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Barriers to Drinking Water Security in Rural Ghana: The Vulnerability of People with Disabilities

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ABSTRACT: Because it is a life-giving substance and one of the crucial components of good health and human survival, access to potable water has been recognised globally as a human rights issue. The current development paradigm also endorses inclusivity in development interventions, calling on leaders of countries to leave no one behind. In most developing countries, however, there seems to be a dilemma as to whether governments can achieve the 'all-inclusive agenda'. Among the most marginalised people are those with disabilities; in terms of access to potable water, this group is likely to face some of the greatest inequalities. Using a qualitative approach that employs in-depth interviews with members of three rural communities in Ghana, this study assesses the water security experiences of persons with disabilities (PWDs). The study identifies barriers such as social exclusion, stigma, distance and water costs, all of which make it difficult for PWDs to collect a sufficient quantity of potable water. Considering the need to achieve universal access to clean water globally, understanding access barriers is essential for rural water management policy decisions. We conclude that in order to enhance access to potable water by PWDs, it is imperative that their needs are assessed, that members of this group are included in rural water management decision-making, and that they are involved in the day-to-day management of drinking water facilities.

KEYWORDS: Water security, water access, water access barriers, rural Ghana, persons with disabilities

INTRODUCTION

This paper focuses on the water security experience of persons with disabilities (PWDs) in rural Ghana. 'Water security' is defined as the sustainable availability of, and access to, the required quantity of potable water through a community-preferred method, together with active involvement in water management decisions (Global Water Partnership, 2000; Goldhar et al., 2013; Rijsberman, 2006). Access to potable water is an essential step towards improving human living standards. In 2010, the United Nations Human Rights Council declared access to water to be a human right; this has been endorsed through the Sustainable Development Goals (SDGs). Target 6.1 of the SDGs seeks to achieve universal access to potable water by 2030. In addition, the focus of SDG 1 on ending poverty in all its forms calls for universal access to basic services, including water, and emphasises the need to pay attention to poor and vulnerable groups (WHO/UNICEF, 2017a).

Achieving goals around inclusivity requires national leaders to put vulnerable people at the centre of every effort to provide universally available potable water. Serious attention should be directed to the hardest to reach, the poorest, and those whose water needs are currently not addressed by mainstream policy initiatives (White et al., 2016). Universal inclusiveness, however, will not be achieved if access to

potable water continues to be measured by coverage, that is, by the availability of a water facility at a particular place and point in time. Coverage does not guarantee access, considering that several factors can impede the adequate and reliable supply of potable water (Adank et al., 2013; Braimah et al., 2016; Dosu et al., 2021; UNDP, 2015). Water security issues such as frequent breakdowns of water facilities, long distances to water collection sites, and other physical challenges associated with water collection are not factored into water coverage (Adank et al., 2013; Coles and Wallace, 2005; Hanrahan and Dosu, 2017). These factors, however, have profound implications for many households, and especially for PWDs.

It is therefore reasonable to argue that the particular needs of vulnerable populations, as stipulated in the SDGs, are not being met. SDG 6, despite its overall target of achieving universal access to safely managed water by 2030, recommends immediate minimum basic access to potable water. Basic water access, in this context, refers to the availability of potable water that can be transported from source to home in 30 minutes or less, roundtrip, including waiting time. Globally, about 263 million people spend more than 30 minutes accessing water for domestic use (WHO/UNICEF, 2017a, 2017b). Those who even who do fall within the category of basic water access are still required to expend considerable time and energy in water collection. As Geere and Cortobius (2017) noted, more than one-third of the population of sub-Saharan Africa, particularly those in rural areas, still retrieve drinking water from the water source to their homes. These water collection trips involve physical activities that constitute barriers for PWDs (Pradhan and Jones, 2008; Wrisdale et al., 2017). In addition, despite the SGD 6.1 target of making access to water affordable, without commonly accepted metrics for affordability it is difficult to establish exemption considerations for vulnerable populations (WHO/UNICEF, 2017a). Based on these and other factors, the WHO/UNICEF Joint Monitoring Programme (JMP) predicts that more than one-third of countries will not achieve universal access to an improved drinking water source by 2030.

This is an important issue for policy makers, considering that an estimated one billion people in the world live with disabilities (Kuper et al., 2018); even so, there is little discussion or evaluation of the water security issues faced by that 15% of the world's population with disabilities (Mactaggart et al., 2018; White et al., 2016). As this paper argues, PWDs in Ghana have been left out of water management planning and programmes. Water policies have not been developed through a disability lens that takes into account the experiences of PWDs and the unique challenges they face in retrieving water. This omission is exacerbated by inadequate data on the social, economic and health implications that inadequate potable water access can have on the health and well-being of these individuals and households and on their communities (Groce et al., 2011). The extent of the problem regionally, nationally and globally is also not known, as there is a gap in the literature in terms of the exact number of persons with disabilities who do not have access to improved drinking water (Mactaggart et al., 2018).

Ghana developed its first comprehensive water policy in 2007. Although the policy states that special needs of the "physically challenged" should be provided, there is little or no information regarding policy programmes or projects that could help achieve this. Persons with disabilities form about 3% of Ghana's total population of 25 million (Ghana Statistical Service, 2014), but the barriers they face in access to potable water have been ignored by national policy. Such obvious omissions add to the challenge of recognising and meeting the needs of PWDs in local policy initiatives and programmes. Those with disabilities are among the most marginalised in society and are much more likely to suffer extreme poverty and deprivation; because of this, the identified gaps are a serious cause of concern (Braithwaite and Mont, 2009; Groce et al., 2014). Several authors have argued that water insecurity has severe impacts on vulnerable groups, including PWDs (Geere, 2015; Geere et al., 2010; Wrisdale et al., 2017). According to Adger (2006), these categories of people are vulnerable because they are, at the same time, more susceptible to harm from exposure to stresses associated with environmental and social change, and less capable of adapting. A gender lens with regard to water security is also important (Hanrahan and Mercer, 2019; Harris et al., 2017). Since household water collection in most Ghanaian communities is gendered

(Asibey et al., 2019; Dosu et al., 2021; Harris et al., 2017), women with disabilities are extremely vulnerable. This demonstrates the intersectionality of gender, economics, health status and location.

The marginalisation of PWDs persists despite Ghana's signature on the United Nations Convention on the Rights of Persons with Disabilities, and explicit recognition of human right to water and sanitation for all by UN Resolution 64/292. Article 9 of the Convention, for instance, calls for equivalency in accessibility to adequate water and sanitation between those with and without disabilities (United Nations, 2006). The SDGs explicitly include persons with disabilities, making inclusiveness an imperative in ensuring access to water and sanitation. As Groce et al. (2014) point out, recent evidence of the strong link between disabilities, extreme poverty, and social marginalisation points to the need to ensure that PWDs are systematically included in drinking water policy efforts. Given the existing and ongoing marginalisation of PWDs, governments must expend additional effort to ensure that adequate attention is given to the water and related sanitation needs and hygiene services of persons with disabilities.

To represent the needs of PWDs in water management policy decisions, Pradhan and Jones (2008) suggest that their actual – rather than assumed – experiences should be systematically assessed. This paper responds to the gap in documentation of the lived experience of PWDs with regard to their access to adequate water and sanitation; it does so by looking at the water security experiences of PWDs in rural Ghana.

Before delving into the experiences of PWDs, we situate this paper within the body of literature on rural water security. We argue that despite the lack of a common definition of water security, it is important to evaluate the degree to which policy programmes address the indicators of water security in terms of the human right to water and the target 6.1 of the SDGs. We then identify sociocultural, structural, economic and institutional factors that constitute greater water security barriers for PWDs than they do for those without disabilities. We argue that these barriers have a more severe impact on women with disabilities, considering the gendered nature of water access in rural Ghana. We demonstrate that these barriers serve as major impediments to the enjoyment of the human right to water as recognised by the United Nations. This paper's findings help address the current knowledge gap on water (in)security among PWDs. It suggests possible policy recommendations that would help promote universal access to potable water in rural Ghana, suggestions which may have implications for other rural locations where potable water access is limited or compromised.

SITUATING WATER SECURITY WITHIN THE RURAL CONTEXT

The term water security is contested and evolving in terms of its definition. However, water security has been recognised as being part of human security. Although definitions of water security are rooted in different contexts, scales and disciplines, our focus is on the United Nations indicators for assessing the human right to water and specifically on the Sustainable Development Goal 6 (Bigas, 2013; United Nations General Assembly Human Rights Council, 2010; WHO/UNICEF 2017a). We thus see rural water security as encompassing the following variabilities: water availability, access, affordability, quantity, quality, human needs, gender, health status, and environmental considerations (Hanrahan and Mercer, 2019; Bigas, 2013; Grey and Sadoff, 2007; Global Water Partnership, 2000). We argue that improvements in community water security require the reduction or removal of physical barriers, and access to water by all community members, including PWDs, via the community's preferred method.

Water security contributes significantly to quality of life and to the achievement of the Sustainable Development Goals; we recognise that water insecurity, on the other hand, is associated with significant health risks, even death (Howard et al., 2020). The Millennium Development Goals (MDGs), which came to an end in 2015, brought significant gains in access to basic water services for many people globally, and most people now report access to water from improved sources (Graham et al., 2016). Such progress notwithstanding, an estimated 844 million people worldwide still lack access to safe water (WHO, 2017a;

2017b). It is also estimated that 159 million people still rely on unmonitored water sources such as streams or lakes (WHO/UNICEF, 2017a).

Globally, sub-Saharan African countries are the most likely to experience drinking water insecurity; the area is home to about 58% of the almost 160 million people who collect water from unmonitored sources (WHO/UNICEF, 2017a). This situation is more pronounced in rural areas, where people are five times more likely to be water insecure than those living in urban areas (Baur and Woodhouse, 2009). Globally, those living in rural areas remain the most underserved, constituting 80% of people who do not have access to improved drinking water; this phenomenon is strongly in evidence in sub-Saharan Africa (WHO/UNICEF, 2017a; 2017b).

Despite recent policy initiatives, rural Ghanaians are among Africa's most water insecure groups (Sun et al., 2010, Awuah et al., 2009); they are more likely than urban Ghanaians to have their water sources off-premises. Among marginalised rural populations, PWDs are recognised as being one of the most vulnerable groups in terms of drinking water insecurity (Howard et al., 2020) in Ghana.

As shown in the subsequent sections, in rural Ghana existing barriers impede the water security of PWDs far more than they do those without disabilities. Groce et al. (2011) and Kuper et al. (2018) categorised these barriers as social, technical, economic and institutional. Social barriers, according to these authors, stem from cultural norms and stigmas; technical barriers, on the other hand, include physical impediments that limit the accessibility of PWDs, such as the distance that must be covered for water collection, and poorly designed water infrastructure. As these authors also maintain, economic barriers further impede PWDs' accessibility through a combination of required water payments and the high prevalence of poverty within this population. Institutional barriers, finally, stem from a lack of participation; absence from planning and administrative bodies prevents PWDs from having their views represented in community decisions involving rural water security.

We note that the labour-intensive nature of water collection in rural Ghana – as imposed by these barriers in addition to gendered water retrieval – exacerbate the vulnerability of women and girls with disabilities. As in other sub-Saharan African countries, a range of sociocultural expectations and norms in Ghana have created unequal relations and status between men and women. Women are lower in the social hierarchy (Amoakohene, 2004; Glazebrook, 2011); they are marginalised through marriage obligations, childcare responsibilities, and through ascribed and defined domestic work (Boahene, 2013). For this reason, they are responsible for the bulk of household labour, including water collection (Harris et al., 2017). We therefore argue that the combination of rural remoteness, limited water infrastructure, and gendered water collection processes can worsen the experiences of women and girls with disabilities and increase their marginalisation. Target 6.1 of the SDGs calls for universal and equitable access to safe and affordable drinking water through paying attention to the needs of vulnerable groups, including PWDs (WHO/UNICEF, 2017a). Given this, it is imperative to incorporate the experiences of PWDs in policy decisions, hence this paper's focus. This paper identifies the barriers that serve as impediments for PWDs to access water just as everyone and calls for the need to incorporate their experience in water management decisions.

MATERIALS AND METHODS

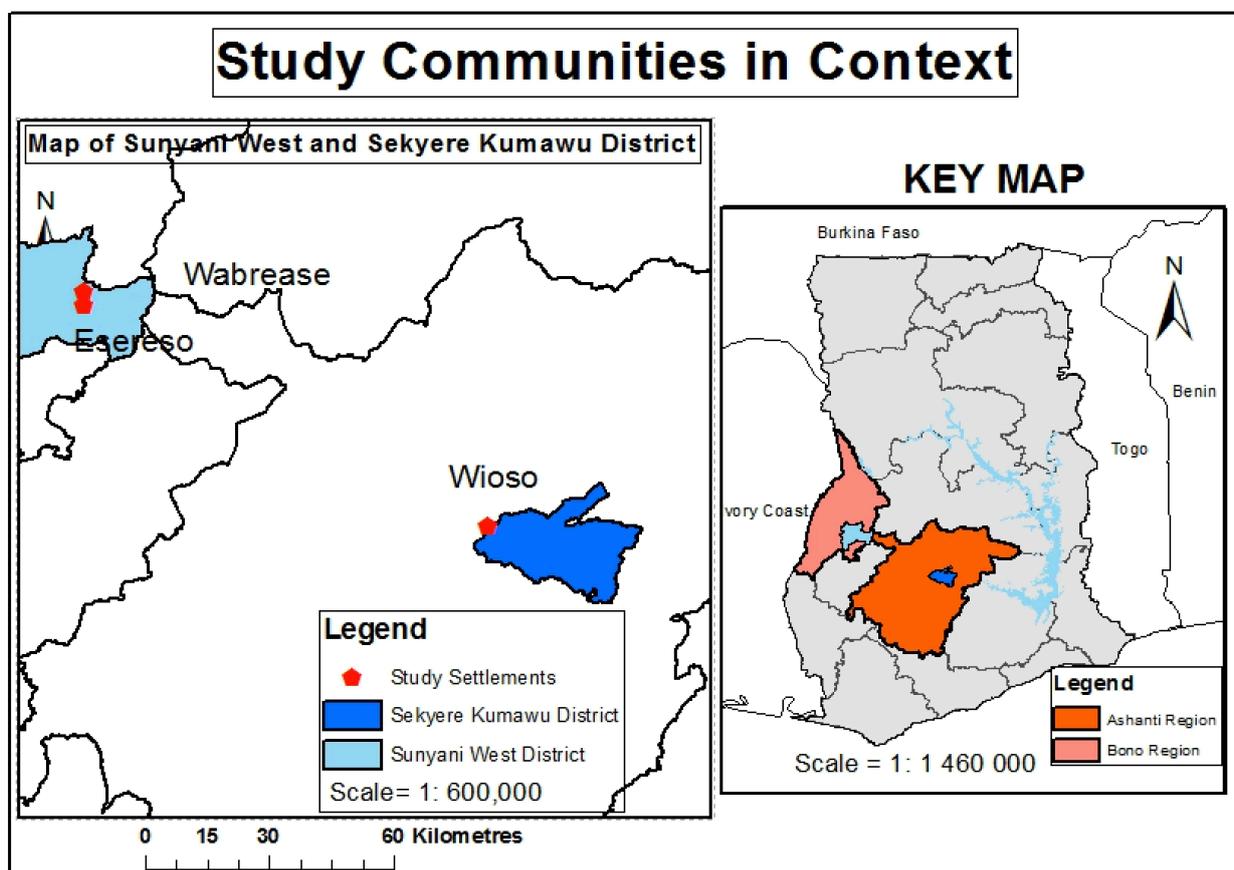
Study community selection

We selected three rural Ghanaian communities (Figure 1), Esereso, Wabrease and Wioso. These communities were selected based on reports from the Community Water and Sanitation Agency (CWSA) about their exposure to water security challenges. Assistance in the selection process was also received from officials (Dosu et al., 2021) of the Sunyani West and Sekyere Kumawu district assemblies. We selected these two districts because they are considered to be two of the worst-performing districts in terms of rural water coverage (CWSA, 2016). Local officials also identified the selected rural areas as

being among the communities facing severe water security challenges, including frequent facility breakdown, heavily reliance on unmonitored water sources, and chieftaincy interference in water management.

Esereso and Wabrease are located in the Sunyani West District (Figure 1) and have populations of 457 and 420, respectively. Esereso has two handpump boreholes, only one of which was operating when the field data was collected in 2019; the functional handpump borehole was also unreliable as it frequently broke down. Wabrease has a reliable handpump borehole, but its capacity cannot meet the needs of the large number of households that rely on it (Adank et al., 2013). Wioso, our third community, is located in the Sekyere Kumawu District with a population of 551 people. Wioso has two handpump boreholes; only one of the two boreholes serves the community as its primary source of drinking water. However, its utilisation rates exceed government guidelines as the CWSA sets a standard of maximum 300 people per borehole (Adank et al., 2013).

Figure 1. This map shows the geographical location of the study communities in national, regional and district contexts.



Source: National Geographic et al. (2020)

Recruitment of study participants

This study was part of a research project that assessed rural households’ water security experiences in Ghana. It included 847 individual participants recruited from 158 households. We included PWDs, especially women with disabilities, among those who were vulnerable in terms of rural water security (Howard et al., 2020).

According to the United Nations Convention on the Rights of Persons with Disabilities (United Nations, 2006: 4), PWDs include "those who have 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". The UN's understanding of PWDs is mirrored in Ghana's *Persons with Disability Act, 2006* (Act 715) s.59(Gh.). The Act also alludes to physical, cultural or social barriers that substantially limit one or more of the major life activities of the disabled individual (Republic of Ghana, 2006: s.59).

The recruitment of the study participants mirrored the disabilities identified in the Act. Disability was tied in with water security, based on the reported limitations of PWDs within the core functional domains of water collection (walking, fetching, and hauling) using Mactaggart et al.'s (2018) four-point scale: no difficulty, some difficulty, a lot of difficulties, and cannot do at all. These physical conditions are considered disabilities because they prevent those with such conditions from engaging in day-to-day activities in the same ways as other people (Pradhan and Jones, 2008). Indeed, given the labour-intensive nature of water collection in rural Ghana, it is imperative to use a disability lens (Dosu et al., 2021).

Through referrals by community leaders and members, we recruited ten participants, including three from Esereso, two From Wabrease, and five From Wioso; women with disabilities were among the participants. We were committed to respecting those who did not want to take part, however all PWDs who were contacted participated enthusiastically in the study.

Table 1. Characteristics of study participants.

Participant	Limitations in water collection	Households: persons with disabilities				
		Age	Sex	Marital status	Number in the household	Employment status
1	A lot of difficulties	44	Female	Divorced	5	Economically inactive
2	Cannot do it all	80	Male	Married	9	Unemployed
3	Cannot do it all	60	Female	Single	1	Economically inactive
4	Cannot do it all	35	Female	Single	4	Economically inactive
5	A lot of difficulties	26	Male	Single	1	Economically inactive
6	A lot of difficulties	23	Male	Married	1	Economically inactive
7	Cannot do it all	20	Female	Single	1	Economically inactive
8	Cannot do it all	55	Female	Single	2	Economically inactive
9	Cannot do it all	44	Male	Single	2	Economically inactive
10	Cannot do it all	48	Male	Married	2	Economically inactive

Source: Field data (2019).

Note: ¹ Economically inactive people are those who are not eligible to work due either to physical and mental conditions or to the stage of their development, for example, young people in school, the aged (Ghana Statistical Service, 2016).

Our study participation criteria aimed to include rural male and female¹ adults, including those with disabilities who live with compromised water access. Participants had to have been resident full-time for

¹ In Ghana, gender is binary, involving males and females.

at least six months in one of the study communities; this meant that travellers and visitors were excluded even if they had physical or sensor disabilities. We also excluded people below the age of 18 (the age of majority in Ghana), even those who fell within our disability categories. All the study participants had lived in their respective communities for at least ten years. To get a sense of the level of community-based support on potable water access for those with physical disabilities, we also interviewed a representative from each of the study communities' Water and Sanitation (WATSAN) Committees, two representatives from the two district assemblies, and an official from the CWSA – the national agency in charge of rural water supply and management.

Data collection and analysis

We conducted semi-structured interviews with the selected PWDs in each community, as well as with community water managers and with officials from the government agencies. We conducted the household and key informant interviews in the local dialect (Twi), but the information collected was translated into English for subsequent analysis. This was possible as the main interviewer and a member of the research team is a native Twi speaker and fluent in English. Interviews with government officials were conducted in English, which is the official language for government business in Ghana, a former British colony. All interviews (including government officials and key informants) lasted approximately an hour. To ensure that errors were minimised, the responses from each participant were reviewed after every data collection.

The analysis began with the organisation of the field data, including the interviews, reflections, and write-ups from the observations, interactions, and other informal meetings. Audio recordings were transcribed manually and verbatim. We used qualitative data analysis software NVivo (Version 12) for data analysis, especially in the identification of themes, categorisation and contextualisation. Through data sorting, we developed a preliminary codebook based on field notes and transcripts from the interviews. We then recoded, based on drinking water access barriers. Through the thematic content analysis, we examined and recorded patterns (or themes) within data and among the participants' responses (Bradley et al., 2007; Hsieh and Shannon, 2005). We noted convergences and divergence in each response and interpreted accordingly. Following this, we presented the transcripts in the form of results based on the research question. In order to help draw sound conclusions, we discussed the results in relation to the existing literature, considering the findings and context.

RESULTS

This section presents the results on the barriers to potable water access for PWDs based on the categorisation by Groce et al. (2011) and Kuper et al. (2018); these categories include: (1) sociocultural barriers, (2) structural/technical barriers, (3) economic barriers, and (4) institutional barriers.

Sociocultural barriers

We assessed sociocultural barriers based on cultural and other social factors which pose restrictions on the ability of PWDs to access water services. Even though no specific cultural practices or taboos restrict PWDs' water access, disabilities themselves are stigmatised in rural Ghana. This negatively affects PWDs' confidence as potential participants in social activities. This stigmatisation not only limits their ability to visit public places but results in their being avoided by community members outside their immediate family. PWDs expressed concerns about the negative attitudes of community members that is displayed towards them in public places, including water collection sites. Referring to her experience of being ignored in public places, a participant revealed that the rest of the community had shunned her due to her swollen legs. Another added, "I don't even go out to public places. Even if I do, some people do not even want to sit close to me due to my condition" (Participant 1). She further added that the smell from the almost permanent sores on her legs usually created uncomfortable situations, increasing public

avoidance. PWD participants also reported that frequent expressions of sympathy made them uncomfortable. As a resident of Wioso noted, "When people see me, they expressed sympathy because of who I was before my disability. They look at the way I walk, and it makes me feel sad" (Participant 7).

These situations affect the social agency of PWDs, including their engagement in public activities such as water collection. Some participants expressed fear of being humiliated by others' actions or attitudes, which would usually discourage them from collecting water. As quoted by one participant, "I'm always discouraged from using the borehole. People do not want me to step on the platform with my feet. People look at me a lot, too. It makes me feel uneasy. Some people tease me when they meet me at the borehole" (Participant 5). Such social barriers act as impediments and pose a significant challenge to potable water access.

Technical/structural barriers

PWDs' access to potable water can be impeded by structural difficulties or technical barriers. Structural difficulties are imposed by the distance to water collection sites, which requires labour-intensive water haulage. All the PWDs in our study lacked water facilities at or near their dwellings; this necessitated walking and carrying water for about 550 metres, from the source to the point of use. Technical barriers also impeded water access; this took the form of water infrastructure that was designed such that it was difficult for some PWDs to operate, even in some cases making it impossible for them to use water collection facilities. As a participant explained, "I can't fetch the water myself when I get to the water source. I am weak and can't even climb the water platform" (Participant 4). Another participant in Wabrease echoed this, saying:

I could have fetched the water if there were friendly infrastructure and environment for fetching water. It's so difficult to reach the pump since I can't climb. I would have died if there was no one around. No one would have fetched for me, and eventually, I would have died. Thirst for water is different from that of hunger for food. Thirst for water is very dangerous (Participant 7).

Others also expressed concern over the structural issues associated with pumping water from the borehole. According to a resident of Wioso, "I am old and weak, and I cannot pump it myself. There is an instance I tried to fetch water for myself. I fell flat on the platform" (Participant 8).

Out of the ten PWDs who participated in the interviews, seven stated that they could not collect water by themselves at all. The remaining PWDs expressed concerns that can be categorised as 'extreme difficulty'. With an average of 550 metres to improved water sources and 800 metres to unimproved sources, PWDs usually relied on family members for water collection. One respondent noted that, "My daughter fetches water for me. Without her, I think I would have struggled for water. There would be no one to fetch water for me since I can't get up to fetch water for myself. The struggle occurs when there is no one around to assist" (Participant 5).

A participant in Esereso revealed the frustration she experiences when she needs water during the hours that her granddaughter is in school. She reflected that:

My daughter fetches water for me. Without her, I would have struggled for water. There would be no one to fetch water for me since I can't get up to fetch water for myself. The struggle occurs when there is no one around to provide assistance (Participant 4).

Those who live alone usually rely on friends and community members for their daily water needs. This reliance is sometimes hampered by the social stigma associated with physical disabilities. The gendered nature of household work in that locality, which was confirmed by all the study participants, places additional responsibilities on women who are already involved in water collection activities and poses difficulties for women with disabilities in male-dominated households. Voicing her frustrations as

someone who was involved in water collection, this quote from a participant in Wioso reflects the difficulties experienced by women with disabilities:

I have had swollen legs for years now. It seems this has come to stay. Since I live with my older brothers, they used to help with water collection at the early stages of my swollen legs. This does not happen anymore. They now see my swollen legs (disability) as normal since I have to force myself to do other things in the house as a woman, including water collection. Even though I haven't complained, water collection hasn't been easy (Participant 2).

Economic barriers

Economic factors add to water insecurity among PWDs. We assessed economic barriers based on the employment status of study participants, the level of household income, and the ability to meet basic needs including access to potable water. In this setting, water collection incurs costs in the form of fees charged for water use. Fees are paid either monthly or at the point of water collection through a volumetric-based system. Physical disabilities impose limitations on active employment. Except for one respondent, all the study participants were not active in the labour force and relied on remittances and supports from family members including parents, siblings and children. Despite their economic status, PWDs are usually required to pay for potable water just like any other community member. All the PWDs recounted bad experiences associated with water fees. According to one participant, "it is stressful being in this condition. I am sick and old. How can I pay for water?" (Participant 1).

In sum, PWDs either cannot pay for water or lack the means to retrieve it from the source. Those who cannot pay for their household water needs limit themselves to the quantity of water they are able to collect in order to meet daily needs such as drinking and cooking. The alternative to bought water is unmonitored sources; these can have even more structural barriers than do existing improved water collection sites, including requiring hauling from greater distances. Even though none of the PWDs were aware that access to potable water was their human right, they all agreed that their current physical condition should warrant exemption from water fees. National policies and programmes do not exempt PWDs from water payments, though Esereso has proposed to do this on a community level. Interviews with officials from the two district assemblies revealed that even though water managers at the community level can decide who could be exempted from water payment, no water fee exemptions exist for PWDs.

Institutional barriers

We assessed institutional barriers to water security based on the observed involvement of PWDs in water management decisions. We found that sociocultural and structural barriers act as major causes of institutional barriers. Persistent stigmatisation and its effect on PWDs' public agency impose restrictions on their participation in water management. One of the participants explained that her physical condition seriously discourages her from entering public places. "Even if they invite me to participate in water management decisions, I will not turn up", she told us. Even stigma aside, some PWDs are unable to travel to meeting venues because of physical distance and lack of transportation.

They felt that they had not been deliberately excluded from participating in water management decision-making processes; however, their failure to participate had to do with their disabilities and with the corresponding unavailability of the required assistance. As echoed by an official from the CWSA, "At the community level, you don't see so much discrimination in decision-making even though there is stigmatisation. To say that the PWDs are turned away or prevented from contributing during decision-making is something I have not heard of or experienced (...)". Asked about their willingness to participate, a respondent in Esereso explained that, "I think we should be given the opportunities to manage the water facilities. Our conditions make it impossible to do any farm work. Taking care of water facilities is something everyone in my condition can do" (Participant 2).

Available interventions for enhancing water security for PWDs

The Ghana National Water Policy (Government of Ghana, 2007) makes provision for meeting the special needs of PWDs in enhancing water security. As in most countries in the Global South, limited financial resources pose a challenge to providing for the water security needs of PWDs, which usually requires on-premises access to safely managed water. As a CWSA official explained, the initial focus of the 1994 National Community Water and Sanitation Programme was to provide water for unserved communities, but it overlooked the needs of PWDs. As the official noted, "Since it is difficult to achieve everything at a time as a developing country, vulnerable populations' needs will be considered with time". This was echoed by an official in one of the decentralised agencies, who commented that, "We cannot meet the needs of every community member due to limited resources. I admit distance and infrastructure pose a challenge for PWDs, but the situation is beyond what our capacity could handle". This omission reinforces the poverty and marginalisation of PWDs.

A claim by the CWSA official that pro-poor interventions exist for PWDs, however, could not be ascertained since there was no mention of a single policy programme. Exemptions from water payments have been left to the water managers in the various rural communities, and are usually poorly enforced. According to the CWSA official, "The community water managers have the responsibility to decide on water payment exemptions for vulnerable populations, including PWDs. Even though this been poorly done but it is challenging for the CWSA to enforce it". Although Esereso, one of the study communities, has proposed a fee exemption for the aged and PWDs, this proposal has not yet been put in place. Furthermore, despite the CWSA's efforts to improve borehole designs to accommodate PWDs, the current design still poses difficulties for some PWDs. This emphasises the need to work towards achieving on-premises water access.

Finally, this study found that the government receives supports from both locally based and international NGOs in its efforts to provide water security interventions for vulnerable people, including the provision of rural water infrastructure. In such interventions, in addition to being provided with enhanced access to water, PWDs usually are exempted from water payments. The interventions of these NGOs have contributed to rural water security in Ghana.

DISCUSSION

PWDs in most developing countries face many social, technical, economic and institutional barriers limiting their enjoyment of the human right to water. In addition to other types of barriers, PWDs in rural Ghana experience stigmatisation and social exclusion. Even though the study did not identify taboos that restrict PWDs from access to potable water in the study communities, it is widely recognised that such taboos are common among several cultural groups in some sub-Saharan African countries. In such cultural groups, PWDs are often prevented from using water facilities for fear they will contaminate water sources; in some instances, it is even taboo for PWDs to be seen near water sources (Groce et al., 2011). Some cultural practices in Ghana serve to marginalise PWDs and limit their societal involvement. Even where these cultural hindrances are uncommon, evidence from this study suggests that the low self-esteem experienced by PWDs limits their confidence and curtails their agency. They feel uncomfortable in the public sphere, which exacerbates their fear of going to retrieve water.

Although Ghanaian laws have been designed to challenge stereotypes, prejudices and certain traditional beliefs, PWDs face ongoing marginalisation and even exclusion due to weaknesses in the legal and regulatory structures meant to protect them (Ocran, 2019); thus, with insufficient enforcement mechanisms, the UN Convention on the Rights of Persons with Disabilities has not advanced the water rights of PWDs in rural Ghana. The result is ongoing marginalisation and isolation from social and economic activities such as access to potable water. Even when sociocultural barriers are minimal or non-existent, structural or technical difficulties hamper PWDs' attempts to access water (Dosu et al., 2021).

Structural difficulties are imposed by the distances that our study participants, like many other rural African women, are required to cover daily for water collection (Wilbur et al., 2013).

As all the households in the study communities lack water service in their homes, water collection from the source to the point of use is common. In most cases, water collection trips are made by carrying different sizes of containers, depending on the weight an individual can handle (Geere and Cortobius, 2017). Mechanised transportation is generally not available. Because of the long distances and disability-unfriendly water facilities, PWDs must rely heavily on friends and family members, mainly women and girls, to help meet daily water needs.

As already noted, water collection in most sub-Saharan countries is gendered (Graham et al., 2016). Estimates by WHO/UNICEF (2017a) suggest that where improved water sources are off household premises, women and girls are responsible for water collection in eight out of ten households. The results show that half of our study participants are women. Difficulties are even more extreme for women with disabilities in male-dominated households where women are solely responsible for water collection. Evidence from other studies (for example, Coles and Wallace, 2005) suggests that men who help in water collection and other household-related tasks are disparaged, which restricts men's involvement in water collection.

While water collection has been documented as being one of the reasons that water quality is often compromised (Awuah et al., 2009), water collection's labour-intensive nature also has negative health implications. There has been ample evidence on the health implications of water collection in both developed and developing countries (Geere et al., 2018; Hanrahan and Mercer, 2019). Hanrahan et al. (2014), for instance, identify chronic pain and fatigue as being among the negative health conditions associated with water collection. Based on research in a subarctic Indigenous community, Hanrahan and Mercer (2019) frame water insecurity as a potential mental health issue, in addition to being harmful to physical health. According to Wilbur et al. (2013), the effects of water collection on health could be even greater for PWDs and could exacerbate disabling illnesses. As Pradhan and Jones (2008) noted, technical barriers affect not only PWDs but also pregnant women, the aged, and sometimes children. Making water services easily accessible and user-friendly may thus benefit user groups besides PWDs.

In the provision of rural potable water services, it is necessary to consider adaptive technologies in addition to community support (White et al., 2016). Alternative water collection methods such as rainwater harvesting (RWH) adjacent to dwellings should also be explored (Mercer and Hanrahan, 2017), especially if water quality can be improved through means such as slow sand filtration, solar technology, or membrane technology (Heinrich and Horn, 2009). RWH has been employed elsewhere in Africa, including in Nigeria, one of Ghana's near neighbours (Ishaku et al., 2012).

The use of water fees is contested from the community to the international level (Baer, 2015; Hearne, 2015). Human rights advocates maintain that water access should be universally available and free for everyone, as prescribed by the 2010 UN resolution 64/292 on the human right to water. Indeed, the concept of water security includes unencumbered access, involving safely managed water. This argument has been strengthened by the adoption of the SDGs that seek to achieve universal, equitable access to safe and affordable water for all by 2030 (WHO/UNICEF, 2017a). In contrast, privatisation is sometimes recommended – often by national governments – as being the path to efficiency in water management (Hearne, 2015; Bakker, 2003; Reeves, 2011). Ghana has implemented water privatisation through neoliberal reforms, but this has been mainly in urban areas. In rural areas, the government bears much of the capital cost of water infrastructure (Obeng-Odoom, 2012), though rural water users are responsible for operation and maintenance costs and, in some cases, for servicing in case of breakdowns. These costs are covered mainly through water fees, which are paid monthly or through a per-bucket fee at water collection sites (Braithwaite et al., 2016; Dosu et al., 2021).

The passing on of these costs to users has repercussions on the water security of PWDs. As Francis (2005) argues, water payment initiatives that do not include government subsidies for vulnerable groups

can have devastating effects, exacerbating rather than alleviating poverty among vulnerable members of the population (see also Hanrahan et al., 2016). Disability and poverty are closely linked; poverty is considered highly prevalent among persons with disabilities, especially for those in rural areas in most developing countries (Pradhan and Jones, 2008). The World Bank estimates that, worldwide, PWDs are over-represented among the poorest of the poor, comprising about 20% of that group (Groce et al., 2014), a finding which our study results confirm. We found that most PWDs are in the economically inactive category, that they usually depend on other people to meet their basic water needs, and that they rely on government transfer payments. Given the scarce resources of the poor – among whom PWDs are over-represented – the fee collection strategy constitutes a heavy financial burden and makes water disproportionately expensive; this further contributes to the extreme poverty of the group and limits the amount of water they use. Besides depending on others for water retrieval, PWDs need the income that would normally go for water fee payment. As a coping strategy, they rely heavily on unmonitored water sources, which can compromise health and further increase marginalisation.

These barriers exist mainly because policies do not respond to the needs of PWDs and because PWDs are treated as invisible. As Kuper et al. (2018) noted, this challenge has been exacerbated by the limited opportunities for PWDs to participate in community water management decisions. We contend that the lack of participation stems from the sociocultural and technical barriers which limit the involvement of PWDs generally. The stigma and mobility challenges associated with disabilities often make it difficult to attend community meetings and to fully participate in community water management decisions, as well as in other community decisions. As a result, the perspectives, views and considerations of PWDs are not well represented in key decision-making processes (Pradhan and Jones, 2008). PWDs suffer water injustices involving access to water and exclusion from decisions and planning about water security. PWDs, especially women, are forced to suffer in silence as the water injustices they suffer go virtually unnoticed at the community and policy-development levels.

CONCLUSION

Ghana has several legal and constitutional provisions aimed at protecting socially and economically marginalised people, including PWDs. The right to equality, which is enshrined in the 1992 Constitution (Article 29), stipulates that every citizen is deemed equal to all others. This suggests that marginalised people, including PWDs, should have their basic needs met and their rights protected. In addition, Ghana is a signatory to the United Nations Resolution 64/292 and to the 2012 Convention on the Rights of People with Disabilities (Ocran, 2019). At this point, however, Ghana lacks appropriate policies and related mechanisms to ensure that the rights of PWDs to water security are respected. We observe that while there is no intention to further disadvantage marginalised populations, existing omissions indeed have this effect.

Our study signals the need for the transformation of potable water provision schemes in order that vulnerable populations such as PWDs, especially women with disabilities, experience inclusion rather than exclusion. Several barriers impede access to safe drinking water in our study communities, reflecting as well as reinforcing the marginalisation of PWDs, particularly women, similar to many other rural regions in sub-Saharan Africa (Saloojee et al., 2007; Smith et al., 2004). To achieve full water access, we recommend that every policy, programme and project strive to address the needs of PWDs through the robust use of both a disability and a gender lens, with an eye to their intersectionality. This approach should be maintained through planning, implementation and management processes.

A good first step would be a stated public commitment to undertaking the approach we have just outlined, raising awareness of the unique water access experiences of our study population. This would facilitate the representation of the views of PWDs in all aspects of potable water provision; their lived experiences should be explored and assessed rather than assumed. Without their participation, it is impossible to properly reflect their needs and goals. As suggested by one of our participants, PWDs –

especially women – can be included by giving them responsibility for day-to-day revenue collection activities. As the findings suggest, this will not only involve them in water management but will also engage them in productive activity and increase the incomes of those given such responsibilities. PWDs should also be exempt from water fees.

Addressing the needs of PWDs should be viewed as a national responsibility and something that potentially benefits everyone, as anyone can become disabled. Measures are necessary which specifically target the removal of barriers to PWDs' water access. Ghana can begin by working on targeted measures, focusing on the problem through a combined disability and gender lens. With the assistance of aid donors and NGOs, it can work towards achieving the SDG-related targets that are based on optimal water access. As one of the study's findings suggests, NGOs have offered significant support to government efforts; their involvement remains crucial to the enhancement of rural water security for PWDs.

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