnership continuity and growth.

## 6. Discussion

We now reflect on the research findings with reference to the theoretical perspectives presented above, including a focus on women’s empowerment through collective action, localism, post-development thinking, and contingency theory. We make two key points in relation to the results and the literature presented. Firstly, bilateral partnerships between international and local organisations yield mutual benefits and strengthen local-level civil society. Such partnerships support contingent ways of working in terms of building trust and autonomy at the local level. We also found evidence that partnerships between rights-holder and WASH organisations strengthened the WASH system, thereby contributing to a transition to post-development WASH services (beyond WASH projects/programmes run by INGOs). Secondly, uneven power dynamics exist in some cases and must be navigated carefully for working contingently and realising localism agendas. Each of these two key findings is discussed in turn below.

### 6.1. Mutual benefits of working contingently to strengthen the WASH system

The benefits of development partnerships are well-documented and have become common and expected modalities for aid donors and practitioners (Roche and Kelly, 2014). CSO partnerships literature is validated by the present study on WASH and GESI partnerships in Timor-Leste, especially in terms of O’Brien’s



observations that genuine and mutually beneficial partnerships can yield a range of benefits, including identity reinforcement, access to the political process, organisational legitimacy, and access to tangible and intangible resources (O'Brien and Evans, 2016). The three main themes of benefits (Table 1) that WASH and GESI organisations identified in their partnerships related to (i) increasing participation and inclusion, mutual learning, and capacity building, (ii) advocacy opportunities and connexions with government, and (iii) shift in gender norms, perceptions, and responses. The collective action, partnership arrangements, and focus on system strengthening driven by WaterAid and their direct partners can also be seen as an example of “power with” (VeneKlasen and Miller, 2002, p. 55) in that they found common ground among different interests and built collective strength. The benefits reported by CSOs in partnerships (particularly the longitudinal component) were found to be related to strengthening collective action, local-level pluralist governance, networks, and partnerships with heightened advocacy power and influence.

Larger international CSOs, such as WaterAid, tend to support Honig and Gulrajani's (2018) call for more contingent ways of working grounded in a deeper understanding of the local context, greater trust and autonomy of local actors, and adaptive ways of working. Yet, working contingently can only happen if the local partners are empowered (and supported in ways that are meaningful to them) and power dynamics are addressed at the start of and during the partnership. In our study, organisations reported that their partnership was founded on positive and flexible working relationships, communication styles, and organisational policies. This seems to indicate some of the characteristics that Honig and Gulrajani (2018) discuss in terms of increased autonomy and trust at the field level as essential components of contingent ways of working.

The partnerships in Timor-Leste at the centre of this study provide another example of working and changing aspects of the WASH system and supports Huggett et al. (2022, p. 38) finding that “integrating GEDSI within system-strengthening programming provides useful opportunities and leverage points for addressing systemic barriers to inclusion and empowerment.” Our study also supports the finding of Kimbugwea et al. (2022) that system approaches (when underpinned by human rights principles) can advance inclusion outcomes in WASH programmes. The authors' SWOT analysis (strengths, weaknesses, opportunities, and threats) regarding how a WASH programme in Cambodia and Uganda engaged with WASH system building blocks (2022, p. 75) found weaknesses in consultation and participation with women and marginalised groups, as well as limited understanding and space to discuss human rights to water and sanitation. Partnerships with RHOs are one way to help address these weaknesses and thereby increase the confidence and involvement of women and CSOs representing marginalised groups. Similarly, the benefits reported by the CSOs interviewed for our study included: increased participation of women and people with disabilities in the decision-making and delivery of WASH services; secured WASH rights for people with disabilities by elevating their needs to relevant parties (government and WASH organisations); increased information about and access to WASH services for women and people with disabilities (Table 1).

As pointed out by O'Brien and Evans (2016) and Guttenbeil-Likiliki (2020), the power dynamics between partners must be

addressed and considered meaningfully before the benefits of partnerships can be realised. Our study supported this finding, concluding that power dynamics must be openly understood, discussed, and navigated in WASH and GESI partnerships. In addition to power dynamics being challenging for local and international CSOs to manage between themselves, organisational barriers (related to communications, staff continuity, and administrative coordination) and weak links in the WASH system (contested views of who is responsible for WASH and therefore reticence to get involved) were also identified as considerable challenges to well-functioning partnerships. As found in previous studies on North-South CSO partnerships, we observed challenging dynamics related to smaller local organisations' dependency on larger international ones. These dynamics indicate that the nature of development funding and associated power relations makes attempts to promote more locally led development difficult in practise. Yet, through the partnership models employed amongst organisations in this study, local-level organisations' capacity and independence were enhanced, indicating that, in future, these partnerships may contribute to notions of plurality and solidarity. This trajectory is supported by McGregor's study, which concluded that “Although some parts of the development architecture reviewed are flawed from a post-development perspective, particularly programmes that are broad in scale or have pre-determined project outputs and timelines, other initiatives, such as community or institutional partnerships and small grants programmes, have much to contribute to post-development futures. They are potentially flexible, community-focused, supportive of alternative sociopolitical spaces” (2007, p. 168).

## 6.2. Navigating uneven power dynamics

Our study offers insights into the extent to which a post-development and localist agenda is being pursued through CSO partnerships in the WASH and GESI sectors. We drew on the work of scholars who identified the shortcomings of top-down and Northern-driven development agendas (Crewe and Harrison, 1998; Guttenbeil-Likiliki, 2020; Roche et al., 2020) but also those who call for a nuanced perspective when it comes to championing the “local” (Mac Ginty, 2015). While emphasising the centrality of Southern movements and organisations (Schoneberg, 2017, p. 605), Schoneberg's description of post-development theory questions dominant discourses related to the power and knowledge nexus. The design of our study supported Escobar's call for the development agenda to create intellectual space for local agencies to assert themselves (also a central tenet of contingency theory), and for the recognition of the importance of grassroots movements (Escobar, 1992). Nonetheless, we found that the relationship between most WASH and GEDSI CSOs largely reinforced dominant partnership models (i.e., larger donor organisations partnering with smaller local organisations). These models were characterised by larger CSOs (primarily consisting of Timorese staff and backed internationally) engaged with smaller more grassroots organisations that, in turn, depended on the larger CSOs for funding and support. The concerns raised by some smaller local CSOs about their own sustainability and that

of their partnership (as a result of shorter-term project-oriented engagement) point to the dependence of these partnerships on funding from one of the partners. The question that begs an answer is the degree to which a genuinely locally led agenda is being pursued, given McCulloch and Piron's (2019) claim that localism requires a commitment to reform regardless of the existence of external support.

The challenges experienced within the CSO partnerships in this study point to the challenges of working contingently. Power dynamics are often hard to shift, especially when there are financial and North–South organisational power and financial differences. To this end, several organisations reported having some unequal power dynamics related to funding insecurity, which left some smaller CSOs vulnerable. These challenges in terms of partner organisations' size and capacity were also reflected in the Siscawati et al. (2022) study that looked at partnerships between similar actors in Indonesia. The Indonesian study revealed similar issues related to organisations having different sizes and structures, which may or may not align with those of their partners, as well as mismatched or limited financial resources and sustainability (Siscawati et al., 2022, p. 14). The challenges related to power dynamics shared by CSOs in our study had similarities with those found by Guttenbeil-Likiliki (2020) in terms of some elements of the dependency mentioned above (donor–beneficiary dynamics) and uncertain financial and other sustainability factors. However, our study did not find that the WASH and gender organisations connected to Global North organisations lacked contextual and cultural understanding of the focus country and communities, largely because the staff carrying out programmes in Timor-Leste for these organisations were predominantly Timorese. Our study also did not find that the partnerships pursued by WASH organisations favoured those from elite feminist organisations. Rather, the partnerships WaterAid developed with GESI organisations were largely nascent or grassroots organisations, which were the focus of this study.

Despite the challenges in partnerships and the power dynamics that sometimes underpin them, our study found that having strong and diverse partnerships with not only WASH organisations but also RHOs, such as women's organisations, organisations for people with disabilities, and sexual and gender minorities organisations, supports working contingently and contributes to a localist agenda. This is done by and through local-level organisations bringing their understanding of the local contexts in which they operate, helping to adapt or tailor development initiatives to their contexts, building social movements in support of gender equality ("power with"), and strengthening the multifaceted WASH system overall.

## 7. Conclusion

Forming genuine and mutually advantageous partnerships with local civil society organisations within the WASH sector and beyond is a key aspect of strengthening the WASH system and furthers critical localism, decolonising, and post-development agendas. The findings of this study support and validate the approach taken by international organisations such as WaterAid to build strategic partnerships and collaborations with diverse local rights-holder organisations, including those championing gender

equality and inclusion. The interest shown by participants in this study to foster partnerships that are "collaborative" in nature requires a high level of commitment from partners and is in line with key tenets of localism and working contingently. Collaborative partnerships, in this sense, are conscious of where power is situated, whose agendas are being pursued, where trust is being fostered, and locally informed ways of working and communicating together.

Rights-holder organisations are important parts of the overall WASH System—a system made up of a range of organisations and actors, complex relationships, and the people who depend on and use water and sanitation services. The roles of rights-holder organisations assessed in this study with WASH organisations could be considered beyond bilateral CSO partnerships, and with other WASH providers (such as utilities and private sector actors) to advance GEDSI and pro-poor outcomes and strengthen the interrelated WASH system. There is also a need to look beyond bilateral partnerships and towards coalitional relationships and their potential to advance mutually beneficial outcomes with consideration of the transactional costs. Further, diversity of partnerships with other parts of civil society (e.g., youth, climate, ethnic minorities), as well as other types of actors (government and private sector), could support deeper and more transformational approaches to WASH programming.

Given the practical and advocacy benefits identified by interviewees in this study resulting from WASH and GESI partnerships, it is recommended that further research delves into what particularly enabled them to advocate for improved WASH services with government agencies, and which strategies were most successful. A case study approach *via* longitudinal monitoring and evaluation processes, process tracing or contribution analysis could be particularly useful for examining these reported benefits and impact pathways.

This research revealed a range of nuanced drivers, benefits, and challenges within the partnerships studied and found mutual benefits concerning advocacy efforts and aligned agendas for WASH and GESI capacity development. It also revealed that WASH–gender equality CSO partnerships in Timor-Leste are providing opportunities to hear more directly from community members and reach the most marginalised.

## 8. Limitations

COVID-19 hindered the research process by limiting our movement and access to interviewees. Some interviews and co-analysis workshops had to be conducted online, which was not ideal given the internet and phone challenges in Timor-Leste.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

The studies involving human participants were reviewed and approved by Institute for Sustainable Futures, University

of Technology Sydney. The patients/participants provided their written informed consent to participate in this study. Ethics approval for this research was obtained (approval number UTS HREC REF NO. 2015000270).

## Author contributions

TN and AV co-developed the scope of the research project, conducted and transcribed interviews in Timor-Leste, led coding analysis in Dedoose, participated in co-analysis processes with the research team, contributed to, and reviewed the article. MG responsible for the conceptual and theoretical framing of the research, led research design and tools development, designed and co-conducted inception and in-country data collection processes and pilots, and led team authorship of the article. SN led gender and LGBTIQ+ movements history framing and content, wrote sections of the article, conducted reviews, and contributed to conceptual framing of the paper. CR contributed to conceptual framing of the paper and conducted reviews. All authors contributed to the article and approved the submitted version.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# An exploration of sanitation-related decision-making, leadership, collective action, and freedom of movement among women in urban Tiruchirappalli, India

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**Introduction:** Sanitation research in 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.

**Methods:** Cognitive interviews related to sanitation and empowerment were conducted with women in three life stages in India to validate survey tools that measure urban sanitation and women's empowerment; this paper is a secondary thematic analysis of qualitative data generated from 11 cognitive interviews in Tiruchirappalli, India, that focus on agency, specifically the sub-domains of decision-making, leadership, collective action, and freedom of movement. Women had the freedom to move to and from sanitation facilities and initiatives, with no restrictions from household members.

**Results:** We observed differences at the household and community levels with women voicing more confidence, as well as the responsibility, to make sanitation-related decisions in the household than at the community level. Women mentioned strong trust and belief in women's sanitation-related leadership capabilities and support for women-led sanitation initiatives. However, many did not hold leadership positions themselves due to various limitations, from gendered responsibilities to women's lack of self-confidence. Women also discussed anecdotes of collectively working with other women toward improving the local sanitation environment.

**Discussion:** This analysis highlights the value of strong trust and confidence among women in their ability to make important sanitation-related decisions at all levels of society. Maintaining and strengthening trust in female community members and highlighting women-led groups' achievements in the sanitation space should be prioritized. Community spaces must incorporate provisions that encourage women to share sanitation-related opinions in an environment that respects their engagement. WASH programming must engage with authority figures, leaders, and officials when seeking to increase women's agency and involvement with sanitation-related issues.

## KEYWORDS

sanitation and hygiene (WASH), gender, agency, India, Tiruchirappalli, agency-structure

# 1. Introduction

In 2015, the United Nations General Assembly established Sustainable Development Goal (SDG) 6 to “ensure availability and sustainable management of water and sanitation for all” by 2030 (UN, 2015). Access to safe sanitation and clean water is integral for human health and wellbeing (WHO, 2022) yet an estimated 3.6 billion people lack access to safely managed sanitation services, including 494 million who practice open defecation (WHO and UNICEF, 2021). Within SDG 6, Target 6.2 emphasizes the need to pay “special attention” to the sanitation and hygiene needs of women, girls, and vulnerable populations (UN, 2015). Studies have highlighted how the division of water- or sanitation-related tasks and the challenges in accessing safely managed sanitation facilities disproportionately impact women and girls (Sorenson et al., 2011; Graham et al., 2016; Fisher et al., 2017). Specifically, social norms, power hierarchies, and inadequate water, sanitation, and hygiene (WASH) infrastructure result in gender inequities in workloads and access to WASH services (Caruso et al., 2017, 2022a,b; Routray et al., 2017; Ashraf et al., 2022; Carrard et al., 2022).

In India, despite expanding coverage of sanitation facilities throughout the country, sanitation challenges persist for women in particular, related to their sanitation access and sanitation-related experiences, responsibilities, and decision-making (IIPS and ICF, 2021). Specifically, research in both rural and urban areas has found there to be a lack of safe, private, physically, and financially accessible toilets that adequately meet the needs of women and girls (Hirve et al., 2015; Hulland et al., 2015; Sahoo et al., 2015; Khanna and Das, 2016; Caruso et al., 2017, 2018; Saleem et al., 2019; Ashraf et al., 2022). Women’s sanitation experiences in India have been found to be linked to psychosocial impacts, including anxiety, depression, and distress, even among those with access to a household sanitation facility (Hirve et al., 2015; Sahoo et al., 2015; Caruso et al., 2018). Further, a study in Rajasthan, India found that responsibilities and tasks surrounding the maintenance of household sanitation predominantly fall on women (O’Reilly, 2010). Finally, in Odisha, India women were not actively engaged—and in some cases bypassed—in decision-making for household sanitation infrastructure design initiatives (Routray et al., 2017).

Prevailing gendered sanitation experiences and outcomes underscore the need for exploring how sanitation conditions and policies can influence women’s empowerment, particularly their agency. This study adopts the conceptualization of agency from the women’s empowerment framework by van Eerdewijk et al. (2017), which defines agency as “the ability to pursue goals, express voice, and influence and make decisions free from violence and retribution” (van Eerdewijk et al., 2017). It aligns with Kabeer’s (1999) presentation of agency as “the ability to define one’s goals and act upon them”. Existing literature on agency as a domain of women’s empowerment presents it as the ability to define individual and collective goals while being able to freely act on them. This translates to agency being more than an observable action, but also as grounded in maintaining internalized motivation, meaning, and purpose toward this action (Kabeer, 1999, p. 438; Gammage et al., 2016). The present study further explores agency with a focus on the sub-domains presented in van Eerdewijk et al.’s (2017) framework: decision-making, leadership, and collective

action. A recent systematic review exploring water, sanitation, and empowerment identified “freedom of movement” as an additional subdomain of agency relevant to water and sanitation, which is also included in this study (Caruso et al., 2022a). The adapted figure from the systematic review illustrates the relationship between these domains and subdomains (Figure 1) (Caruso et al., 2022a). Of the three empowerment domains explored in the review, including agency, resources, and institutional structures, the agency domain was the least explored; only one paper covered all four subdomains of agency (Caruso et al., 2022a). As a result, the review identified a need for more comprehensive research on agency and sanitation (Caruso et al., 2022a).

This qualitative study aimed to understand women’s agency related to sanitation in urban Tiruchirappalli, India. The paper is structured to cover the study methodology, followed by results in the order of agency sub-domains, and finally a discussion on key themes, findings, and implications. Organizations and policymakers working on sanitation can utilize findings to inform sanitation-related interventions that empower women and girls, with specific relevance to urban India and potentially other urban contexts.

## 2. Methods

### 2.1. Study design

This study is a secondary analysis of textual data collected as part of cognitive interviews (CI) carried out in August 2019 as part of the Measuring Urban Sanitation and Empowerment (MUSE) project. The goal of MUSE is to develop and validate scales to measure sanitation-related women’s empowerment in urban areas (Sinharoy et al., 2022). The primary goal of the CIs was to confirm the face validity of survey items and ensure they were culturally relevant and understood as intended (Beatty and Willis, 2007). CIs serve to strengthen the survey tools before large-scale deployment (Beatty and Willis, 2007). The resulting tool, called ARISE (Agency, Resources, and Institutional Structures for Sanitation-related Empowerment), measures subdomains of women’s empowerment based on the model developed by van Eerdewijk et al. (2017), Sinharoy et al. (2022, 2023). As the CI data included rich responses and went beyond cognitive debriefing, there was scope for further analysis. This secondary analysis leverages the rich data collected during the agency-specific cognitive interviews, with an exploration of the subdomains i.e., leadership, decision-making, collective action, and, the newly identified subdomain, freedom of movement (Table 1) (van Eerdewijk et al., 2017; Caruso et al., 2022a). Sinharoy et al.’s sanitation-specific definitions of the agency sub-domains (Table 1), alongside Figure 1, informed this analysis (Caruso et al., 2022a; Sinharoy et al., 2022).

### 2.2. Study area

In Tiruchirappalli, which is in the state of Tamil Nadu in South India, 78.1% of households have access to a toilet facility (IIPS and ICF, 2021). A greater proportion of urban households

## WOMEN'S AND GIRLS' WATER- AND SANITATION-RELATED EMPOWERMENT

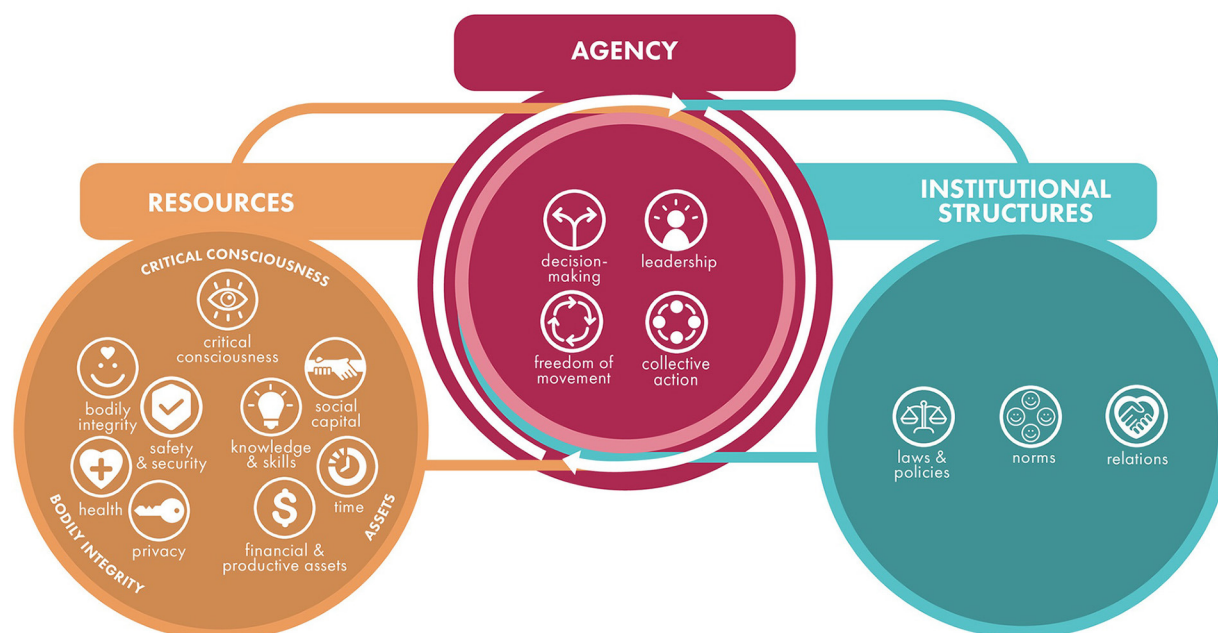


FIGURE 1

Relationship between the domains and sub-domains of women's and girls' water and sanitation-related empowerment (Caruso et al., 2022a).

TABLE 1 Sanitation-specific definitions of the subdomains of agency (Sinhharoy et al., 2022).

Sub-domain	Definition
Decision-making	Women influence and make decisions about sanitation inside and outside the home.
Leadership	Women assume leadership positions, effectively participate and support women's leadership in informal and formal sanitation initiatives and organizations.
Collective action	Women gain solidarity and take action collectively on sanitation-related issues.
Freedom of movement	Women have the autonomy to move freely to access sanitation facilities, collect water for sanitation-related needs and/or attend forums on sanitation issues, and women have freedom of movement despite sanitation circumstances.

in Tiruchirappalli (89.2%) have access to a toilet facility, compared to rural households (67.8%) (IIPS and ICF, 2021). 67.1% of the households in the district have improved sanitation facilities (IIPS and ICF, 2021). As of 2021, 3,483 Individual Household Latrines and 13 community toilets were built in Tiruchirappalli through the Swachh Bharat Mission (SBM), which aimed to eliminate open defecation in India and improve solid waste management (SBM, 2021). The specific neighborhood in this study was selected in partnership with the local organization IIHS (Indian Institute of Human Settlements), mainly due to its economic diversity.

### 2.3. Study eligibility

Women aged 18 and above who spoke either Tamil or English and lived in Tiruchirappalli, Tamil Nadu, India were eligible to participate. CIs targeted specific sub-populations of women from

three life course stages (unmarried women 18–25, married women aged 25–40 years, and women aged 40 and above) as studies in India have found that women of varying life stages have different sanitation experiences, levels of agency, and decision-making power within their families (Caruso et al., 2017; Routray et al., 2017).

### 2.4. Recruitment strategy

Participants were recruited through convenience and snowball sampling. Trained interviewers knocked on doors in one selected neighborhood to identify eligible women across different life stages. When it was difficult to recruit enough women from a certain life stage, interviewers utilized the snowball sampling approach whereby they asked participating 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, interviewers stopped recruitment. A total of 11 participants from all three life stages and occupations were recruited.

### 2.5. Data collection

All interviewers were female, college-educated, and fluent in Tamil. Each data collection team had two members: one interviewer and one notetaker. All data collection team members underwent a 5-day training and an ethical orientation workshop. During training sessions, interviewers provided feedback to the research team about the tool to ensure that questions were both culturally



sensitive and relevant to the local sanitation context. The CI guide was translated into Tamil from English.

With each eligible participant, a trained interviewer administered a short screening and demographic survey in the preferred language and then proceeded to ask the CI questions. As interviews for the larger MUSE project were domain-specific, the 11 recruited participants only answered the agency domain-specific questions. Interviewers read each survey question that was to be assessed and asked the participant to select one of the potential response options. Participants were then asked to describe what they were thinking while responding and were encouraged to describe their thought process by “thinking aloud.” This process ensured the participants’ thought processes reflected the correct comprehension of the survey question. 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?*”. Interviewers also probed if participants appeared to be confused or hesitant about the wording or meaning of specific questions. This process was repeated for each question. At the end of the interview, there were open-ended questions for participants to express any further thoughts on the topics covered. Interviews lasted between 60 and 120 mins.

## 2.6. Data management and analysis

All interviews were audio-recorded, transcribed, and then translated into English by trained research assistants for analysis. The transcripts were deidentified and uploaded to a folder available only to the research team to maintain participant confidentiality. After every few interviews, data collection teams debriefed with the onsite Emory MUSE team who maintained a debriefing workbook.

An initial codebook with deductive codes based on both the subdomains of agency (decision-making, leadership, collective action, and freedom of movement) and the CI guide (Supplementary material A) was developed. Each transcript was then uploaded into MAXQDA, a qualitative and mixed-method analysis computer software (version 22.1.0) (VERBI Software, 2021). The first author (RD) utilized analytic memos for the inductive code development process, noting themes and ideas generated from the data. After the inductive codes were added and the codebook (Supplementary material B) was finalized, the textual data was fully coded by author (RD) and the transcripts were organized according to these codes. The codebook development and coding process included regular meetings and communication with author (BC), and discussions with members of the Emory MUSE team, including authors AC, MP, and SS. Summary code reports were generated to begin a deeper exploration of coded data and review patterns and themes specific to each code. Applied thematic analysis explored properties and key dimensions of decision-making, leadership, collective action, and freedom of movement (Guest et al., 2012).

Salient themes alongside supporting quotes are presented in the results section and have been further validated by review of authors directly involved in data collection (SA and VR). The

findings have intentionally not been quantified or represented with numbers to prevent generalization and overinterpretation of findings (Maxwell, 2010, p. 470–480; Neale et al., 2014; Hennink et al., 2020). Additionally, the data included spontaneous reporting from participants, so it is recommended to limit enumeration when not all participants had an opportunity to speak about a certain concept (Neale et al., 2014).

## 2.7. 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. Verbal consent to participate and be recorded was obtained immediately before each interview.

## 3. Results

Women who were interviewed represented various life stages, educational backgrounds, and occupational statuses (Table 2). The age range of the women interviewed was 19–57 years and comprised women at three life stages: unmarried ( $n = 3$ ), married ( $n = 5$ ), and over 40 ( $n = 3$ ). More than half of the women ( $n = 7$ ) had sanitation facilities in their dwellings. All the women indicated caring for dependents and that sanitation is an issue in their community.

The results are organized by subdomains of agency—freedom of movement, decision-making, leadership, and collective action—starting with the individual level, to the household level, and thereafter, the community level. Our findings showed participants had the freedom and autonomy to move to and from sanitation facilities and initiatives, with no restrictions from household members. With decision-making, we observed differences at the household and community levels with participants voicing more confidence, as well as the responsibility, to make sanitation-related decisions in the household than at the community level. When discussing leadership, they mentioned strong trust and belief in women’s sanitation-related leadership capabilities and support for women-led sanitation initiatives. However, participants did not hold leadership positions themselves due to various limitations, from gendered responsibilities to women’s lack of self-confidence. Finally, for collective action, they discussed personal anecdotes of women collectively working toward improving local sanitation infrastructure and providing sanitation/hygiene education. The challenges women faced with collective action were otherwise the same as those that limited leadership. Key themes and patterns that explore women’s sanitation-related experiences within each subdomain of agency were identified and are further discussed in the following sections. Of note, when discussing community-level sanitation efforts or challenges, participants sometimes referred to garbage and sewage (which remains consistent with Swachh Bharat Mission’s scope for national sanitation), instead of solely toilet use which frames the definition of sanitation for this research.

TABLE 2 Participant characteristics for agency cognitive interviews ( $n=11$ ).

	Mean	Range
Age	33.3	(19–57)
	Total number (N)	Total percentage (%)
<b>Life stage</b>		
Unmarried (18–25)	3	27.2
Married (25–40)	5	45.5
Over 40	3	27.2
<b>Type of home<sup>a</sup></b>		
Single family home	9	81.8
Apartment	1	9.1
Compound with shared living spaces	1	9.1
<b>Marital status</b>		
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
<b>Education</b>		
Completed primary or less	6	54.5
Completed secondary to tertiary	1	9.1
Completed bachelor's or more	4	36.3
<b>Occupation</b>		
Unemployed	7	63.6
Employed <sup>b</sup>	3	27.3
Student	1	9.1
<b>Religion</b>		
Hindu	10	90.9
Catholic	1	9.1
<b>Location of water source</b>		
Own dwelling	6	54.5
Own yard/plot	4	36.3
Elsewhere	1	9.1
<b>Sanitation location</b>		
Own dwelling	7	63.6
Own yard/plot	3	27.3
Elsewhere	1	9.1

<sup>a</sup>Missing data for one interview.

<sup>b</sup>Two participants were self-employed and one participant was both self-employed and employed.

### 3.1. Freedom of movement

Participants reported having the autonomy to move freely to access sanitation facilities and attend sanitation-focused meetings and events most of the time. When barriers to women's sanitation-related freedom of movement were discussed, they were often at the societal and community level, rather than at the household level. In urgent situations, participants expressed the freedom to use toilets in other known households: “*Now there is a latrine, there's one at uncle's house. In that emergency, we can go there*” (CI01, Married).

While participants could freely access sanitation facilities and attend sanitation-related meetings, there was overall agreement that women should inform their family members when leaving the house to ensure safety and awareness of their whereabouts: “*If I am going to a program, in the house you should let them know, right?... The people in the house must know that I'm going here, to let them know, definitely I inform and then go*” (CI07, Unmarried). Most participants did not seek permission for any sanitation-related movement and had a common belief that women, regardless of whether married or unmarried should not have to ask for permission to leave the house for sanitation purposes: “*I: Do you have to ask a lot, or can you go without asking? P: Without saying we can go. We can go and come [back].*” (CI02, Married). In contrast, two married participants believed that those who are newly married may have restrictions on leaving the house for sanitation-related purposes or initiatives. Only a few participants 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.*” (CI08, Married). In situations where only one person was accompanying the woman, family members felt comfortable only if the person accompanying was a relative or a close friend.

### 3.2. Decision-making

#### 3.2.1. Household decision-making

Most participants believed that women should make decisions about sanitation and water issues in the household and that the men in the household should seek women's views if they make decisions. Many participants described how women would influence their family's decisions, while others noted that women's influence was limited. One participant said, “*If women tell, men will listen*” (CI—08, Married) about all household-related decisions. Joint decision-making with their husband, when possible, was considered best for their household's sanitation infrastructure and environment. However, if mutual decision-making was not possible, many believed that women should be the deciding authority for sanitation-related issues.

Participants generally voiced confidence in women's ability to participate in household decision-making. They said that family members, including husbands, were typically receptive and supportive of women's sanitation-related decisions and choices. Participants 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 women's opinions: "Only when a woman is involved, can a man do." (CI11, Over 40). All the participants described having a decision-making influence in determining how a sanitation facility environment is cleaned and maintained. However, some participants expressed limited decision-making influence regarding their household's sanitation construction and believed it was acceptable for husbands to make the final decision without seeking their views. This idea will be further expanded in the section below that discusses women's perceptions of men's decision-making roles at the household level.

An overarching belief was that women had primary responsibility for the care of the household's sanitation needs and environment, so their role in making decisions about cleaning and maintenance of the household sanitation facility was a foregone conclusion rather than an active expression of their agency. The sentiment of "not having a choice" with maintaining and caring for the household's sanitation needs was common. One participant said that she would decide to divide tasks among her family "Only if I'm not able to do the work." (CI05, Over 40) and when asked about water-related decision-making noted that "There is no need for decision-making" because she must do all the work in the family anyway. Another participant supported this sentiment, saying that while she could theoretically request her husband to purchase items like soap or cleaning liquid for the sanitation facility, she does not do so because maintaining the sanitation environment is her responsibility.

Participants reported having decision-making power over small expenses but noted that larger expenditures required more household discussion. Some women had been involved in decisions related to large expenses (e.g., construction or repairs of a sanitation facility), while all women were involved in decisions related to smaller expenses (e.g., buying cleaning agents and soap). Many believed financial management to be better handled by women. One participant believed this because more women are getting educated, and "[women] look after their family budget at home, about how to spend. So, because of that they can look after" (CI04, Unmarried). There was variation in women's experiences with major sanitation-related investments and purchases. Some participants believed that larger financial decisions should be made jointly. 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" (CI05, Over 40). Another participant agreed, saying "We decide such things [high budget decisions] together" (CI10, Married).

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 the male head of the family should seek women's views when making these decisions, but ultimately, they found it acceptable for male heads to make the final decisions for the household. One participant believed it would be "good" if her husband made important sanitation decisions without asking her as they normally align with her decisions. Another specifically described that her husband could make the correct sanitation decisions and mentioned "when I can myself make those decisions, they can too" (CI09, Married). While many participants generally believed that male partners making important sanitation-related decisions without asking their wives is completely unacceptable:

"Only they [women] know everything, about where the waste is thrown, water need[ed]" (CI11, Over 40), an alternative idea was that few participants appreciated their male partners taking care of the household's sanitation needs on their own accord. An overarching idea was that men must consider women's views when making household sanitation decisions as participants believed women are more aware of household sanitation needs and the environment.

### 3.2.2. Community decision-making

Despite their comfort with many household-level decisions, participants voiced more challenges with feeling comfortable openly sharing their opinions or having their decisions accepted at the community level. Several participants noted that, while women have opportunities to voice their opinions, community members and organizations may not accept or act upon them—"But they [men] don't agree with our opinions. They tell and ask us to accept that only. If we tell, they don't accept it... they say that they [men] have spoken and they [men] have done it." (CI01, Married). There was, however, consensus that women must be involved in the community's sanitation and water decisions. Participants were more aware of community-level 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).

Despite participants believing that women are more aware and proactive about sanitation issues in the community, they believed that their role in decision-making remains limited. Participants 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." (CI11, Over 40). Overall, many believed that women know more about community sanitation, and it is their duty to be involved in sanitation but noted that they have fewer opportunities than men to influence their community's sanitation-related decisions, limiting their role in community decision-making. All participants completely agreed that women should be more involved in making these decisions and that their community leaders and organizations must seek women's opinions to fully understand the local sanitation environment.

Participants were very comfortable being involved in decision-making at community sanitation meetings that comprised only women. Generally, participants indicated feeling completely comfortable expressing their sanitation-related opinions when among other women, even if there were women who disagreed with their views during discussions. Participants' community-level decision-making was observed in the construction of sanitation-related infrastructure or addressing other community issues such as garbage disposal, clogged drains, or street maintenance. The overall perception was that "women-only" groups provided a space where women could listen and share their opinions with no restrictions on topics that were covered.

In contrast, there were accounts that 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. As one participant described, “P: *If men were not present then women would be able to participate. I: Why is that? P: Men ask why the women are interfering when they are talking*” (CI05, Over 40). She 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. It was more challenging when men led these forums or 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. One participant noted, “*I don’t think men will appreciate women talking. So, it is better to gauge the group and then talk. Whereas, if the meeting is conducted exclusively by women, then she can freely discuss her issues*” (CI10, Married). In voicing her opinion, one participant asked “*How can we talk about such [general sanitation] issues in the presence of a man? It is little difficult to speak but more convenient when men and women are present*” (CI11, Over 40). A minority of participants agreed that men should be making sanitation-related decisions for their community, and one participant mentioned that while men can solely make decisions for the community, joint decision-making is more prevalent in the household. In contrast, another 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*” (CI04, Unmarried).

### 3.3. Leadership

Few participants reported holding formal or informal leadership positions for sanitation initiatives in their community. Projects led by women included advocating for toilet construction, petitioning for sanitation-related changes in their community, and organizing sanitation education workshops. One participant, who identified herself as an informal leader, mentioned that a lack of response from the local sanitation office resulted in her leading a group of women organizing a community cleaning initiative. Participants also reported that community members listened to their opinions and that they informally led meetings about keeping toilets clean, maintaining sanitation facilities, and discussing hygiene concerns among small groups of 10 people or fewer. Many participants, however, said that they were not leaders of any community-based sanitation organizations and/or that they did not wish to hold leadership positions. Reasons for this sentiment included: no time due to major responsibilities at home, perceptions of the education level or knowledge required of a leader, lack of connection with the local community, lack of acceptance of women as leaders in the community, the perception that others were more capable, and a simple lack of interest.

All participants believed in women’s capacity as leaders for sanitation initiatives. They expressed that they, alongside other women in the community, would support female sanitation

organization leaders completely. Some participants noted that women’s overall expertise in household sanitation and hygiene made them more suitable leaders. Participants mentioned that women can effectively lead, confidently make decisions, and efficiently address the community’s needs, particularly women’s sanitation and hygiene concerns. One participant noted “*If women are there, I’ll completely trust*” (CI06, Married).

Participants expressed a range of opinions about family and local community members’ support for women’s leadership. Most participants reported that both male and female family members would support them completely if they took on a leadership position. Only one 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. Some women also felt that the community was completely accepting and encouraging of women’s leadership for sanitation initiatives, as long as the woman was competent. A participant explained, “*They [community members] accept them completely. If a leader stands, they take them. If they think she’s right.*” (CI11, Over 40). This participant emphasized that it was most important to have someone effective, regardless of gender “*if they’re doing something good for us, it doesn’t matter if it is a man or a woman*” (CI11, Over 40).

At the same time, some participants indicated that community members, particularly men, do not fully accept women’s leadership. One participant attempted to lead a sanitation group through her church to clean the community and spread sanitation education. However, the community undermined the participant’s decision-making power and did not accept her leadership. She explained “*We were a small group who tried to clean and create awareness through our church. We were about 6–7 people, but people frowned upon our work so we stopped.*” (CI05, Over 40). Other participants described how men were particularly unsupportive and desired to be “*the first*” leaders. Additionally, some participants explained that men believe only their opinions to be true and felt they could not share issues with women. One participant noted, “*[men] can’t accept my being in authority. I’ll say something they’ll say another thing, which will lead to disagreements. ‘Who is she to tell us off?’ is the type of mentality they have.*” (CI05, Over 40).

There was variation in participants’ perceptions 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. As one participant reported, “*If they don’t know who it is, what they’ll do, getting their support is difficult. So, similarly for this also, complete support won’t be there, they will partially support*”. Similarly, a participant mentioned that 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.

Many participants indicated that they did not believe that men alone should lead sanitation initiatives, explaining that men cannot take care of the house better than women, do not care about sanitation or hygiene, do not have time to lead such initiatives due to their work, and that woman cannot talk openly to male



leaders about certain issues. One participant shared her personal experience of continuously speaking with male councilors but never feeling heard by them. Participants also supported the idea of both women and men being leaders together. They expressed that both women and men are equal, and that men's and women's opinions can be heard if both are leaders. A participant added "...when there is a situation with just male leaders, they don't care, we [women] won't feel comfortable.. I say this out of personal experience. But when there are male as well as female leaders, work definitely gets done...." (CI05, Over 40).

### 3.4. Collective action

Participants agreed that collective action by the community is the best way to address a sanitation problem. Many mentioned experiences where women successfully collaborated to improve their communities' existing sanitation environment and organized sanitation and hygiene education initiatives. Some participants perceived strong solidarity among women in their community; others, however, doubted whether women in their community would work together if a common sanitation issue presented itself and persisted.

Participants were described as more proactive in voicing their sanitation-related opinions and acting on sanitation improvement in the community compared to men. An example of women's sanitation-related collective action was a women's group that advocated for free public toilets and bathing facilities for women. The group was inspired by observing how women coming from other towns, especially for funerals, faced difficulty locating toilets. Participants in the community who previously practiced open defecation also worked together to advocate for household toilets: "We used to go in the open. After that slowly everyone started building it [a toilet]. For those who don't have [a toilet], we spoke with them and formed a group of 5.5 of us joined...and told them [the local sanitation office] that we don't have a toilet. Sanitation should be clean we told, and we asked we need one for the house." (CI03, Over 40). Another women-led initiative was redeveloping existing public toilets in the neighborhood. When asked about collective sanitation efforts, women reported having acted collectively to address other issues, including drainage, garbage disposal, and water shortages around the community.

Participants described similar barriers to engaging in collective action as they did to engaging in leadership roles. Participants voiced a lack of 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." (CI05, 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." (CI04, Unmarried). 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" (CI06, Unmarried).

While a rare perception, some participants believed that women may find it difficult to work together; resolving a sanitation issue together would be challenging because "whenever ladies get together, they end up arguing" (CI10, Married). 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. "Depends on the people...some people work just for the cause, but some others might launder money" (CI05, Over 40). Uncertainty on whether women would be willing to give their time and money for sanitation-related projects was expressed at times while others stated that those who cannot afford to contribute money would invest their time in these initiatives instead.

Some participants described facing resistance when interacting with authority figures, government officials, and the local sanitation office to address sanitation problems, but reported having success working with men in the community. For example, the local sanitation office did not take any steps when women expressed concerns about the "messy" community environment. Additionally, another participant expressed that "Male leaders don't care much about hygiene and sanitation. We tried talking to the male councilors a lot; they never listened to us" (CI05, Over 40). After the local government failed to organize cleaning efforts, women collectively paid for cleaning common areas in the neighborhood. On the other hand, most participants expressed feeling comfortable working with male community members for sanitation initiatives. While women's groups often collaborated to address sanitation-related issues, men and women in the community also jointly worked together for sanitation improvement. Collectively, 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.

## 4. Discussion

This qualitative analysis aimed to explore the subdomains of women's sanitation-related agency—decision-making, leadership, collective action, and freedom of movement—in urban areas of Tiruchirappalli, India. Our results demonstrated how trust in women's competency, belief in their ability to work together, and expectations of women's duties influenced their leadership, collective action, and aspects of their household and community-level decision-making. While participants showed strong support for women's leadership and decision-making abilities for local sanitation initiatives, there were many day-to-day barriers to exercising their agency in their lived experiences. Participants expressed a lack of confidence, interest, or time for involvement in sanitation-related initiatives. 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 amongst other male community members.

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 local governance and community norms affected their collective action, leadership, and freedom of movement.

The results of our study provide insight into potential entry points for sanitation programming to bring about gender transformative change. MacArthur et al. (2022) describe how gender transformative approaches need to address deeply rooted systemic inequalities within the relevant sector. According to MacArthur et al. (2022) gender transformative approaches “aim to reshape gender dynamics by redistributing resources, expectations and responsibilities between women, men, and non-binary gender identities, often focusing on norms, power, and collective action.” The results from this study introduce different areas of focus for gender transformative change in sanitation among the study population. The interaction between women's individual and community-level agency with the systems within local sanitation governing bodies emphasizes an entry point for higher-level structural change. Overseeing and restricting the bodies that process community requests and oversee community engagement can ultimately feed into better support among women to collectively act or pursue sanitation leadership roles. Our results and interpreted themes in the discussion align with MacArthur et al.'s (2022) third principle i.e., “Grounded in strategic gender interests” as they unpack causes related to challenges to women's sanitation-related agency. These can be utilized to strengthen sanitation interventions at the individual, household, community, and organizational levels, or prevent sanitation interventions from contributing to the existing challenges women face with agency. Similarly, across the WASH sector, it is important to explore agency in relation to water and hygiene and integrate gender transformative approaches in their respective programming.

#### 4.1. Trust and belief in women's competency

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 (Aladuwa and Momsen, 2010). In our findings, trust in women's leadership facilitated some participants' engagement in sanitation initiatives and positively influenced collective action. Similarly, research in rural Kenya with household heads found that high trust in community leaders influenced collective engagement and participation in WASH initiatives (Abu et al., 2019). A study in Indonesia among women who engage in WASH-related economic activities, including as 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).

Participants expressed more trust and faith in women's financial management for sanitation organizations than in men's, supported

by their trust in women managing finances and working together to make decisions for the community's sanitation environment, which is a sentiment noted in research elsewhere as well. Research in northern Kenya that 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). In our research, participants who had been leaders of formal and informal sanitation groups described successful initiatives that brought forth sanitation improvement in their community. Recognizing women's competency in addressing sanitation issues could increase the community's trust in women's capabilities and provide successful examples of women-led sanitation initiatives. Therefore, maintaining and strengthening trust in female community members, and highlighting women-led groups' achievements in the sanitation space should be prioritized in WASH programming.

#### 4.2. Expectations of women's duties

This study, consistent with many others, found that women are often responsible for sanitation-related maintenance and cleanliness in the household. Because women do the majority of sanitation upkeep in the household, they feel that they are more capable of making decisions on household sanitation-related issues than community-related issues. However, the gendered roles and responsibilities that provide women with this expertise also serve as barriers, with many women having neither the time nor the energy to participate in community-level decision-making or sanitation initiatives, or to pursue leadership roles. Some women may prefer not to have sole responsibility for these household sanitation decisions but feel restricted due to these gendered responsibilities. Similarly, a study in Odisha, India demonstrated that 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). Our findings showed freedom of movement for sanitation-related purposes was restricted, most commonly among the newly married, a finding consistent with a study in Odisha, India where family members did not give recently married women permission to attend sanitation-related focus group discussions (Caruso et al., 2017).

Despite many participants supporting women's ability to make sanitation-related decisions, as found in other studies, some participants in this research lacked the self-confidence to contribute to sanitation-related discussions in their community, and organizations also failed to recognize women's expertise. Research has highlighted the impact of gendered social norms on women's perceptions of their abilities to lead sanitation initiatives (Young, 2005; Jalali, 2021). While women's expertise in sanitation was recognized by this study's participants and other research, our findings showed participants sought joint decision-making for large sanitation decisions and financial decisions, whereas they were more comfortable making smaller decisions alone, such as fixing the tiles/lights or buying cleaning agents. Existing research also has found 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). In addition, 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). 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.

### 4.3. Men's support and role in gender-sensitive WASH

In contrast to other studies, our findings show that male family members were supportive of women's involvement in sanitation groups and did not limit women's sanitation-related freedom of movement. Research in urban north-Indian cities found male family members restrict women's sanitation-related freedom of movement and decision-making (Singh, 2013; Kulkarni et al., 2017). Despite male family members' support, participants in our 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 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 et al. (2017) emphasized a need to shift men's views regarding the value of women's community-level participation. There is a need for gender-sensitive WASH programming to focus not only on women but also to work with men to transform the power dynamics and social norms that determine women's sanitation experiences. Our findings are especially supportive of Leahy et al.'s (2017) push for interventions that allow men and women in the community to discuss their opinions both separately and together, which could help reduce discomfort without completely segregating men and women during sanitation discussions.

### 4.4. Leadership's support and sanitation-related governance

Our findings align with existing research, which shows that local leadership, sanitation programming, and the community's sanitation expectations limited women's agency. 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 results indicated that local leaders were more likely to support women's leadership when the women were well-known and had clear qualifications, suggesting that a woman's social capital may influence the support or acceptance she receives as a sanitation leader. We also found that women were discouraged 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 government officials only adequately address women's complaints if the women have high positions in organizations. Similarly, in their research in northern India, Scott et al. (2017) showed how "fragmented and opaque administrative accountability" created barriers for women to gain access to those leadership positions. The present study supports calls to engage 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).

### 4.5. Strengths and limitations

The cognitive interviews allowed women to share their perspectives and experiences in response to the agency-related survey questions. 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. Open-ended questions might have elicited more detail. Still, the cognitive interviews elicited details about women's perceptions and experiences related to women's sanitation-related agency, including factors affecting leadership, decision-making, freedom of movement, and collective action at the individual, household, and community levels. While men's perspectives were not included in this analysis, the women participants provided 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. Future research could explore men's perspectives and support for women's agency with sanitation. Additionally, there is scope for future research to explore the sub-domains of agency in a rural setting as factors such as access to resources, land terrain, cultural norms and social structure could lead to different results. There was also variability in some participants' perception of sanitation with references made to garbage and sewage, instead of solely toilet use (i.e., the definition of sanitation used for this research). However, participants were not directed to speak only about toilet use to prevent bias in the interviews and clearly capture their honest perspectives. This was noted in the results section to ensure transparent reporting of the participants' sanitation experiences.

## 5. 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 in urban Tiruchirappalli. Programs must recognize women's expertise in large or small sanitation-related issues. Highlighting successes among both formal and informal women-led sanitation initiatives

may encourage women to participate in similar initiatives. Communities should have physical and social environments where women's sanitation-related opinions can be comfortably shared and governance that respects and encourages women's engagement in addressing sanitation issues. There is a need to engage men when addressing gender-based sanitation-related restrictions. Future efforts in WASH programs and research should address and explore women's agency in conjunction with other empowerment domains, (i.e., resources and institutional structures).

## Data availability statement

The datasets analyzed in this article will be posted to a public data repository upon publication of the research. Requests to access the datasets should be directed to BC, [bcaruso@emory.edu](mailto:bcaruso@emory.edu).

## Ethics statement

The studies involving human participants were reviewed and approved by Emory University Institutional Review Board (USA; IRB 00110271) and Azim Premji University Institutional Review Board (India; Ref. No. 2019/SOD/Faculty/5.1). The participants provided verbal consent to participate and be recorded in this study.

## Author contributions

RD: formal analysis, interpretation, data curation, validation, writing—original edit, writing—review and editing, and final approval. MP and AC: investigation, methodology, data curation, project administration, validation, writing—review and editing, and final approval. VR: investigation, data curation, project administration, validation, writing—review and editing, and final approval. SA: validation, writing—review and editing, and final approval. SS: conceptualization, methodology, funding acquisition, project administration, resources, supervision, validation, writing—review and editing, and final approval. BC: conceptualization, formal analysis, interpretation, methodology, funding acquisition, project administration, resources, software, supervision, validation, writing—review and editing, and final

approval. All authors contributed to the article and approved the submitted version.

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## Conflict of interest

VR and SA were employed by Civic Fulcrum.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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## Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/frwa.2023.1048772/full#supplementary-material>

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# Gender equality approaches in water, sanitation, and hygiene programs: Towards gender-transformative practice

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The recent (re-)emergence of gender-transformative approaches in the development sector has focused on transforming the gender norms, dynamics, and structures which perpetuate inequalities. Yet, the application of gender-transformative approaches within water, sanitation, and hygiene (WASH) programming remains nascent as compared with other sectors. Adopting a feminist sensemaking approach drawing on literature and practice, this inquiry sought to document and critically reflect on the conceptualization and innovation of gender-transformative thinking in the Australian Government's Water for Women Fund. Through three sensemaking workshops and associated analysis, participants developed a conceptual framework and set of illustrative case examples to support WASH practitioners to integrate strengthened gender-transformative practice. The multi-layered framework contains varied entry points to support multi-disciplinary WASH teams integrating gender equality, as skills and resources permit. Initiatives can be categorized as insensitive, sensitive, responsive or transformative, and prompted by five common motivators (welfare, efficiency, equity, empowerment, and transformative reequality). The framework has at its foundation two diverging tendencies: toward instrumental gender potential and toward transformative gender potential. The article draws on historical and recent WASH literature to illustrate the conceptual framework in relation to: (i) community mobilization, (ii) governance, service provision, and oversight, and (iii) enterprise development. The illustrative examples provide practical guidance for WASH practitioners integrating gendered thinking into programs, projects, and policies. We offer a working definition for gender-transformative WASH and reflect on how the acknowledgment, consideration, and transformation of gender inequalities can lead to simultaneously strengthened WASH outcomes and improved gender equality.

## KEYWORDS

gender-transformative, gender-transformation, WASH (water, sanitation, and hygiene), social transformations, gender equality, feminism, gender-transformative WASH, gender-transformative approach

## Introduction

Gendered thinking in the water, sanitation, and hygiene (WASH) sector was initially prompted in the 1970's during an overlap of the International Decade for Women and the International Decade for Water and Sanitation (1975 to 1981). Yet four decades on, transformative models of gender equality for WASH policies, programs, and projects are only recently emerging (Sinharoy and Caruso, 2019; MacArthur et al., 2022a). Notably, the sector's historical focus on infrastructure, has been less concerned with social gender issues (Fisher et al., 2017; Sweetman and Medland, 2017). Additionally, WASH has been associated with historically male dominated disciplines such as public health, engineering, and management (Udas and Zwartveen, 2010; Willetts et al., 2010; Zwartveen, 2010; Alda-Vidal et al., 2017; World Bank, 2019) and hence the sector has been slow to adopt concepts such as equality and diversity (Cavill et al., 2020; Worsham et al., 2021).

The perspective that gender equality can contribute to a range of development outcomes *and* be an outcome of development interventions itself is articulated as a gender-transformative approach (Kabeer, 1994). In other terms, gender-transformative initiatives aim to transform relational, collective, and structural gender inequalities alongside and through other development interventions (MacArthur et al., 2020, 2022a). A gender-transformative approach is characterized by: (1) starting from a purposefully transformative agenda (*why*); (2) engaging with structural systems and not the symptoms of inequality (*where*); (3) maintaining a focus on strategic gender interests (*what*); (4) recognizing and valuing diverse identities (*who*); and (5) adopting transformative methodological approaches (*how*) (MacArthur et al., 2022a). However, in contrast to development sectors such as health and food systems, gender-transformative thinking is nascent and unclarified in the WASH sector (MacArthur et al., 2022a).

As seen in the “pioneering” emergence of gender-transformative approaches in food systems initiatives (AAS, 2012; McDougall et al., 2021), the uptake of transformative thinking required a concerted effort by practitioners to address the lack of sectoral progress on gender equality. The process involved building coalitions between practitioners, academics, and donors for the “conceptualization and innovation” of gender-transformative approaches (McDougall et al., 2021, p. 3). The gender-transformative food systems coalitions intentionally sought to adapt learnings from reproductive health programming, defining tailored frameworks, language, and areas of focus (McDougall et al., 2021). Like food systems, the WASH sector has seen slow progress in addressing gender inequalities (Sinharoy and Caruso, 2019). As such, a concerted effort to adapt and adopt a gender-transformative approach to WASH was promoted in the Water for Women Fund (2018–2022). Funded by the Australian Government, the Water for Women Fund sought to promote the development of coalitions and innovations in gender-transformative approaches through socially inclusive and sustainable WASH projects and research in 15 countries in Asia and the Pacific. Notably, the Water for Women Fund actively looked beyond a gender-binary and adopted concepts of intersectionality to more holistically address gender and social inequalities (Water for Women, 2019b).

Drawing on existing published experiences and three summative sensemaking workshops with six academics and leaders from the Water for Women Fund, this inquiry had two objectives. Firstly, to document and critically reflect on the conceptualization and innovation of gender-transformative thinking in the Water for Women Fund. Secondly, to identify a conceptual framework and set of illustrative case examples to support future WASH practitioners in adopting a more gender-transformative approach. A third emergent outcome was the critical interrogation of the common frameworks used in other gender-transformative initiatives—gender-integration continuums.

The article begins by introducing several connection points between gender equality and WASH, providing definitions related to gender and development, and clarifying two conceptual models which have been used to classify and describe different forms of gender-integration in development programming. Following this, we describe the inquiry's approach, which comprised of three sensemaking workshops drawing on existing published cases and the experiences of the Australian government's Water for Women Fund. The results section begins with the introduction of a framework of gender-integration suitable for the WASH sector. Next, the study illustrates the framework's application in three types of WASH activities: (1) community mobilization, (2) governance, service provision and oversight, and (3) enterprise development. In the discussion, framed by six characteristics of a gender-transformative approach (MacArthur et al., 2022a), the paper provides key considerations for WASH programs interested in adopting gender-transformative perspectives. Finally, the article reflects on future research needs before offering concluding remarks.

## Background

### Reasons for integrating gender equality in WASH initiatives

Existing literature has identified several philosophical, cultural, biological, and programmatic reasons to integrate WASH and gender equality. First, WASH is important to the full enjoyment of life for all; including women, girls and those who have been historically marginalized. Global mandates including the Sustainable Development Goals (SDGs) and the recognition of the human right to water and sanitation highlight the importance of WASH for the full enjoyment of life (Singh et al., 2008; JMP, 2021). Second, WASH activities in the home and community are strongly gendered. In many cultures, women and girls are traditionally responsible for household WASH, yet men are responsible for water management in the public arena (White et al., 1972; Elmendorf and Isely, 1981; van Wijk-Sijbesma, 1985). Third, improvements in WASH are often not equitable. Women, girls, and the socially marginalized have been the least likely to benefit from improvements in WASH (van Wijk-Sijbesma, 1998; Fisher et al., 2017). Fourth, not everyone has the same WASH-related biological needs. For example, women and girls face unique WASH challenges during pregnancy, lactation, menstruation, and menopause (Hulland et al., 2015; Sahoo et al., 2015; Baker et al.,

2017). Sexual and gender minorities also have specific needs, though these are often overlooked (Boyce et al., 2018). Fifth, the integration of gender equality into WASH policies and programs can lead to improved WASH outcomes (Taukobong et al., 2016). The active engagement of women and the socially marginalized, has been shown to lead to improved efficiency, sustainability, and effectiveness of WASH systems (Van Wijk-Sijbesma, 1987; Mommen et al., 2017). This said, some authors have noted that these interventions must be careful to avoid exploitative approaches which do not foster agency (Cornwall, 2001; Cavill and Huggett, 2020). Lastly, and often overlooked in the WASH sector, improvements in WASH can (but are not guaranteed to) foster improved gender equality and social inclusion outcomes (Ivens, 2008; Willetts et al., 2010; Gender and Development Network, 2016)—this perspective is key to gender-transformative modalities of WASH.

## Gender equality terms and definitions

A gender-transformative perspective of WASH necessitates a clear foundational articulation of gendered concepts grounded in feminist development (Kabeer, 1994; Cornwall and Rivas, 2015). Firstly, the term gender. This paper defines *gender* as the socially constructed structures and dynamics which govern a society's perspectives of masculinity and femininity (Butler, 1999). Gender is one category of intersectional historical oppression (Crenshaw, 1989), other categories include: “*race, class...sexuality, gender identity, ethnicity, nation, ability, and age*” (Collins, 2015, p. 2). An intersectional approach therefore considers how categories of historical oppression intersect. As such, while this paper focuses specifically on gender equality, many scholars and practitioners have considered aspects of social inclusion and gender equality jointly. Secondly, this paper conceptualizes *gender equality* as the state of “*equal rights, responsibilities and opportunities of women and men and girls and boys [and individuals of diverse genders]*” (Hannan, 2001, p. 1). Notably, we add the clause related to the inclusion of other genders, recognizing a shift in thinking from binary to diverse genders. Drawing from the Beijing Platform for Action (United Nations, 1995), gender equality is distinct, yet closely linked with women's empowerment and gender equity. We define *gender equity* as “*fairness of treatment...*” [for individuals of all genders] “*...according to their respective needs*” (UNESCO, 2000, p. 5) and *empowerment* as “*the processes by which those who have been denied the ability to make choices acquire such an ability*” (Kabeer, 1999, p. 437). Therefore, the paper conceptualizes gender equality as a transformed status of society, with empowerment and equity as important precursors.

## Foundational conceptual models

Although gender-transformative approaches within international development have seen significant resurgence in recent years (MacArthur et al., 2022a), the concepts and perspectives can be traced to the 1990s in the lead up toward the Beijing Platform for Action (United Nations, 1995). At this

TABLE 1 Differing policy approaches to women and development (adapted from Moser, 1993; Coates, 1999).

Approach	Purpose
<b>Welfare</b> (1950s)	Focused on practical gender needs to “bring women into development as mothers” as passive beneficiaries (Coates, 1999, p. 6). “Purely welfare projects are those to deliver information, education and sometimes free handouts (money, food, technology) to poor women in their roles as homemakers, reproducers, and child rearers. Examples are projects in maternal and child health, hygiene, nutrition, home economics, and home-based appropriate technologies.” (Buvinić, 1986, p. 653)
<b>Equity</b> (1960s)	To equitable meet the strategic gender interests of both women and men. Women are seen as active participants in the development process and the approaches challenged women's subordination. Other scholars saw this approach as more instrumental than transformative in practice (Kabeer, 1994)
<b>Anti-poverty</b> (1970s)	To increase women's productivity and income-generation, to meet women's practical needs. Coates (1999) noted that in this approach, poor women were often instrumentally only recognized for their productive roles
<b>Efficiency</b> (1980s)	To promote efficient and effective development programs, to meet women's practical needs. Coates (1999) describes that women are often seen in their capacity to strengthen economic efficacy (“smart economics”).
<b>Empowerment</b> (1990s+)	To empower women in greater self-reliance reaching strategic gender interests. This more radical approach aimed to support bottom-up initiatives to overcome oppression.

time, two main conceptual models emerged to help classify and clarify different types of gendered programming (March et al., 1999). Both conceptual models were premised on the idea that gender-transformative programming is best classified in contrast to other less or non-transformative modalities.

The first model, articulated by Moser (1993), identified a loose evolution of gender-integrated programs focused on welfare, equity, anti-poverty, efficiency and finally empowerment (Moser, 1993). Table 1 introduces the key definitions of the five program types drawing on Moser (1993, p. 56–57) and Coates (1999, p. 6). Moser's model drew on foundational work by feminist development practitioner Buvinić (1986); who described the “misbehavior” of women-focused development policies which she argued had slipped from opportunities to empower women toward purely practical gender outcomes. While such practical gender outcomes are important for overall health and wellbeing, they are not able to address gender inequalities as strategic gender interests (Buvinić, 1986; Moser, 1993). The framework articulates a series of program motivations and was first adopted in the WASH sector in 1999 by WaterAid (Coates, 1999). Moser herself argues that many approaches were used in parallel and that even in the 1990s, welfare-based approaches were common (Moser, 1993).

The second model, articulated by Kabeer (1994) and Kabeer and Subramanian (1996), identified four types of development programs: gender-blind, gender-neutral, gender-specific and gender-transformative; the latter three types classified as gender-aware (1996) or gender-sensitive (1994). Figure 1 illustrates the framework and provides key definitions for the four classification types.



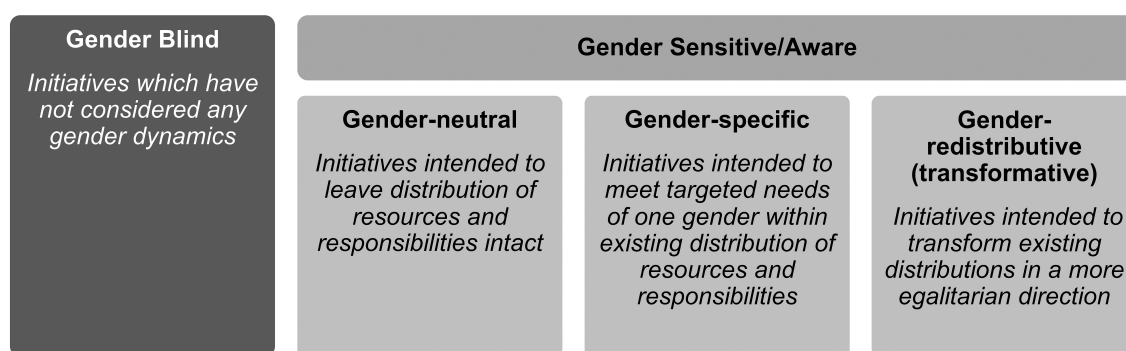


FIGURE 1

Classifications of gender policy, adapted from Kabeer (1994) and Kabeer and Subramanian (1996).

In the 20 years which have followed, the second framework has appeared as a continuum in many forms and in three streams of practice focused on relational health, institutional structures, and sectoral change (MacArthur et al., 2022a). Most notably the continuum has been adapted for relational and reproductive health programming (Gupta, 2001; ICRW and Promundo, 2007; Rottach et al., 2009; WHO, 2011; Pederson et al., 2015), with a few emergent examples in climate programming (Harvey et al., 2019) and WASH (Grant, 2017; Grant et al., 2017; WaterAid, 2017; Water for Women, 2019b). A visual summary of these diverse continuums is provided in [Supplementary material](#). It should be noted that most these examples are found in gray literature and that little has been written to critique and interrogate the conceptualization of the continuum in practice.

## Approach

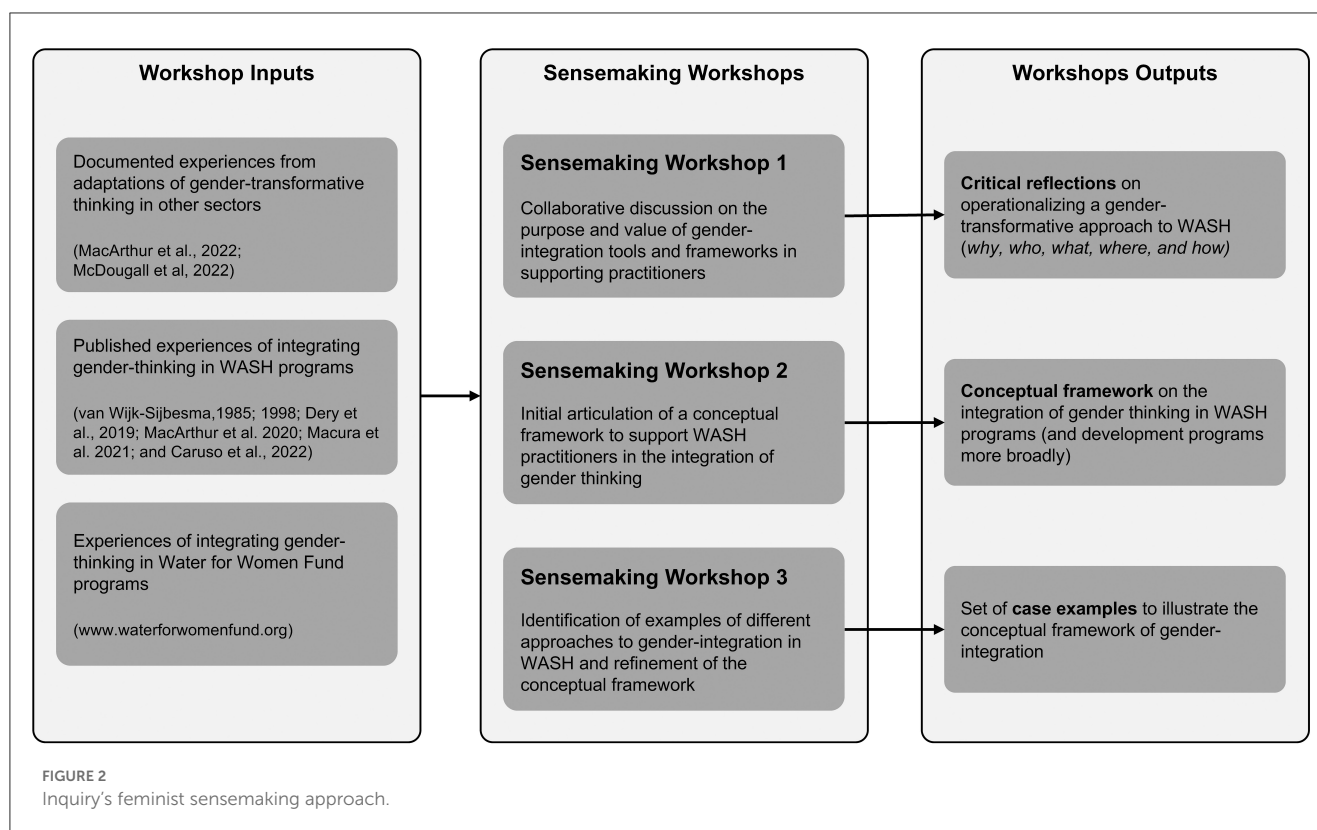
The inquiry utilized a process of feminist sensemaking, building on insights from both literature and practice. The feminist sensemaking approach was selected to solidify and document the lessons and insights of gender-transformative thinking within the Water for Women Fund (2018–2022). Rooted in the constructivist paradigm, feminist sensemaking is a collaborative approach in which targeted discussions are focused on (1) creating sense of a complex topic and (2) constructing “cognitive bridges” through which to communicate and influence policy (Rutledge Shields and Dervin, 1993). Feminist sensemaking can involve structured interviews, focus groups, or workshops, with specific discussion topics and a goal of greater “sense” of the topic. We adopted a workshop format of feminist sensemaking in which the six workshop participants were also the co-authors of this paper and aimed to extend the team’s experiences in the Water for Women Fund. The participants included researchers with specialist expertise in the gender-WASH nexus and in the Water for Women Fund (MacArthur, Carrard, Siscawati and Willetts), and Water for Women Fund specialists in gender equality and social inclusion (Mott), and monitoring and evaluation (Raetz). Participants were selected to best maximize the learnings of the fund, while keeping workshop discussions manageable in a short time-period.

As illustrated in [Figure 2](#), the inquiry built on existing literature and practice in the WASH sector through three sensemaking workshops with an overall goal of identifying and interrogating tools and examples to best support WASH practitioners. The 1.5-hour workshops were conducted using Zoom between July and September 2022. Agendas of the three workshops were emergent, yet each workshop had a specific goal as indicated in [Figure 2](#). The lead author prepared brainstorming topics, collaborative templates, and input materials before each workshop. Email discussions continued between the participants between workshops to help clarify ideas and insights. The workshop inputs included gender-integration experiences from other sectors (see [Supplementary material](#)), gender-WASH literature (van Wijk-Sijbesma, 1985, 1998; Dery et al., 2019; MacArthur et al., 2020; Caruso et al., 2022; Macura et al., 2023), and Water for Women Fund experiences in the “Toward Transformation” strategy (Water for Women, 2019b). Relevant case examples were documented in an online database (stored in *Airtable*) and referred to throughout the workshops. The workshop outputs included critical reflections, a conceptual framework, and relevant case examples.

The collaborative approach sought to bring each team members’ knowledge and experience to bear in pursuit of both scholarly rigor and practical relevance. Each workshop is briefly described below.

The first workshop focused on defining the purpose and value of gender-integration tools and frameworks, critically considering their different forms, applications and limitations based on literature and practice. The discussion relied on examples and frameworks from other sectors (McDougall et al., 2021; MacArthur et al., 2022a) alongside the lessons and insights from the Water for Women Fund. This discussion confirmed our collective perspective that such frameworks offer value in translating concepts into practice, despite limitations associated with their linear presentation and inherently problematic approach to discrete categorization of complex activities. The first workshop produced a set of critical reflections on the common gender-integration frameworks and on the challenges and opportunities of gender-transformative approaches in WASH programming.

The second workshop aimed to codify an appropriate framework for supporting WASH practitioners in integrating a gendered approach. The workshop relied on examples of



gender-integrated WASH programming within to identify framework terminology and design. Notably, this workshop included detailed discussions on the *motivators* that implicitly shape WASH programs and how these *motivators* are closely aligned with typical gender-integration categories. The second workshop produced a working conceptual framework that was then used and refined in the third workshop.

In the third workshop, the team reviewed a pre-developed database of literature case studies and discussed examples from our own experiences to illustrate and refine the proposed gender-integration framework. We sought geographically diverse examples relevant to three WASH program focus areas based on Water for Women Fund initiatives: community mobilization; governance, service delivery, and oversight; and enterprise development. Where examples were lacking in literature, we developed hypothetical scenarios about the ways in which such programs could align with gender integration categories, based on our experiences in the WASH sector. For example, as no published literature case was found on gender-sensitive WASH enterprise development, we discussed and created a hypothetical example supporting women latrine sales agents. Our focus on diversity was intentionally aimed at redressing the dominance of Kenya, India, and Bangladesh in published WASH-gender literature (MacArthur et al., 2020).

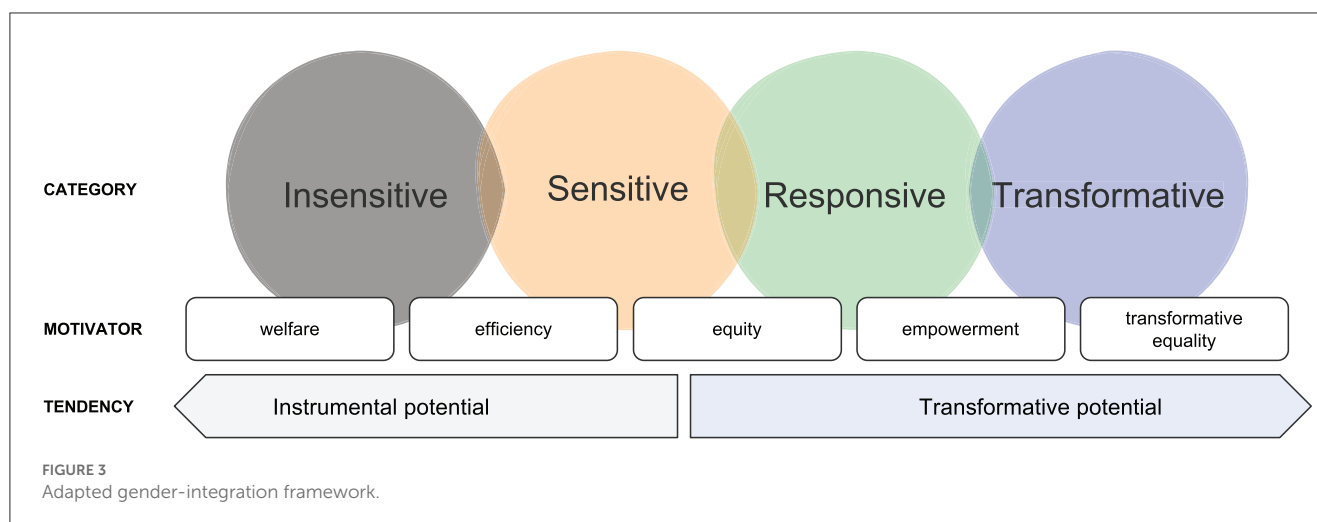
This inquiry and its outcomes must be interpreted through its limitations related to the study team, minimal external validation, and complexity in identifying relevant case studies. Firstly, while the study team came from diverse disciplinary backgrounds, the members were all associated with the Water for Women Fund. Additionally, five of the six members were based at Australian institutions. This positionality reduced opportunities to engage with perspectives more broadly and to draw on diverse insights. To mitigate this, the team actively engaged with documented

experiences from partner organizations across the Water for Women Fund which covers some 15 countries in Asia and the Pacific, however future research could bring more diverse voices into the study team. Secondly, although this study validated the framework conceptually and through the practical lens of Water for Women Fund experiences, there was not an opportunity to engage external voices in the validation and critique of the framing. The inquiry's team sees the framework as a starting place and welcomes further reflection, critique, and experiences to support future evolution of gender-transformative initiatives in the WASH sector. Lastly, there are few academically published case studies describing WASH program initiatives and outcomes in relation to gender equality. Therefore, the team was required to rely heavily on historical examples (van Wijk-Sijbesma, 1985, 1998), gray literature cases known to the team, and recent gender-WASH literature reviews (van Wijk-Sijbesma, 1985, 1998; Dery et al., 2019; MacArthur et al., 2020; Caruso et al., 2022; Macura et al., 2023). Future work could benefit from a systematic case study review of gender-WASH programming examples from both gray and published literature. Despite these limitations, the goal of this work has been to provide an initial translation of gender-transformative concepts, language, and approaches for a sector slow to address inequalities.

## Results

### Conceptual framework of gender-integration

The adaptation of existing gender-integration thinking to the WASH-sector led to the development of a three-layered framework



(Figure 3) which includes: four gender-integration *categories*, five *motivators*, and *tendencies* toward instrumental and transformative potential. While the framework was reviewed and interrogated for WASH initiatives, the insights and outputs from the process may have relevance in other sectors. We begin by introducing the framework and its *categories*, then describing the *motivators* and *tendencies*.

The design of the three-layered framework was selected to best support varied entry points for practitioners. Building on previous multi-layered frameworks (Kabeer, 1994; Rottach et al., 2009; Pederson et al., 2015), the sensemaking process clarified the importance of multi-purpose tools that are appropriate for different types of program staff. Where gender specialists are more likely to resonate with the four gender-integration categories due to their alignment with gender theory, program managers and evaluators may more easily make sense of the five motivators (drivers or mechanisms) which distinguish key influences likely to shape program design. The orientation can also help to quickly identify the direction of the program toward either instrumental or transformative objectives.

We acknowledge that a program or policy may not be easily classified into a single category or motivator, since any program or policy may employ more than one strategy, and also because interventions are inherently shaped by implementing staff (including their relative gender-related critical consciousness) and the way in which staff facilitate interventions (Cavill et al., 2020). As such, an intervention that on paper might be classified as one category, might in practice be implemented based on characteristics of another.

## Categories of gender-integration in WASH programs

The four categories of gender-integration in WASH programs align with and refine previously developed frameworks of gender-integration for development programming more broadly. They include insensitive, sensitive, responsive, and transformative categories and follow a progression from left-to-right toward higher engagement with gender theory and practice. The categories in

the framework were carefully defined and named by reviewing and problematizing existing frameworks and approaches in the first sensemaking workshop. Notably, we drew language from the Canadian International Development Research Centre, which used the terms gender-blind, -sensitive, -responsive, and -transformative (Harvey et al., 2019).

**Gender-insensitive** approaches **do not consider** any gender dimensions and are sometimes referred to as gender blind, harmful or unaware by other scholars and practitioners (Kabeer, 1994; Rottach et al., 2009; WHO, 2011; Khanna et al., 2016). We purposefully avoid the common term “blind” to be sensitive to individuals with vision impairment. Additionally, we do not label this approach as “harmful” or “exploitative” as these phrases are less approachable as entry points for program teams. This said, we recognize that gender-insensitive approaches often have harmful effects and instrumental tendencies. A gender-insensitive approach is likely to maintain the status quo and perpetuate, if not exacerbate, existing social inequalities (Mott et al., 2021) and they often “foster damaging stereotypes” (Gupta, 2001, p. 10). In WASH, a gender-insensitive approach is often associated with technology transfer programs such as handpump or latrine installations which do not consider gender dynamics (van Wijk-Sijbesma, 1985).

**Gender-sensitive** approaches **acknowledge** gender dynamics in the development of interventions; however, work within the traditional or existing dynamics and structures of a context. The approach is also referred to as neutral (Kabeer, 1994), aware (Mott et al., 2021), or inclusive (WaterAid, 2017). We adopt a similar framing to Gupta (2001), who defines a gender-sensitive approach with reference to HIV/AIDS interventions as “programming that recognizes and responds to the differential needs and constraints of individuals based on their gender.” (p. 9). Similar in content, but with a different label, Kabeer and Subramanian (1996) describe this type of approach as “gender neutral” which seeks “to target the appropriate development actors in order to realize certain pre-determined goals and objectives, but...leave the existing divisions of resources, responsibilities and capabilities intact.” (p. 10). As such, gender-sensitive approaches often adopt gender-specific modalities, targeting a single gender for program interventions. For example, in WASH this could include conducting gender analysis,

but focusing more on meeting women's practical needs rather than addressing their strategic gender interests.

**Gender-responsive** approaches **consider** gender dynamics with an intention to empower individuals, but do not aim to remove or address wider structural barriers (Mott et al., 2021). This approach is also known as gender-accommodating or empowering. This concept aligns most closely with Gupta's (2001) final spectrum level "approaches that empower" and WaterAid's "empowering" step toward transformation. This category is often focused on the individual empowerment of a single-gender group of participants. In WASH programs, this includes a focus on meaningful participation, decision-making, and leadership of marginalized groups (Dery et al., 2019).

Lastly, **gender-transformative** approaches **actively seek to transform** the gender norms, structures, and dynamics which perpetuate inequalities within households, communities, and institutions (MacArthur et al., 2022a). Kabeer and Subramanian (1996) describe this form of programming as gender-redistributive seeking to "*transform the existing gender relations in a more egalitarian direction through the redistribution of resources and responsibilities*" (p. 10). Often transformative approaches adopt gender-synchronous strategies—purposefully engaging individuals of different genders both separately and together to address individual, collective, and structural gender interests (Greene and Levack, 2010). Additionally, the transformative approach includes the attention to or even integration of intersecting aspects to accommodate diversities and at the same time addressing plural forms of marginality and marginalization (not only gender-based but also based on class, caste, ethnicity, age, ability, etc.). In WASH, this has included examples such as using water and sanitation monitoring opportunities to transform gender relations (Leahy et al., 2017) or the purposeful engagement of men and boys in menstrual hygiene management (Mahon et al., 2015).

## Gender-integration motivators for WASH programs

Building on the four categories of gender-integration to address the workshops revealed difficulties in articulating the differences between the categories, leading to the inclusion of the five motivators (Table 2).

The five proposed motivators (welfare, efficiency, equity, empowerment, and transformative equality) broadly align with Moser's (1993) categories of the evolution of gender programming introduced in this article's background section (welfare, equity, anti-poverty, efficiency, and empowerment). However, we have made four changes to Moser's initial conceptualization.

First, we disconnected the spectrum from an evolutionary timeline (from the 1940s to today). Although, Moser conceptualized that programs have loosely evolved from focusing on welfare (1940s) toward empowerment (1990s), later theorists (see for example Kabeer 1994) have argued that modern programs can also adopt welfare (or efficiency or equity) based approaches. However, we maintain that the motivators build on one another—in that a program motivated by efficiency is also inherently providing welfare, and that a program motivated by

equality would also embody aspects of welfare, efficiency, equity, and empowerment.

Second, we merged the anti-poverty motivator from Moser's initial conceptualization with the efficiency and equity motivators. Emerging as a "toned-down version of equity" in the 1970s, the anti-poverty approach focused on ensuring that poor women increased their productivity. In practice today, the anti-poverty approach has been very similar to the efficiency "smart economics" discourse (Cornwall and Brock, 2005; Chant, 2012).

Third, we swapped the locations of equity and efficiency in the spectrum to better align with continuum from practical gender needs (left) toward strategic gender interests (right). Both Moser (1993) and Coates (1999) have argued that an equity based approach was aligned with strategic gender interests, while an efficiency approach has more instrumental tendencies.

Fourth, we added a fifth motivator highlighting the (re)-emerging discourse around gender-transformative development (MacArthur et al., 2022a). The addition of transformative equality adopts the feminist perspective that empowerment has lost its initial potency, focusing exclusively on individual women, and placing the burden of change on women (Batliwala, 2007; MacArthur et al., 2021). Hence the final motivator of transformative equality goes beyond individual empowerment to reflect a transformed society more broadly.

The motivators operate as a parallel spectrum and within our sensemaking workshops, motivators were often identified by the types of outcomes that programs monitored or evaluated. Notably, drawing on the case study examples, the team identified that the motivator of "equity" can have both instrumental and transformative tendencies, while the other motivators were more clearly aligned with one or the other tendency.

## Potential tendencies in integrating gender in WASH programs

The two tendencies reflect the inclination or propensity of programs integrating gender-considerations (instrumental and transformative). Programs with instrumental tendencies integrate gender considerations primarily to improve other practical outcomes such as WASH coverage, functionality, use, and sustainability—focused more on practical gender needs. As such, programs with instrumental tendencies are more likely to inadvertently "exploit" women or require women's involvement without clarifying if and how women would like to be involved or will benefit from their involvement (Cornwall, 2001). This may also include inadvertently adding to women's triple burden and being unresponsive to backlash they may experience. Alternatively, transformative WASH programs recognize that improvements in practical WASH outcomes can contribute to improvements in strategic gender interests related to agency, societal norms, and structural changes. Gender-transformative WASH programs also recognize the need to focus on power and norms change more broadly to achieve gender and social equality, often with a focus on intersectionality and do-no-harm.

This dichotomy of instrumental and transformative potential aligns with the distinction between practical gender needs and strategic gender interests (Moser, 1993). However, we adopt the



TABLE 2 Program design motivators and potential (adapted from Moser, 1993; Coates, 1999).

Tendency	Motivator	Description
Instrumental potential	Welfare	Welfare motivated approaches focus primarily on physical health outcomes. For example, welfare focused programs incorporate gendered aspects by measuring gender-disaggregated changes in disease burden.
	Efficiency	Efficiency motivated approaches arise from economic and engineering disciplines and seek ways to create more efficient, functional, and sustainable systems. For example, efficiency focused programs incorporate gendered aspects by engaging women as sales agents or technicians because they are more effective at this role than men.
Transformative potential	Equity	Equity motivated approaches focus on ensuring access to and use of improved facilities and services. For example, equity focused programs incorporate gendered aspects by ensuring equal access and use of improved facilities or gender parity on water user committees.
	Empowerment	Empowerment motivated approaches focus on the individual empowerment of a subset of participants. For example, empowerment focused programs mainstream gender by supporting and encouraging women-entrepreneurs to run water or sanitation businesses.
	Transformative equality	Transformative motivated approaches focus on reshaping the norms, systems and structures which perpetuate inequalities. For example, gender-transformative programs may conduct sessions with households to explore opportunities to rebalance decision-making, roles and responsibilities in the household related to WASH.

word “*potential*” responding to critiques that many outcomes do not neatly align with either practical or strategic interests and ideally should span both as both are interconnected (Kabeer, 1994; Wieringa, 1994). As such, we highlight the potential of programs rather than their specific alignment with practical or strategic interests. For example, handwashing campaigns often adopt “good mums” strategies which have an instrumental tendency in contrast to a gender-transformative tendency which would see hand hygiene as an “*entry point to challenging norms and promoting more equitable sharing of household responsibilities among men and boys*” (Cavill and Huggett, 2020, p. 34).

## Illustrative gender-integration case examples

In this section we present the selected intervention examples from literature to illustrate the nuanced differences between gender-insensitive and gender-transformative approaches in WASH. The selected examples represent a small subset of potential examples from literature and practice, noting that many potential examples displayed significant similarities despite being from different decades, countries, and perspectives of gender-integration. We purposely draw heavily on examples from the 1980s and 1990s (van Wijk-Sijbesma, 1985, 1998), to avoid negatively identifying current programs or organizations engaged in WASH sector activities. This use of historical examples additionally highlights that these challenges are not new, but have existed for the last 40 years in the sector. Each section presents examples of the four categories of gender-integration alongside an illustrative discussion of potential activities to guide future practitioners. The three case study topics aim to reflect the breadth of practice within the WASH sector including aspects of: community mobilization, governance, and enterprise development.

### Community mobilization

A common tenet of WASH implementation, community mobilization includes activities such as Community Led Total Sanitation (CLTS), Participatory Hygiene and Sanitation Transformation (PHAST), as well as activities to set the foundation

for community involvement in water system development. Mobilization or promotion activities involve collaborative processes of critical reflection leading to action. Promoters are often community-leaders and volunteers who advocate for improved water, sanitation, and hygiene within their communities. Such activities are closely linked to processes of action research such as Participatory Rapid Appraisal (PRA) and community health initiatives.

Table 3 summarizes how WASH programs focused on community mobilization can align with the four categories of the gender-integration framework. Illustrative examples are drawn from the Pacific, sub-Saharan Africa, and Southeast Asia with a focus on historical case studies.

Gender-transformative community mobilization in WASH contends that diverse community members are best placed to drive, lead, and sustain change in WASH services. Change is catalyzed in community mobilization through facilitation that aims to transform social norms, stimulating and triggering demand for services. Provision of information leads to greater awareness of health risks and benefits from WASH among community members who interpret and act on information based on gendered norms within their social and cultural context. Community-led total sanitation (CLTS) for instance seeks to change behavior by triggering disgust or shame among community members through a facilitated process and sometimes emphasizes the importance of handwashing after critical times (Kar and Chambers, 2008). Community mobilization can reinforce or challenge social norms to trigger and motivate change, which inherently can reinforce or contest existing gender roles. Intersectional attention to gender and social dimensions (such as gender, class, caste, ethnicity, religion and age) in relation to the diversity of the mobilizers and how and with whom the mobilization process is conducted in the community both affect the extent to which a community mobilization activity in WASH is likely to have transformative potential and achieve transformative outcomes.

### WASH governance, service provision, and oversight

Governance of water and sanitation services includes interventions that provide support for different service provision

TABLE 3 Gender-integrated WASH community mobilization approaches.

Category (motivators)	Description	Illustrative example(s)
<b>Gender-insensitive</b> (welfare)	Gender-insensitive mobilization initiatives are not cognizant of gender or social dynamics within communities often leading to stifled outcomes.	<b>Tonga—Community WASH planning.</b> “Local women boycotted a sanitation project when they were excluded wilfully from the discussion of the community survey results and the planning of a village action programme by the men’s committee.” (Fanamanu and Vaipulu, 1966 as cited in van Wijk-Sijbesma, 1985, p. 61)
<b>Gender-sensitive</b> (efficiency and equity)	Gender-sensitive mobilization approaches focus on the inclusion of women as mobilizers, yet do not aim to address strategic gender interests such as women’s mobility. Such programs may leverage women’s traditional advocacy roles as community teachers, health workers and healers.	<b>Cameroon—Community development workers.</b> “In Cameroon, men and women community development workers work on separate programmes. While the women work on community self-improvements, the extension work in connection with piped water supplies is carried out by men promoters only, and not in cooperation with the women’s programme.” (Franklin, 1979 as cited in van Wijk-Sijbesma, 1985, p. 113)
<b>Gender-responsive</b> (empowerment)	Gender-responsive mobilization approaches purposefully aim to empower women and other marginalized individuals to become community advocates.	<b>Guinea Bissau—WASH promoters.</b> “The male promoters were taking up their tasks more easily and the female promoters made little progress. Once the female promoters, after many discussions, became more secure in taking up their tasks the male and female promoters became equally effective”, while the women promoters “were effective in working with women, they needed special training to communicate with village authorities.” (Visscher, 1982 as cited in van Wijk-Sijbesma, 1985, p. 77)
<b>Gender-transformative</b> (transformative equality)	Gender-transformative forms of community mobilization and seek to transform social norms and structures around the roles and responsibilities of women and men in the fabric of the relevant society.	<b>Vietnam—Community gender-WASH monitoring.</b> In this project, a regular monitoring activity was designed for the active exploration of gendered relations through a facilitated community dialogue process to raise community awareness about WASH-related gender roles and relationships and provide opportunities for women and men to “discuss gender relations, and to set their own agendas for change” (Leahy et al., 2017)

modalities, including water and sanitation committees, water user associations and direct local government service provision, or may also focus on local government planning, monitoring and oversight as a service authority. Programs supporting these types of initiatives address gender in relation to concepts of leadership, decision-making, participation, and oversight—moving from tokenistic forms of engagement governed by “*patriarchal culture, scepticism and negative stereotypical assumptions*”, (Mandara et al., 2017, p. 116) toward active and informed participation by diverse community members. As most of the informal management and governance engagement in WASH is unpaid, this can potentially lead to women’s “*triple burden*” (Moser, 1993). More formal governance roles that are paid are more likely to have more positive outcomes for women, but can also lead to backlash and resistance if perceived as threatening to existing traditions and hierarchy, highlighting the importance of do-no-harm within gender-integrated WASH interventions.

Table 4 provides examples of how WASH programs focused on WASH governance, service provision and oversight can align with the four categories of WASH gender-integration. Once again, illustrative examples are drawn from around the globe including South America, sub-Saharan Africa, South Asia, and the Pacific. The examples include aspects of community handpump oversight, water and sanitation committees, and community management groups.

Gender-transformative governance, service provision, and oversight holds that increased substantive participation of women and marginalized groups in WASH institutions leads to better, more appropriate services for diverse user groups. Substantive participation goes beyond nominal or passive participation towards sustained and active engagement (Das, 2014). Governance involves working within existing institutional structures to create more

civic space for women and marginalized groups to engage in decision making on matters that affect their interests (Fauconnier et al., 2018; Imburgia, 2019; Sehring et al., 2022). Support may be provided to address the informal and formal barriers to participation within civic spaces such as committees, forums, platforms or within organizations (Das, 2014). This also requires supporting more diverse governance and leadership at institutional levels to strengthen the linkages between household, community, and institutions (Grant et al., 2021; Worsham et al., 2021; Gonzalez et al., 2022b). For instance, practical strategies such as making meetings more convenient (time and place) may enable women and diverse groups to participate and have a voice in WASH governance processes (Carrard et al., 2013). Civic engagement in WASH governance by diverse user groups can also be a means for advancing strategic gender interests by addressing underlying causes of disadvantage. Ongoing monitoring by users can then in turn reinforce positive feedback loops by emphasizing the accountability of duty bearers for service delivery. By embedding gender relations and interests within institutional structures a gender-transformative governance program assumes that change and the potential for transformation will be enduring.

## WASH-related enterprise development

Enterprise development includes a variety of income generation roles in the private sector for women and men within WASH such as technicians, mechanics, sales agents, and entrepreneurs. Sometimes these types of roles overlap with work in WASH committees. In some cases, paid roles have aimed to leverage traditional gendered roles of women and men—such as men as mechanics and women as community health workers, however more transformative examples have aimed to

TABLE 4 Gender-integrated WASH governance, service provision and oversight approaches.

Category (motivators)	Description	Illustrative example(s)
<b>Gender-insensitive</b> (welfare)	Gender-insensitive governance approaches are not cognizant of gender or social dynamics and often only engage with men as traditional leaders.	<b>Peru—Handpump oversight.</b> Women were appointed as hand pump overseers without training or orientation. <i>“The pump was then padlocked, with a third housewife holding the key. This resulted in much intravillage conflict and finally to the breakage and removal of the pump.”</i> (Wellin, 1966 as cited in van Wijk-Sijbesma, 1985, p. 68)
<b>Gender-sensitive</b> (efficiency and equity)	Gender-sensitive governance approaches focus on increasing the participation of women in leadership and committees, often through gender quotas and gender parity. These approaches rely on evidence that the involvement of women can increase the sustainability and performance of water systems (Mommen et al., 2017)	<b>India—Water Committees.</b> <i>“Often these women did not know they were elected [to water user committees]”</i> (Stanbury, 1984) as cited in van Wijk-Sijbesma, 1985, p. 58) <b>Kenya—Water Committees.</b> Although women were less likely to be in governance leadership or contribute time outside of meetings, committee members believed that <i>“women solve issues and have a cooling effect – they help lead to a consensus among the committee.”</i> (Hannah et al., 2021)
<b>Gender-responsive</b> (empowerment)	Gender-responsive governance approaches purposefully aim to strengthen the empowering participation of women in leadership, technical and decision-making roles. This often requires specialized training in <i>“leadership skills, confidence building and communication with those they represent”</i> (van Wijk-Sijbesma, 1985, p. 60)	<b>Ghana—Handpump Committees.</b> Specialized women’s technical training within committees led to women being <i>“enlightened and confident that they could detect fraudulent claims by pump mechanics.”</i> (Sam and Todd, 2020, p. 364) <b>India—Community Water and Sanitation Committees.</b> Committees were required to be made up of one-third women, which led to changes in women’s leadership and social solidarity, yet was restricted by social norms around mobility and gender roles, and led to cases of increased intra-household conflict. (Das, 2014)
<b>Gender-transformative</b> (transformative equality)	Gender-transformative governance approaches aim to transform gender dynamics related to traditional gendered societal roles. Transformative governance support focuses on both women and men and actively confronts norms that are supportive of violence against women.	<b>Fiji—Community Group.</b> <i>“There has been more collaboration amongst people, men and women talk properly together and listen. Men are able to listen to the women more compared to the past . . . The norm is in a village meeting the men/leaders would speak and tell people what to do – it was one-way communication and decision-making. The [project] helped us to listen together and we started to value the discussion and sharing of ideas before arriving at a decision.”</i> (Willets et al., 2009, 2013; as cited in Carrard et al., 2013, p. 325)

transform notions of masculine and feminine work, such as men in care work and women in technical roles. Once again, the four types of gender-integration are not mutually exclusive and may be overlapping.

Table 5 provides examples of how programs focused on enterprise development in WASH can align with the four categories of the WASH gender-integration framework. The bulk of potential examples emerge from South America, South Asia and Southeast Asia highlighting the lack of examples of gender-integrated enterprise development in sub-Saharan Africa. The gender-sensitive example is hypothetical and drawn on author’s experiences as to not negatively identify any one organization or program. Additionally, these examples are more recent and there is less historical literature to draw on in WASH enterprise development (Gero et al., 2014).

Gender-transformative enterprise development seeks to realize opportunities for women’s empowerment by addressing barriers to participation in overall market systems. Women’s ability to participate in the economy and public sphere is shaped at multiple levels by domestic, household, community, and institutional norms (Carrard et al., 2013). By addressing these norms systematically women can benefit from participation in WASH enterprises as an entry point for broader change (Grant et al., 2019; Indarti et al., 2019; Soeters et al., 2020). Adopting parallel strategies to engage men and women in WASH enterprise development can support women’s participation; for instance, by initiating dialogue on paid and unpaid labor and gender roles (Soeters et al., 2020). Like other strategies the potential for unintended consequences such as backlash must be managed carefully by embedding do-no-harm approaches into enterprise development and working

closely and intentionally with women’s rightsholder organizations (Water for Women, 2022a). Women’s entrepreneurship can also be motivated through financial benefits from business development thus reinforcing the value and transformative potential of WASH enterprises.

## Discussion

This paper has documented the results of three sensemaking workshops in the development of a conceptual model and identification of a set of illustrative case studies. The examples of gender-transformative WASH programming noted above and in emerging literature confirm that WASH can provide an entry point for wider gender-transformative change with synergistic benefits to both WASH and societal transformations. Such a gender-transformative approach to WASH provides a framework for leaving no one behind, increasing diversity amongst those overseeing, providing, and benefiting from WASH services whilst concurrently supporting greater gender equality. These examples also offer insight into the complexity of achieving multiple and demanding objectives, particularly in confined program timeframes.

Drawing on the purposed framework and illustrative cases, this article proposes the following working definition: A gender-transformative approach to WASH aims to transform gender norms, structures, and dynamics both within and beyond WASH-related behaviors, activities and services in households, communities, and institutions. As such, gender-transformative

TABLE 5 Gender-integrated WASH-related enterprise development approaches.

Category (motivators)	Description	Illustrative example(s)
<b>Gender-insensitive</b> (welfare)	Gender-insensitive enterprises projects either: (1) engage only with men, because men are the traditional caretakers of technological systems; or (2) uncritically engage with individuals without being cognizant of the gender or social dynamics of paid work in many cultural contexts.	<b>Nepal—Sanitation and drinking water.</b> In this project, women were trained on non-technical aspects, while men received technical training. A female participant reflected: “ <i>This is why we have been demotivated to hold any meetings for the last couple of months and to take any initiatives yet to resolve the problem of malfunctioning tube-wells which is increasing over the years</i> ” (Moore et al., 2015)
<b>Gender-sensitive</b> (efficiency and equity)	Gender-sensitive enterprise projects primarily engage only with women with the goal of increasing the effectiveness and equity of enterprise reach.	<b>South Asia—Last mile service delivery.</b> This project purposefully recruited women latrine sales agents as they were deemed more effective at delivering sales pitches to rural communities.
<b>Gender-responsive</b> (empowerment)	Gender-responsive enterprises also primarily focus on women, but explicitly aim to address strategic gender interests and empower women. Aspects such as leadership, negotiation, access to finance and business skills are common training foci (Indarti et al., 2019). Other examples include latrine construction masons (Rautanen and Baaniya, 2008), piped water or sanitation entrepreneurs (Gero et al., 2014; Grant et al., 2019), and sales agents (MacArthur, 2018; iDE, 2019).	<b>Brazil—Cistern builders.</b> In this project, “ <i>women cistern (rainwater tank) builders benefit[ed] not only from having access to water, but from better sources of income, improved status in the community and inclusion in new networks</i> ” (de Moraes and Rocha, 2013, p. 168).
<b>Gender-transformative</b> (transformative equality)	Gender-transformative enterprises aim to transform gender dynamics related to gender roles and leadership. This approach often adapts parallel strategies to support women and men both separately and together.	<b>Cambodia—Sanitation marketing.</b> In this project, husband and wife couples were trained together on business management skills related to running their sanitation enterprises. The team actively avoided the phrase “ <i>entrepreneur’s wife</i> ”, instead aiming to see partnership arrangements and recognize overlooked women’s work in businesses (iDE, 2020).

WASH pursues gender equality and WASH outcomes simultaneously, in mutually reinforcing ways.

We now discuss key considerations for organizations seeking a gender-transformative approach as critical reflections from the first sensemaking workshop. The considerations align with five framing questions for practitioner teams interested in integrating gender-transformative approaches (MacArthur et al., 2022a): *why, who, what, where* and *how*.

Increasingly research and practical experience points to the importance of self-awareness and organizational culture when grappling with questions for gendered norms and power structures (Cavill et al., 2020). That is, an individual and collective sense of, and commitment to “*why*” a gender-transformative approach is important. Such reflexivity acknowledges that transformation must begin within individuals and adopts a purposeful objective of social and gender-transformations (Heijnen and van Wijk-Sijbesma, 1993; Cavill et al., 2020; MacArthur et al., 2022a). This requires a collective agreement that WASH programming can and should influence gender norms, dynamics, and structures. As such, a foundational step for WASH professionals and organizations is to critically reflect on our own perspectives and practices. Tools such as Water for Women’s Gender Equality and Social Inclusion Toward Transformation Self-Assessment Tool (Mott et al., 2021) can support awareness and identify priorities for action in programming and organizational systems. Importantly, transformative programming is difficult to realize without a transformative culture within the organization (Cavill et al., 2020; Water for Women, 2022a). Collaboration with rights holders’ organizations can support this kind of transformation, ensuring WASH efforts are informed by lived experience and capacity building on appropriate pathways for change.

Second, a gender-transformative approach requires actively partnering with diverse genders and integrating intersectional perspectives, involving attention to “*who*” is involved. Additionally, a transformative approach actively aims to engage men and boys rather than solely focusing on women (Cavill et al., 2018; MacArthur et al., 2020). The active engagement of gendered or marginalized groups separately and together, is the practice of gender-synchronization (Greene and Levack, 2010). This synchronizing strategy can also be adapted to addressing plural forms of marginality and marginalization from intersecting forms of oppression (Collins, 2015; Soeters et al., 2019).

Next, the focus of gender-transformative WASH—“*what*” to address—must span practical and strategic interests rather than assuming that meeting practical needs is a precursor for engaging with strategic interests. One example is that of gender-based violence. A gender-transformative approach recognizes the social acceptance of gender-based violence as a barrier to societal transformation, and pro-actively plays a role in addressing this while ensuring a do no harm approach. While the WASH sector has historically explored themes of gender-based violence from an infrastructure perspective—ensuring safety and privacy in design—there has been a more recent shift to focusing on shifting attitudes and norms that support gender-based violence (Sommer et al., 2015; Pommells et al., 2018). For example, within the Water for Women Fund, some projects have supported the development and socialization of violence referral pathways in collaboration with rights holder groups through their community WASH activities.

Fourth, it is important to recognize that gender-sensitive, responsive, and transformative approaches are all valuable in the movement toward more equal futures for all. The question of “*where*” an intervention focuses, whether at specific or systemic



level needs to be taken into account. Program teams and designers should be realistic and even cautious in considering the ability for small-scale (or short-term) interventions with limited resources to address systemic changes. Systems change requires approaches that scale up, out and deep (Water for Women, 2022b). As such different interventions will inherently have different objectives and addressing WASH needs varies in terms of required timeframes and scales. Scaling up aims to impact laws and policies, scaling out aims to replicate and disseminate best practice, and scaling deep aims to impact societal and cultural norms (Moore et al., 2015). In some cases, programs with limited resources and support may be better suited to adopt gender-sensitive solutions avoiding potential backlash and harm. As such, all gender-integrated interventions should articulate and implement a robust do-no-harm approach, which acknowledges that resistance and backlash is inevitable when prevailing power structures are challenged, and works to intentionally mitigate these risks (Water for Women, 2019a).

Finally, gender-transformative approaches require more nuanced and additional funding, planning, and assessment modalities which promote reflective and iterative approaches (MacArthur et al., 2022a), and thus significant attention to the “how”. This is required for instance, for the intentional, meaningful, and reciprocal engagement with rightsholder organizations to improve WASH and gender equality outcomes as well as ensuring that intersecting marginalizations such as disability, are integrated into gender-transformative approaches. An increased focus on norms changes and addressing power and privilege furthers the importance of iterative and flexible approaches such as action research. Program structures must encourage practitioners to question the status quo and reveal and interrogate unintended negative effects (Water for Women, 2022b).

As a minimum, all programs, no matter whether they aim to be sensitive, responsive, or transformative, require methods to monitor and reflect on the resultant gender and social outcomes, both intended and unintended. Without this, it is not possible to know whether the envisaged outcomes have been achieved or whether adverse outcomes have also occurred. There is an emerging body of literature and tools to support both quantitative and qualitative measurement of gender outcomes associated with WASH programs (Carrard et al., 2013, 2022; Gonzalez et al., 2022a; MacArthur et al., 2022b,c).

## Future research priorities

While this article has aimed to introduce gender-transformative WASH into global scholarship and practice, there is still much to be done to refine, expand and clarify the concept and its use by practitioners.

For example, this article has limited its application of the gender-integration framework to three particular program types. Future research could expand the spectrum’s applicability to other integral WASH interventions related to menstrual hygiene management and handwashing, which both offer significant entry points to address gender norms (Cavill et al., 2018; Cavill and Huggett, 2020). These areas were included within our initial database, yet we found a lack of documented evidence. As such, these types of WASH activities are underrepresented in

our illustrative examples. Further work could beneficially explore how the spectrum can be applied to support menstrual hygiene programs that go beyond gender specific to also being gender-transformative (Mahon et al., 2015; Cavill et al., 2018), and drive handwashing interventions that achieve critical hygiene outcomes while also addressing social norms (Cavill and Huggett, 2020).

Additionally, the reflected framework could be applied and refined in further contexts and sectors with diverse actors and a range of program types. In particular, future work could explore how the framework could be further developed to (1) assess and drive transformative programming, (2) clarify ways to communicate the underlying concepts, (3) promote critical engagement, and (4) identify opportunities to create meaningful translations and visual formats to promote its uptake.

While the framework and examples were focused on highlighting the experience of the Water for Women Fund’s adoption of gender-transformative thinking, the critical reflections from the inquiry have relevance and value in other sectors. For example, our problematization of the term “gender-blind” or the recognition that gender neutral interventions have a useful do-no-harm value could be adopted by other practitioners in food security and reproductive health.

Lastly, future work could explore how practitioners engage with and use the framework to strengthen gender-WASH programming and to support potential gender-transformative initiatives. In particular, the research team is curious to understand how the multi-level framing resonates with practitioners from a variety of disciplinary backgrounds and how the motivators and potentials clarify complex gender-terminology for less familiar audiences.

## Conclusions

A gender-transformative approach to WASH aims to transform harmful gender dynamics and norms (interpersonal connections and relationships) and structures (societal rules and systems) within, through and alongside WASH interventions. Gender-transformative WASH aims to synergistically both address gender and social inequalities and improve WASH outcomes.

The paper proposed a multi-level gender-integration framework applied to WASH programming -contexts to support practitioners in the thoughtful application of more transformative policies, programs, and projects. The conceptual model defined a gender spectrum in relation to gender-insensitive, gender-sensitive, gender-responsive and gender-transformative types, with relevant motivators and potentials. Using the framework, the paper synthesized experiences from gender-WASH literature and the Water for Women fund through the lens of gender-transformative approaches in international development. Future practice can benefit from applying this framework in the design, implementation, monitoring, and assessment of WASH with a goal of fostering transformative potential.

## Data availability statement

The original contributions presented in the study are included in the article/Supplementary material, further inquiries can be directed to the corresponding author.

## Author contributions

JMa, NC, and JW: conceptualization. JMa and NC: methodology and writing—original draft preparation. JMa, NC, JMo, SR, MS, and JW: collaborative sensemaking, data curation, and writing—review and editing. All authors contributed to the article and approved the submitted version.

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## Conflict of interest

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## Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/frwa.2023.1090002/full#supplementary-material>

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# When vulnerabilities are exploited—The role of sextortion in the WASH sector in Bangladesh

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It has long been acknowledged that many aspects of Water, Sanitation, and Hygiene (WASH) are highly gendered and that women face an increased risk of violence when access to WASH services is not adequate. However, not enough studies explore where these incidents of violence occur or document the different forms of violence. This research paper will add to the newly emerging research on sextortion as a form of violence that women and girls encounter disproportionately in accessing WASH. This form of violence that takes place at the intersection of corruption and sexual violence has dire social, economic and health consequences, yet little is known as of what increases vulnerability to sextortion. Analyzing original data from a standardized survey with adult women ( $n = 1,200$ ), interviews ( $n = 21$ ) and focus group discussions ( $n = 5$ ), this paper examines the factors that make women vulnerable to sextortion in accessing WASH services. The study was conducted in 2 rural and 2 urban areas in Bangladesh between September and December 2021. The analysis shows that those women living in poverty, in water insecure households and in rural areas are especially vulnerable to experiencing sextortion. The research also shows that the vulnerability factors, while overlapping are not the same as those making women vulnerable to experiencing sexual and gender-based violence, highlighting the importance of studying sextortion separately. The findings contribute to an emerging evidence-base around sextortion, which remains an understudied phenomenon posing an obstacle to the achievement of safe access to water and sanitation for all.

## KEYWORDS

sextortion, wash, sexual and gender-based violence, Bangladesh, corruption

## 1. Introduction

Gender plays an important role in understanding violence in the Water, Sanitation and Hygiene (WASH) sector. Women have been shown to face an increased risk of violence when access to WASH services is not adequate (Hirve et al., 2014; Gonsalves et al., 2015; Jadhav et al., 2016; Kulkarni et al., 2017; Pommells et al., 2018), however more research is still needed to understand where these incidents of violence occur and what forms of violence women face (Sommer et al., 2015). This paper is exploring a form of violence that has only recently been receiving more attention, sexual extortion, or sextortion. Sextortion is a form of corruption, where the body, rather than money or goods are the payment of the bribe (Merkle, 2020) and takes place at the intersection of corruption and sexual violence.<sup>1</sup>

1 World Health Organization (n.d.) defines: "Sexual violence is any sexual act, attempt to obtain a sexual act, or other act directed against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting. It includes rape, defined as the physically forced or otherwise coerced penetration of the vulva or anus with a penis, other body part or object."

Only few studies have addressed how and where individuals are vulnerable to sextortion (Merkle et al., 2017; Eldén et al., 2020; Feigenblatt, 2020; Caarten et al., 2022), however, they all highlight that, while sextortion can happen to anyone, women are disproportionately affected by this form of corruption. Yet, much more research is still needed to identify which factors increase women's vulnerability to sextortion, particularly in sectors of public life, where women are especially at risk of facing violence.

Corruption research has long highlighted that women and men experience corruption differently in accessing different services, where "[s]ystematic discrimination against women produces social dynamics that generate power imbalances and facilitate corruption, including gendered forms of corruption, while also making it harder for women victims of corruption to seek justice for corrupt abuses of power" (Transparency International and Equal Rights Trust, 2021, p. 22). Yet, surprisingly little work has looked in more detail at providing case studies discussing vulnerabilities in specific sectors. A sector that is not only often plagued by corruption but is also highly gendered is the WASH sector (Zinnbauer and Dobson, 2008; Stålgren, 2015; Pommells et al., 2018). Therefore, this paper will take a closer look at the vulnerability of women to a highly gendered form of corruption, sextortion, in the WASH sector in selected areas of Bangladesh. Previous studies in Kenya, South Africa, and Columbia highlight that women and girls face high risks of encountering sextortion (UNDP-SIWI Water Governance Facility, 2017; KEWASNET and ANEW, 2020), hence the data collected for this paper, exclusively focused on the experience of women.

Sextortion is defined as "the abuse of power to obtain a sexual favor" (IAWJ, 2012, p. 9). In addition to the sexual component, there are three distinct features that need to be present for the corruption component in sextortion: "abuse of authority; a quid pro quo exchange; and psychological coercion rather than physical force" (IAWJ, 2012, p. 9). On the latter, the sexual component in sextortion does not have to involve sexual intercourse but can also comprise acts such as exposing private body parts or posing for sexual photographs (IAWJ, 2012). It is differentiated from rape or sexual assault in that it involves a "quid pro quo" exchange in which the victim gives a sexual favor to obtain some benefit that the person in authority can provide or withhold. Importantly, sextortion happens in a context of psychological coercion, that is, the perpetrator exerts coercive pressure, rather than consent being given freely. Just as power over someone is a crucial element of all sexual and gender-based violence, it is also a condition of corruption, and in particular, sextortion (IAWJ, 2012). "Much of the gendered experience of corruption in the water supply sector is tainted by the feeling of being powerless in relation to an authority upon which one relies for the fulfillment of a basic need." (UNDP-SIWI Water Governance Facility, 2017, p. 5).

Sextortion, includes both instances, where the sexual activity was demanded by an individual in a position of power and where sex or sexual activity are initiated by a person dependent on an access to a service which they fear not to otherwise be able to obtain. However, the latter should not be misinterpreted as acts that women gave consent to. Rather, the power imbalances in these exchanges lead to "coerced consent" (Eldén et al., 2020). Since water is a life-sustaining resource, those in power know that the

person in need of access is in a desperate situation and may be willing to go to extreme lengths to secure access. This is particularly important to remember also when discussing the policy responses to sextortion cases.

Previous studies found that sextortion in access to WASH services is a part of the lived reality of women in many places. A study in Bogotá, Colombia, and Johannesburg, South Africa, found frequent cases of sextortion. Women were demanded or offered sexual favors when they needed to access resources or services, for example to get water delivered, in return for intentionally misreading the water meter or not turning off the water supply (UNDP-SIWI Water Governance Facility, 2017). Similarly, a study in Kibera Project, Kenya found that sextortion was fairly entrenched in the study area with about 2 respondents in 10 reporting having heard about it (KEWASNET and ANEW, 2020, p. 24). Pommells et al. (2018), looking at case studies in East Africa, document cases of sextortion, such as skipping ahead in water queues and offering sex for water when users cannot pay the fees.

This study will add to this emerging literature by analyzing factors that make women vulnerable to experiencing sextortion when accessing WASH services in selected regions of Bangladesh. To get a better understanding of what makes women vulnerable to violence it is important to understand that such an analysis needs to go beyond simply looking at the sex of an individual and recognize that gender is a "complex, multilevel cultural construct that determines the meanings of being female or male in a particular situational context" (Russo and Pirlott, 2006, p. 180). Therefore, this paper assesses which factors, such as physical ability, and class intersect with gender and how they might play a role in determining which women do or do not experience sextortion when accessing WASH services. It has been well-established that inequalities in accessing WASH services for women and girls lead to negative health consequences (Pouramin et al., 2020) and sextortion likely exacerbates these inequalities even further. In addition, it has been shown that sextortion, similar to sexual and gender-based violence, has detrimental effects on women's economic, psychological and physical wellbeing (Feigenblatt, 2020; Caarten et al., 2022). Therefore, understanding and preventing sextortion in WASH can be expected to lead to an improvement in the wellbeing of women and girls accessing those facilities.

Bangladesh was chosen as a case study for this research for several reasons. As the country experiences both high levels of corruption and sexual and gender-based violence, it can be hypothesized that sextortion, which lies at the intersection of the two also occurs. The country is faring poorly on Transparency International's (TI) Corruption Perception Index (ranked 147 out of 180 countries in 2021) and Transparency International Bangladesh (2020) considers corruption as "one of the main impediments to establish women's rights" (para. 1). The Global Corruption Barometer 2020 reported that 24% of public service users and 22% of those using utilities paid a bribe in the previous 12 months (Transparency International, 2020). Bangladesh also experiences challenges with regards to access to WASH services, with only 59% of the country having safely managed access to drinking water, 39% safely managed access to sanitation, and 58% basic access to hygiene (WHO and UNICEF, 2021). In a regional

comparison, Bangladesh is faring worse than most of its regional neighbors in both sanitation and hygiene, and scores in the middle field for water (WHO and UNICEF, 2021). Further, the decision making on WASH is dominated by men (Livani et al., 2021). A 2017 study, for example, shows that in the south-west of the country, only 20 percent of representatives in water management organizations are women and typically they are not present in high level positions (Buisson et al., 2017). In addition, only 6 percent of the workforce in water and sanitation utilities are women (World Bank, 2019). Sexual and gender-based violence (GBV) is also a serious concern in the country (UNDP Bangladesh and PTIB, 2022). The organization ODHAKAR has been compiling data on different forms of GBV, however, the resulting numbers are likely only a small fraction of the actual cases. The organization's data on average identifies over 800 rapes annually in the twenty-year period between 2001 and 2021. For the past 10 years (2011–2021), they also collected information on over 3,000 girls reporting to have been sexually harassed and stalked (Odhiakar | Statistics on Violence against Women<sup>2</sup>). Young, unmarried women are especially exposed to sexual harassment (Camellia et al., 2012; Nahar et al., 2013). The World Bank in 2013 estimated that more than 50% of women in rural Bangladesh experience domestic violence regularly, and this number is likely an underestimation (World Bank, 2013). A recent study also shows that open defecation is significantly associated with experiencing sexual violence by partners in the home (Murshid, 2022).

Male violence against women is also closely linked to existing gender and social norms. Fattah and Camellia (2020, p. 784) found that the “majority of both men and women in the rural areas of Bangladesh adhere to hegemonic gender norms and attitudes that justify, promote, and perpetuate violence against women. These norms, beliefs, and attitudes are routinely and systematically translated into practice by men and are justified by them to exert control over women's body through the use of violence and simultaneous victim blaming”. The authors find that women also share similar beliefs, norms and attitudes. When researching sextortion, it is essential to understand how these norms play a role in allowing sextortion to persist and at the same time prevent victims from reporting. In addition, significant issues of shame and stigma still prevent women from reporting violence both inside and outside the home (Kishor and Johnson, 2005; World Health Organization, 2005). A report by Humans Rights Watch (2020) for example, shows how survivors of abuse by husbands or in-laws rarely report the abuse as it is considered a private matter, and highlights how the country is lacking robust services and reporting mechanisms for survivors of GBV.

This paper goes beyond the existing studies of sextortion in WASH by not only mapping where and how frequently women are exposed to sextortion, but also by analyzing which factors make women more vulnerable to experiencing sextortion. Therefore, the results of the analysis could provide important insights for potential policy changes.

The paper is organized as follows. The next section will present the data collected and the method of analysis. The paper will then

move to discussing the different factors of vulnerability and end with concluding remarks.

## 2. Materials and methods

The data presented in this paper has been collected by the Water Integrity Network in collaboration with local civil society organizations. The analysis is based on a mixed methods approach. A standardized survey was conducted with 1,200 respondents. A stratified purposeful sampling (Sandelowski, 2000) approach was applied to select respondents, which involved a prior identification of water stressed areas and then selection of respondents using the random walk method in those areas. To enable regional comparisons on sextortion prevalence, 300 responses were obtained in each study area. The sample size was determined taking into account available financial resources for data collection and in the absence of a baseline incidence for the outcome of interest, i.e., sextortion in access to WASH services. In addition, 5 focus group discussions were conducted with women. For the focus group discussions, convenience sampling was utilized by recruiting volunteers among the respondents of the standard survey. Moreover, key informant interviews were conducted with 21 respondents who were selected through purposeful sampling. A set of criteria was applied to select participants for the key informant interviews, which included professional affiliation with various water and sanitation sector stakeholder groups in the study areas and willingness to provide insights from the service provision perspective.

The data was collected between September and December, 2021. All phases of primary data collection, including enumerator training, supervision, random sampling, were conducted by two local organizations, the Development Organization of the Rural Poor (DORP) and Change Initiative (CI). Data was collected in four areas of Bangladesh spread across the three administrative districts: Satkhira (south west), Bandarban (south-east), and Dhaka (a central district, which is sub-divided into Dhaka North City Corporation and Dhaka South City Corporation; Figure 1). Bandarban and Satkhira are rural areas that are both water-stressed. Bandarban is a hilly region with a low groundwater table, whereas Satkhira is a coastal area where saline water is predominantly available (Ahmed et al., 2018; Chakma et al., 2021). In the two urban district of Dhaka, the survey was conducted in two slum areas: Korail, located in the Dhaka North City Corporation, and Rasulpur, located in the Dhaka South City Corporation. In the context of urbanization, these slums have been growing in population size over the last three decades, whilst the provision of services such as access to safe drinking water and basic toilet facilities has not kept up. Korail covers approximately 100 acres and is home to more than 50,000 residents, most of whom live under the poverty line (BRAC, 2014). A major eviction drive around Dhaka in 2007–2008 saw many slum dwellers relocate to Korail, further deteriorating the living conditions and service access there. Rasulpur is located within the Kamrangirchar, peninsula area hosting one of the biggest slum areas in Dhaka South (Banglapedia, 2021). WASH facilities in

<sup>2</sup> Available online at: <http://odhakar.org/statistics/statistics-on-violence-against-women/> (Retrieved May 1, 2022).

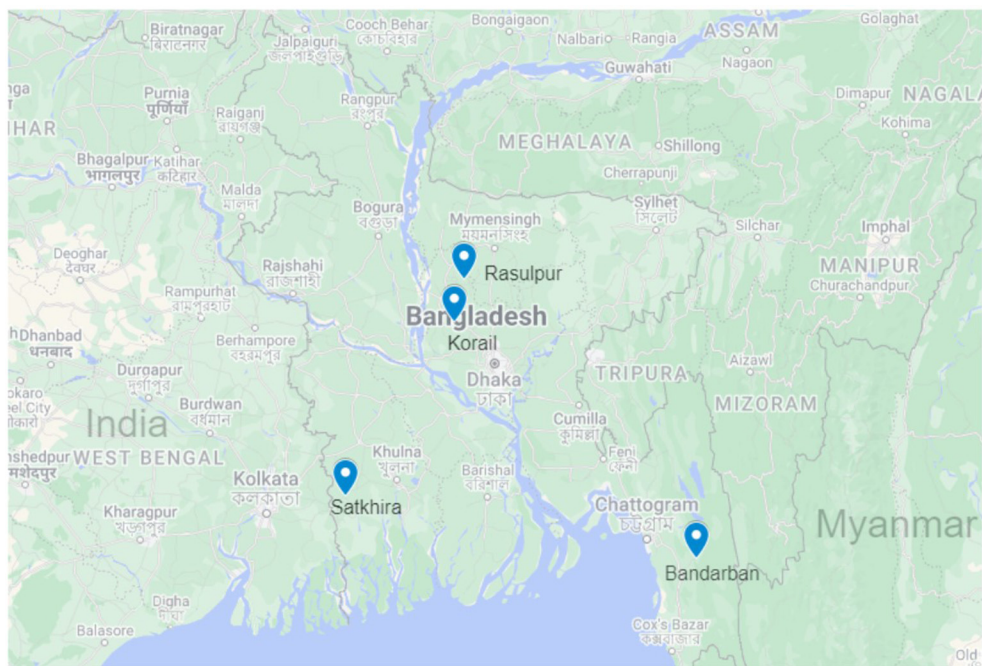


FIGURE 1  
Overview of study areas. Source: Google Maps 2022.

the area are poor and provide only limited access to safe water and sanitation.

As previous studies have shown that women are disproportionately affected by sextortion, both in the water and sanitation sector, and in other contexts (UNDP-SIWI Water Governance Facility, 2017; Feigenblatt, 2020), only women were interviewed.<sup>3</sup> Given the sensitive nature of the topic of study, only women over 18 were included in the data collection. The focus groups had between 4 and 13 participants. Data collection using the standardized survey was carried out using both mobile devices and paper questionnaires, which were then manually entered into a central database. The standardized survey comprised both general questions about the profile and experience of the respondent and their household members, as well as specific question about the respondent's experience with corruption sexual and gender-based violence, and sextortion, if any.

In order to understand where sextortion occurs, one also needs to understand where and when sexual and gender-based violence occurs. Therefore, the survey included question about different forms of SGBV, four of which were identified to constitute acts of sextortion (Table 1).

The interviews and focus groups were not recorded but the interviewers took detailed notes and wrote summary reports for each interview and focus group. These summary reports were then analyzed using Atlas.ti. The decision to not record was made

<sup>3</sup> This paper focuses solely on the experiences of women, as previous research has shown that they are disproportionately affected by it (Merkle et al., 2017; Eldén et al., 2020; Feigenblatt, 2020), however, this does not mean that men and non-binary individuals are not experiencing sextortion. This should be taken into consideration for future studies.

TABLE 1 Forms of sextortion and sexual and gender-based violence included in the survey.

Four forms of sextortion	Other forms of SGBV
<ul style="list-style-type: none"><li>Someone demanded sex or sexual activity* in exchange for (access to) water/toilet/bathing facilities</li><li>Someone demanded sex or sexual activity as payment for debt owed for water/toilet/bathing facilities</li><li>The respondent offered sex or sexual activity in exchange for water/toilet/bathing facilities</li><li>The respondent offered sex or sexual activity as payment for debt owed for water/toilet/bathing facilities</li></ul> <p>* e.g. kissing, fondling/groping, touching private parts</p>	<ul style="list-style-type: none"><li>Someone forced the respondent into sexual intercourse by holding them down or hurting them in some way</li><li>Someone attempted to force the respondent into sexual intercourse by holding them down or hurting them in some way</li><li>Someone groped, fondled, or kissed the respondent</li><li>Someone touched the respondent's private parts</li><li>Someone made suggestive remarks, gestures, jokes or written words of sexual nature</li></ul>

in consultation with the local organizations who were worried that respondents would refuse to answer when recorded given the sensitive and criminal nature of the topic.

When interpreting the data collected in the survey it is important to remember that sextortion is a form of corruption that is very difficult to research “due to the social taboo frequently associated with sex crimes and the stigmatization of victims who speak up” (UNODC, 2020, p. 13). In addition, as sextortion is transactional in nature, survivors often are wrongly portrayed as willing participants, leading to further stigmatization and underreporting. Therefore, the number of sextortion incidents represented in this research paper does likely not cover the full extent of the phenomena.



Though water-sector specific data on sextortion is not widely available, based on similar studies on the phenomenon in the Middle East and North Africa, incidences of sextortion when accessing government services have been found to range from 23% (Lebanon) to 13% (Jordan). These rates are similar in Latin America and the Caribbean, where sextortion experiences have ranged between 30% of people in Barbados and 14% in Panama (Eldén et al., 2020). In 2020, 9% of respondents for Transparency International's Global Corruption Barometer Survey in Bangladesh had either experienced sextortion or knew someone who did (Vrushni, 2020).

While the WASH sector is a small part of government services and benefits offered to citizens across the world, it is a crucial one. We therefore expect that rates of sextortion in this sector would be within a similar range in the populations of developing countries. A *post-hoc* power calculation for the one-sample study where the response variable is dichotomous, where the estimated population incidence is 20%, the study group incidence is 4.4%, type I error tolerance is 0.05, and sample  $n = 1,200$  yields a statistical power of 100%. Given the exploratory nature of the study, along with the sensitive nature of the topic, we collected a sample of convenience while maintaining a rural-urban balance (approx. 50% of respondents for each) in the sample. Table 2 displays the descriptive statistics for the key variables considered in the study comparing respondents that experienced sextortion and those that did not.

To understand which factors, play a role in making women more vulnerable to experiencing sextortion in the WASH sector, we identify the respondent characteristics which increase the likelihood of experiencing a sextortion event. To this effect, we run a probit model where the response variable is binary taking the value of 1 when the respondent has suffered one of the sextortion instances outlined in Table 1, and 0 otherwise. We run a multivariate probit model in order to control for various demographic characteristics, such as age, and isolate the effects that three forms of vulnerability have on the likelihood of sextortion in the WASH sector in Bangladesh. We consider the following equation:

$$\hat{y} = \beta_0 + \beta_1 \text{poverty.score} + \beta_2 \text{hwise.score} + \beta_3 \text{literacy} + \beta_4 \text{impairment} + \beta_5 : x_5 : n + \epsilon$$

Where:

- *poverty.score* is a continuous variable [0:100] constructed using a variation of the Lived Poverty Index and serves as a proxy for income,
- *hwise.score* is a continuous variable [0:36] which is an indicator of water insecurity measured using the Household Water Insecurity Experiences (ter) Scale,
- *literacy* is a binary variable which is 1 if the respondent can read and 0 otherwise,
- *impairment* is a binary variable which is 1 if the respondent reported having a visual, hearing, mobility/physical, mental, speech, or other impairment and 0 otherwise.

Other demographic control variables ( $x_5:n$ ) include age, marital status, and urban region.

Water insecurity in the 4 weeks prior to the survey date was measured using the Household Water Insecurity Experiences (HWISE) Scale (Young et al., 2019). The HWISE Scale is measured through 12 questions on experiences of water availability, accessibility, use, acceptability, and reliability. Each question contains four response options (never = 0, rarely = 1, sometimes = 2, often/always = 3) that are summed together at the household level. The scores can range between 0 and 36. The households of respondents with a HWISE Scale score of 12 or higher are considered water insecure.

The model was then used to test the following hypothesis

- H1: Respondents from high poverty score households are more likely to endure sextortion events.
- H2: Respondents from households with higher water vulnerability are more likely to endure sextortion events.
- H3: Respondents who are not literate are more likely to endure sextortion events.
- H4: Respondents who have any form of impairment are more likely to endure sextortion events.

The study is exploratory in nature and has some clear limitations in the methodological approach and the validity of the findings. The stratified purposeful sampling is statistically non-representative, which means that the findings of this study are not generalizable. However, our data still provides evidence for the existence of the problem and a clear indication which factors play a role in creating vulnerabilities to sextortion. The interviews and focus groups could not be recorded which limited the how the data could be used for analysis. As only summary reports were available, no direct quotes are used to support the findings of the quantitative analysis and the summaries likely do not reflect the same nuance as recordings. Given the sensitivity of the topic and the vulnerability of the victims it is important that future studies do include the voices of those that experience sextortion.

### 3. Results and discussion

Most of the households covered were male-headed, with three quarters of respondents (74.8%) reporting to be spouses of the head of household. The average household size was 5 and respondents came from a variety of ethnicities (Bengali, Chakma, Marma, Mru, Tanchangya, and Tripura). The majority (60.6%) of respondents rely on public taps/standpipes as their primary source of water, followed by boreholes (17.2%). Only 1% of respondents has direct access to water piped into their compound, yard, plot or dwelling. Some access water primarily through protected springs and wells (5.6%) or water piped to a neighbor's house (2%). The remainder of respondents (13.6%) indicated relying on unprotected sources, which include unprotected wells and springs, rainwater collection and surface water. Nevertheless, more than half of respondents (56.6%) indicate having access to water close to their homes, reporting it takes less than 5 min to walk to and from the water source (excluding queuing times). Queuing times were reported to be below 5 min by two thirds of respondents (68.6%).

The survey also shows that women regularly face violence when accessing WASH services. Roughly one third (29.4%) of

TABLE 2 Descriptive statistics of key variables.

Sextortion	Variable	Level	<i>n</i>	Perc	Mean
0			1,147	95.6	NA
1			53	4.4	NA
0	Age	18–25 years old	266	22.2	NA
0	Age	26–35 years old	842	70.2	NA
0	Age	51 or above	39	3.2	NA
1	Age	18–25 years old	4	0.3	NA
1	Age	26–35 years old	49	4.1	NA
0	Urban	Rural	576	48	NA
0	Urban	Urban	571	47.6	NA
1	Urban	Rural	24	2	NA
1	Urban	Urban	29	2.4	NA
0	Impaired	Impaired	190	15.8	NA
0	Impaired	Not impaired	957	79.8	NA
1	Impaired	Impaired	6	0.5	NA
1	Impaired	Not impaired	47	3.9	NA
0	Married	Married	980	81.7	NA
0	Married	Not married	167	13.9	NA
1	Married	Married	46	3.8	NA
1	Married	Not married	7	0.6	NA
0	pov_score		NA	NA	24.1
1	pov_score		NA	NA	31.5
0	Hwise		NA	NA	5.7
1	Hwise		NA	NA	10.7

the reported cases of SGBV involved sextortion, meaning the respondents were either demanded or offered sexual favors in return for water or sanitation services. 4.4% of respondents (53 individuals) reported experiencing at least one of the four forms of sextortion when accessing water, bathing facilities or toilet facilities. Of these, 10 respondents had experienced sextortion in multiple service areas.

As has been well-documented, social stigma, fear and shame prevent women from reporting sexual violence, including sextortion to the authorities. The transactional nature of sextortion renders it a particularly sensitive topic, as those experiencing it are often framed as complicit, despite the clear power imbalances at play (World Health Organization, 2005; UNODC, 2020). This may have influenced responses to this survey as well. Therefore, it is important to also consider how many respondents have heard about or witnessed sextortion. Whilst 4.4% of respondents reported a direct experience of sextortion, 8.4% indicate that they had heard of someone experiencing it or had witnessed an incident. These findings are also in line with the results of the Global Corruption barometer where 9% of respondents experienced or heard about sextortion in any sector in Bangladesh (Vrushni, 2020).

The following sections will present the findings of the survey in more detail. These will be supplemented with findings

from the summary reports of the interviews and focus groups where possible.

### 3.1. Where does sextortion take place

Among the 53 respondents who reported having experienced sextortion, 42 respondents (79.2%) reported experiencing sextortion whilst accessing water. Sextortion incidents when accessing bathing facilities accounted for about one-third (32.1%) of reported sextortion cases, with one indicating having experienced two forms of sextortion. Five respondents (9.4% of all sextortion incidents) reported experiencing sextortion whilst accessing toilet facilities, with no respondents indicating having experienced multiple forms.

The respondents reported having heard about or witnessed sextortion incidents at much higher rate than having directly experienced sextortion themselves. Given the shame and stigma around this form of corruption, it is not surprising that people are more hesitant to share their own experiences than those of others. Access to water is again the area with the highest number of sextortion incidents: 7.6% of respondent had heard about or witnessed someone experiencing sextortion when accessing

water vs. 3.5% direct experiences. Respondents also were aware of incidents that happened when others were accessing bathing facilities (2.1 vs. 1.4% direct experiences) and toilets (1.6 vs. 0.4% direct experiences).

Overall, the most common location of sextortion incidents was the WASH facilities themselves, accounting for 44.3% of all reported locations. About every fifth location where sextortion incidents occur is located between the affected respondent's house and the facility (20.3% of reported locations). Other locations were elsewhere indoors (13.9%), elsewhere outdoors (11.4%) and in the house (10.1%). It stood out that none of the few respondents with direct access to toilet facilities (in the form of flush to piped sewer systems or hanging toilets/latrines) reported having experienced sextortion. Direct access to toilet facilities in one's home was also highlighted by participants in focus group discussions as a key measure to reduce risks faced by women and girls. This is in line with research on sexual and gender-based violence that shows that open defecation increases women's risk to violence (e.g., Saleem et al., 2019). Notably, those who reported relying primarily on unprotected water sources were disproportionately affected by sextortion incidents. Whilst 13.6% of respondents relied on unprotected sources comprising surface water, rain water, unprotected wells and unprotected springs as their main source of water, these respondents accounted for a quarter (26.4%) of incidents reported.<sup>4</sup> At the same time, none of the respondents with direct access to water in their homes and compounds reported being exposed to sextortion.

In the focus groups, there was general agreement that key solutions and mitigating mechanisms include the provision of better water supply installations, such as deep tub wells, in proximity to houses. Affordability of the service is key, including safety nets for those who lack financial security. The installation of adequate toilet and sanitation facilities, if possible, at the household level, was also identified as an opportunity to mitigate risks. If toilet and washing facilities are shared, participants emphasized the importance of lockable doors and sufficient privacy. FGD participants in Rasulpur and Korail described a substantial improvement compared to the situation 10 years ago, linked to more adequate services at an affordable rate, and to landlords dealing with the utility providers.

## 3.2. Which factors make women more vulnerable to experiencing sextortion?

Arguably being female is not the only factor that potentially makes a person vulnerable to sextortion, yet little has been researched about who is more likely to experience sextortion and why. While sextortion occurs at all levels of society and all sectors (IAWJ, 2012; Carnegie, 2019; Feigenblatt, 2020), not all women experience it. Hence, there are intersecting factors that make women more vulnerable to sextortion. This study finds several factors that seem to increase a women's vulnerability to sextortion.

<sup>4</sup> The incident itself may have occurred at a different water source, since the question captures the respondent's main water source, not the source frequented at the time the sextortion incident happened.

The regression analysis (see Table 3) finds support for hypotheses 1, 2, and 3. Respectively, respondents from high-poverty households, from water insecure households and with low literacy levels are more likely to suffer sextortion. Table 3 reports the Average Marginal Effect (AME) coefficients for four probit models, three models testing each of the predictors mentioned previously separately with the control variables, and one with all three main independent variables tested in conjunction (model 5). In addition, model 1 tests the significance of the control variables with the main predictors absent. As shown in model 5, we find only limited support for impairment (H4) increasing the likelihood of sextortion, *ceteris paribus*. Across all other models, the magnitude and significance of all of the main independent variables (literacy, poverty, and water insecurity) remain relatively constant. All models were run using the R statistical programming software, AME coefficients were determined using the *margins* package. In addition, we find little evidence of multicollinearity among the predictors in the models ( $VIF < 5$ ).

Figure 2 plots the Marginal Effects for a Representative (MER) across various levels of our main independent variables, this was calculated using the *ggeffects* package. For example, a respondent with a poverty score of 39.7, without literacy skills, in a rural area and with an HWISE score of 32 would have a predicted probability of experiencing sextortion of 43%.<sup>[1]</sup> This compares to a 2% predicted probability of sextortion for a hypothetical respondent with an HWISE score of 0 who is literate and lives in an urban area and has a poverty score of 9.1. On average, a 10-point increase in HWISE scores increases the probability of experiencing a sextortion event by 4% *ceteris paribus*. Similarly, a 10-point increase in Poverty Scores increases the probability of sextortion by 1% on average while being literate reduces this probability by 2.7%.

The 95% confidence interval for this hypothetical respondent would be a predicted probability of sextortion between 23 and 66%.

We thus find ample support for hypotheses 1, 2, and 3, where poverty, the lack of literacy and water insecurity are statistically significant predictors of an increased probability of sextortion when holding relevant demographic indicators constant.

Impairment of any kind (i.e., mobility, visual, mental, or hearing) don't predict a higher likelihood of enduring sextortion to a statistically significant level in neither the bivariate nor the multivariate models. However, this result should be interpreted carefully as only very few individuals with an impairment were included in the sample. In the following sections, we explore the vulnerabilities identified in the analysis in greater detail.

### 3.2.1. The role of poverty

Previous studies show that women living in poverty are particularly vulnerable to sextortion, as they lack the means to pay with money and/or goods and therefore have to rely on their body as the only remaining currency (Merkle et al., 2017). The survey results also clearly show that poverty is a risk factor. In this study a variation of the Lived Poverty Index (Mattes, 2008) was used, which is a measure of deprivation of basic necessities, as a proxy for poverty at the household level. The results show that respondents who reported having experienced sextortion in accessing WASH

TABLE 3 Predictors of sextortion in WASH in Bangladesh.

	Dependent variable: sextortion				
	(1)	(2)	(3)	(4)	(5)
Literate		−0.036**			−0.027*
		(0.014)			(0.014)
pov_score			0.002***		0.001**
			(0.0005)		(0.001)
hwise				0.005***	0.004***
				(0.001)	(0.001)
Age	0.013	0.004	0.011	0.013*	0.005
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Married	0.002	0.001	0.001	0.011	0.010
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Impaired	−0.023*	−0.024	−0.033*	−0.007	−0.015
	(0.018)	(0.018)	(0.018)	(0.018)	(0.019)
Urban	0.012	0.005	−0.013	−0.004	−0.022
	(0.012)	(0.012)	(0.014)	(0.013)	(0.014)
Constant	−2.065***	−1.640	−2.381	−2.533	−2.371
Observations	1,200	1,200	1,200	1,198	1,198
Log likelihood	−214.842	−211.321	−207.722	−200.950	−195.856
Akaike inf. crit.	439.685	434.643	427.443	413.901	407.712

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

services tend to come from households with a higher level of LPI, where a higher score indicates a more acute level of poverty.

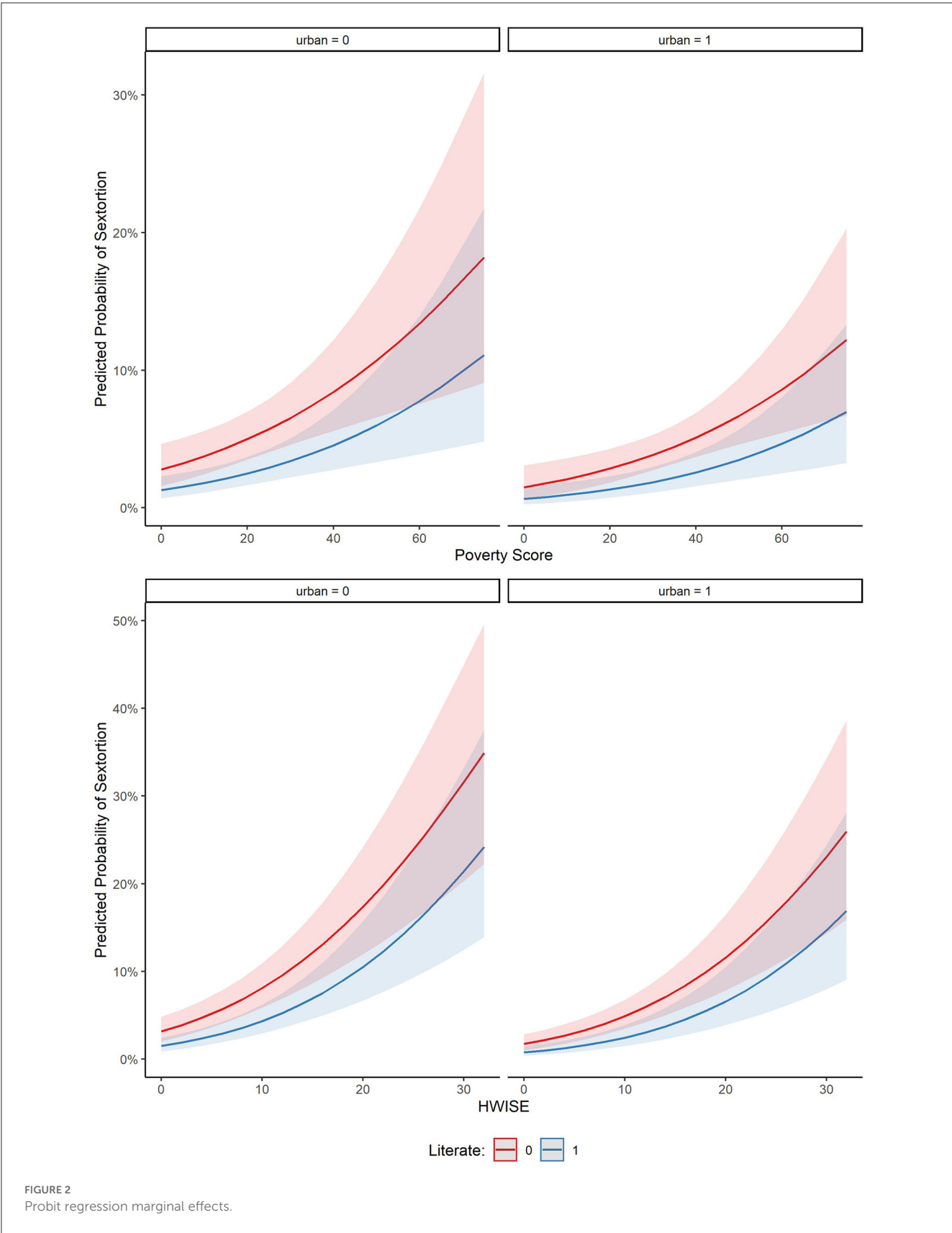
The results clearly show that poverty exacerbates the risk of women to be exposed to sextortion (Figure 3). To an extent, this is not surprising. Previous research shows the majority of those without access to safe WASH services live in low-income countries. In addition poor households often do not have sufficient access to water to sustain livelihoods, e.g., through irrigated agriculture (Crow and Sultana, 2002). Women and girls are disproportionately affected as they are typically responsible for “water collection and household and community sanitation” (Adams et al., 2021, p. 85). Importantly, as Crow and Sultana (2002) argue, “gender relations interact with material inequalities to influence access to water” (p. 712) in three ways. For one, the already mentioned division of labor that typically puts the burden of domestic labor and childcare on women, who then have to decide which tasks need to be prioritized or potentially given to younger girls (e.g., the collection of water). Secondly, most productive assets are controlled or owned by men, which not only limits productive access to water for women but also means that most decision making related to access to water are still dominated by men. Lastly, the focus on the domestic role of women gives men more social and economic power which also influences where public investments are made, leaving those areas that are crucial or particularly dangerous for women at the margins (Crow and Sultana, 2002). Poverty also plays a crucial role in understanding corruption. The poor are disproportionately affected by corruption as it takes up a larger share of their income (Hunt and Laszlo, 2012; Justesen and Bjørnskov, 2014) and a

larger number of women than men live in (extreme) poverty (UNWomen, 2022). In addition, those living in poverty often are more dependent on public services, where women are often considered to be more vulnerable to corruption as they have less recourse and agency than men (UNODC, 2020, p. xiv). Gender also determines what roles men or women typically take on. As women often have more unpaid housework and care responsibilities they are more likely to interact with certain services providers (e.g., social services, health care, education, water; Chêne et al., 2010; Gerasymenko, 2020). Importantly, which roles and responsibilities are considered to be male or female is highly context specific. Women living in poverty are therefore not only more exposed to corruption in certain sectors, but also often lack the funds to pay for corruption. As a stakeholder highlighted in previous research: “Women’s experiences [of corruption] are shaped by the fact that, if they have nothing, they still have female bodies” (Merkle et al., 2017).

### 3.2.2. The role of water insecurity

Water insecurity has been shown to be linked to physical, emotional and intimate partner violence (House et al., 2014; Choudhary et al., 2020). Therefore, it can be expected that it also plays a role in explaining experiences of sextortion. Overall, 23% of respondents live in water insecure households according to the HWISE scale. Among the four regions in the dataset, Korail has the highest concentration of water insecure households (52.3%), followed by Bandarban (29.2%), DSCC (6.7%), and Satkhira (3.6%).





The severity of water insecurity also tends to be higher in the study areas with higher concentration of water insecure households. The median of the HWISE Scale scores in Korail and Bandarban are

12 and 7, respectively, these are also the two areas with the highest number of sextortion incidents. This contrasts with Rasulpur and Satkhira, where the median scores are 0 (Figure 4).

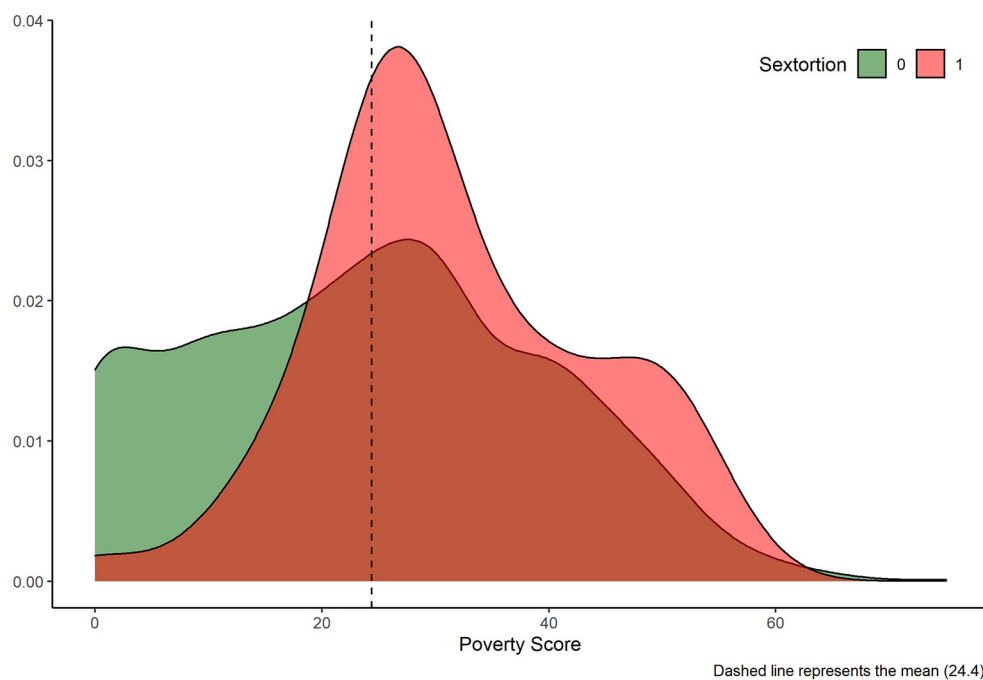


FIGURE 3  
Distribution of lived poverty index disaggregated by sextortion incidence.

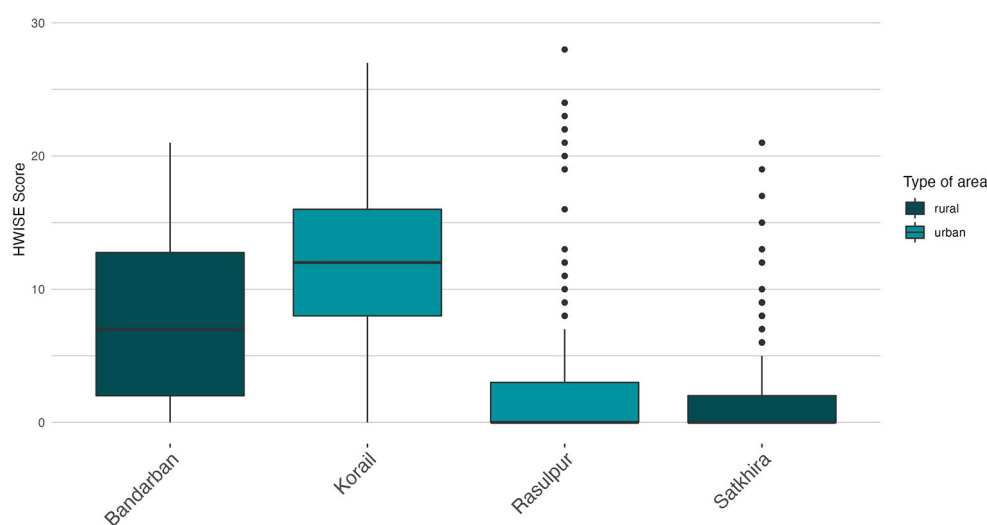


FIGURE 4  
Distribution of HWISE scale scores in the study areas.

Assessing water insecurity in the past 4 weeks illustrates that water stress is very acute for some. Nearly a third (29.3%) reported that they or someone in their household worried about sufficient access to water to cover all household needs three times or more within the last 4 weeks. Furthermore, 10% of the respondents reported that they or a member of their household had to pay a bribe, give a gift, or do a personal favor for an official working for the government or Water Service Provider

in order to get the needed services in the past 12 months. The water insecure households were also those who paid for bribes to receive WASH services more often in the past year, accounting for 57% of such experiences. This indicates that users from water insecure households often find themselves subject to the discretion of service provider officials, who may choose to extort bribes or sexual favors from these users in exchange for service.

Interestingly, the findings above stand in stark contrast to other SGBV incidents (excluding sextortion), which affect water secure and water insecure households proportionally to their representation in the sample. This shows that it is important to look at sextortion cases separately and not only as a form of SGBV, in order to understand vulnerabilities better.

### 3.2.3. The role of literacy and disability

The analysis highlights that the level of literacy impacts who is or is not vulnerable to sextortion. This is in line with previous research that finds that a “person’s access to resources, opportunities and choices, and power and voice directly impacts the vulnerability in relation to persons with entrusted authority on which the person depends” (Eldén et al., 2020, p. 51). The vast majority of sextortion incidents (72%, 38 cases out of 53) affect those who are not literate (cannot read and write). In comparison, those who are literate make up nearly half of the sample (48.9%) but account only for 28.3% of the reported sextortion incidents.

Previous research shows that “socially marginalized groups, such as people with disabilities who may have problems accessing latrines, or those from lower castes where entrenched discrimination may prohibit the use of common sanitation sources, may experience increased difficulties in safely meeting their daily water and sanitation needs” (Sommer et al., 2015, p. 106). At the same time persons with disabilities are more exposed to corruption than those without (Jenkins and McDonald, 2022). Yet, the survey for this study does not find a significant effect of disability on the likelihood of experiencing sextortion. However, this result should be interpreted with a lot of caution as the number of those survey respondents reporting that they suffer from at least one impairment (was very small and the survey only captured seven respondents who reported both an impairment and a sextortion experience. A more comprehensive analysis with a larger number of respondents with impairments might yield different results and help to shed light on the question if women with (multiple) impairments are more affected, and with regards to the relative prevalence of sextortion incidents.

### 3.3. (Gender) norms and power

By definition, corruption is about power, and especially in the case of sextortion, this involves a party that (systematically) has power over the other (Merkle, 2018). Especially in sextortion, “the power dynamic always represented a structural power asymmetry in favor of the public official receiving them” (UNODC, 2020, p. 44). Yet, the survey highlighted that the public often judges the women rather than the public official. On the question of how respondents view sexual relationships with providers of water or sanitation services, 39.7% indicated that it is not good that it happens, but placed the responsibility with the users, i.e., the women, rather than the powerful party, i.e., the public official. Only a third (33.4%) described people having sexual relationships with service providers as victims who need support. A minority (7.3%) described such relationships as normal and acceptable, whilst 6.5%

described them as beneficial for users because they get better services (no queuing, affordable water, free toilet/bathrooms, etc.).

The understanding that the occurrence of corruption is closely linked to gender norms is getting increasing attention in the literature (e.g., Echazu, 2010; Esarey and Chirillo, 2013; Merkle, 2018; Kubbe and Merkle, 2022). The discussion around gender norms in WASH is also not new, as the structural responsibilities around WASH are typically related to the traditional roles of women and girls, such as child care, cooking, cleaning and water collection (White et al., 2002; Fisher et al., 2017). Thus, “WASH access, use, and control are embedded in a complex web of socio-cultural and political networks that impose social relations at different scales” (Nunbogu and Elliott, 2022, p. 7). Sextortion, like sexual and gender-based violence, is particularly influenced by the gender norms that shape how society expects women and men to behave. This also impacts how being a survivor of sextortion is stigmatized and therefore how likely women are to report experiencing sextortion.

When asked in which circumstances the respondent thinks it is acceptable for a woman to build a sexual relationship with a water operator/vendor, the vast majority (92.2%) indicated that women should never form such a relationship in any circumstances. In light of this, stigma may prevent some women from reporting experiences of sextortion, and the real number of women affected may be higher than is reflected in surveys such as the one conducted here. While no research has been done estimating how sextortion is underreported in surveys, research on SGBV shows that a multitude of factors, such as stigma and shame (Kishor and Johnson, 2005; World Health Organization, 2005), the expected impunity of perpetrators (e.g. Hynes et al., 2004), or the normalization of such violence (Fugate et al., 2005) prevent women from reporting (Palermo et al., 2014).

Nevertheless, some respondents conceded certain scenarios within which they think it acceptable for a woman to build a sexual relationship with the water operator/vendor, in particular when this is the only means to get water. A few also mentioned that factors such as care responsibilities for sick or elderly people, a lack of enough water for cooking or household chores, or long queuing times could justify entering into such relationships. This is once again in line with gendered expectations that women should put their care responsibilities above all else. Studies on Bangladesh also show that women do not only face a risk of violence outside the home but also inside the home, for example when they cannot fulfill their roles in the household due to water insecurity (Pommells et al., 2018; Collins et al., 2019). This additional burden likely forces women to expose themselves to dangerous situations when accessing water and can be expected to also make them less likely to report abuse experienced when fetching water.

The questions of how individuals and communities respond to sextortion and whether perpetrators are held accountable are strongly impacted by social norms, where gender norms that see women in subordinate positions and accept the dominant position of men sustain gender-based violence (Massey, 2013; Banarjee, 2020; Dery, 2021). The survey clearly shows the social stigma for survivors of sextortion, where 39.6% of respondents who experienced sextortion state that it damages the family honor (Figure 5).

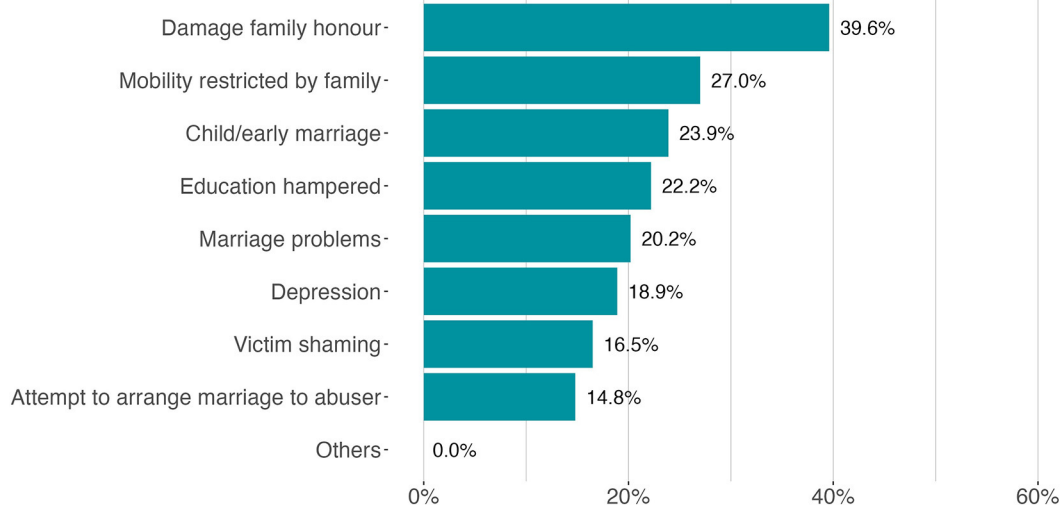


FIGURE 5  
Expected consequences of sextortion incidents for those who experienced sextortion.

A large number of respondents indicated that survivors should report to their family members (35.3%), but only few thought survivors should report to the police (11.7%).

This is likely linked to the fear of damaging the family honor, but also an expectation that the police will not be helpful. In Bangladesh, corruption plays an important role in determining who has access to the judicial system, and “[t]he demand for money for government-provided legal representation puts those without power or financial means at an even further disadvantage” (Humans Rights Watch, 2020, p. 47). As additional obstacles, “when women or girls do go to the police after an assault, they frequently face obstruction from police officers. This can range from disbelief, refusal to file reports, and corruption, to negligence toward investigations. Women rarely trust that the police will offer them protection or that they will uphold the rule of law” (Humans Rights Watch, 2020, p. 38). At the same time, women face severe pressure from their communities to not report sextortion, which was highlighted in the focus groups.

In line with this, of the respondents that had experienced sextortion, several did confront their perpetrator but very few reported the incident to the authorities. Of those who experienced sextortion when accessing water, 45% confronted their perpetrator, compared to 20% for toilets and 41% for bathing. In the case of sextortion incidents related to water, 40% asked for help from family, compared to only 20% (1 individual) in the case of toilets, and 35% in the case of bathing. Help from a friend was also solicited by 17% of respondents in the case of water and 6% in the case of bathing. Only 5% reported the incident to the police in the case of water, and none of those who had experienced sextortion when accessing toilets or bathing made use of police or a helpline to report. For reporting cases, the focus group highlighted that affected individuals in some areas (Rasulpur and Korail) prefer using local structures and councilors, rather than reporting to the police, due to concerns about corruption within the police force.

In the focus groups, victim-blaming was mentioned as a key factor contributing to the deteriorating physical and mental health of affected individuals, some of whom commit suicide. Additionally, the strain on relationships and marriages was frequently mentioned as an adverse consequence and a reason why some affected individuals may opt to not report incidents. This would then also explain why the survey recorded 41 instances where respondents opted not to share their experience with family. The main reasons cited were that the family/partner would react excessively and become worried, fear that the victim’s freedom of movement would be restricted, fear that the family would hold them responsible for the incident, and that sextortion incidents should be solved by the victim herself. The experiences of those that did share their sextortion experience shows that these fears are not unfounded. Nearly half of those who did decide to disclose to their family an experience of sextortion when accessing water (7 out of 15) indicated that their family reacted by restricting their movement. The share was even higher among those who had experienced sextortion when accessing a bathing facility, with 7 out of 8 indicating that their movement was subsequently restricted. But respondents also had an opportunity to discuss how to deal with the situation (11 out of 15 for water, 3 out of 8 for bathing). One respondent indicated that their family took them for professional counseling. Where actions were taken after discussing incidents with members of the household, these included taking the case to the area chief (11 cases), discussing between families (8) and taking the case to a religious leader (2 cases).

## 4. Conclusion

Access to water is a life-sustaining requirement and a human right. Everyone should be able to obtain access without needing to fear exploitation and/or abuse. This study clearly shows the importance of including sextortion into discussions around gender



and access to WASH. The data highlights that sextortion occurs in all assessed areas of Bangladesh. The study also provides important information about which factors make women more vulnerable to experiencing sextortion. The quantitative analysis finds that women who live in poverty, are members of water insecure households or are illiterate face a higher risk of being sexually extorted when accessing WASH services. The survey also clearly indicates that among the three WASH services examined, the risk of sextortion is the highest in accessing water, which accounts for four out of every five reported incidents. The regression results do not point to a statistically significant relation between the examined impairments of respondents and the prevalence sextortion in accessing WASH services, though in light of other literature suggesting a relevant link and the low respondent numbers with reported impairments, this finding warrants further investigation.

There is considerable stigma attached to the topic of sextortion, therefore the reported prevalence in this study is likely to underestimate the true extent of the problem. The study has shown that a lack of trust in authorities and their ability or preparedness to prosecute perpetrators leads to only a small proportion of incidents being reported to the police. Whilst public opinion largely considers sexual relations with water providers to be bad, more respondents placed the responsibility with users, rather than regarding them as victims.

Several key recommendations can be identified from the findings. Important for both academic research and policy makers is the finding that sextortion disproportionately affects water insecure households while other SGBV incidents (excluding sextortion) affect water secure and water insecure households proportionally to their representation in the sample. This demonstrates how important is to include the corruption element in the analysis and consider sextortion separately and not simply as a form of SGBV. For researchers, this implies that more research is needed specifically on sextortion and which factors make individuals more vulnerable to this form of corruption. For policy maker, the message is clearly that sextortion needs to be addressed with separate policy tools and that it is not sufficient to consider it covered under general SGBV policies.

Advocacy with governments and service providers is key. Adequate mitigation mechanisms can only be designed and implemented by keeping the issue of sextortion on the radar of decision-makers and operators. In the focus groups, respondents emphasized the provision of better water supply installations in proximity to houses as a principal solution. Where resources are lacking to implement such solutions, other monitoring and accountability mechanisms become even more crucial to protect users from the possibility of exploitative practices, such as paying bribes or sextortion. Besides better access to water and sanitation, investment in human capital and capabilities is also necessary to reduce risks, especially in light of the heightened vulnerability to sextortion identified among those who are not (fully) literate. Just as key is awareness raising on the topic at the community level, jointly with the establishment of safe and adequate reporting channels. Where authorities are not trusted, other actors, including NGOs, faith-based organizations and CSOs, may be able to offer support to survivors and continue to raise attention to the issue with authorities and service providers.

Addressing gender norms that exacerbate vulnerabilities to sextortion as well as prevent victims from reporting also need to be addressed. Here it is advisable to focus on joined efforts of women's empowerment and anti-corruption initiatives.

Further research on this topic in other countries, and in particular in contexts with water insecure households, including slums, informal settlements, refugee camps, is crucial to raise attention to sextortion and to hold service providers accountable. In particular, large-scale surveys using purposeful sampling methods could help delineate the prevalence of sextortion across minority groups, such as ethnic minorities or sexual minorities. Further research could also expand the focus by including men, boys and non-binary persons in the sampling.

To meet the goals set under SDG6 of the 2030 Agenda for Sustainable Development, it is crucial to identify the various risks and challenges that continue to prevent billions from accessing safe and affordable water and sanitation. This paper has sought to contribute evidence and insights into one such risk, sextortion, which continues to obstruct universal access to water and sanitation.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the Water Integrity Network ([info@win-s.org](mailto:info@win-s.org)), without undue reservations.

## Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The participants provided their oral informed consent to participate in this study.

## Author contributions

Data collection was designed and overseen by UA and conducted by SR and ZH. Data was cleaned and analyzed by UA, DG, AS, and OM. The article was written by OM, with support of the other authors. All authors were involved in multiple rounds of revisions and rewriting to get to the final version of the paper. All authors contributed to the article and approved the submitted version.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships

that could be construed as a potential conflict of interest.

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