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Intersections of inequality: The Multiple Struggles of Madhesi Dalit Women in Water and Sanitation

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Abstract

Access to clean water and sanitation is a fundamental human right, yet in Nepal, significant disparities persist, particularly for marginalized groups such as Madhesi Dalit women. Despite government policies aimed at equitable access, structural barriers rooted in caste discrimination, gender norms, and poverty continue to restrict these women's ability to secure safe water and sanitation services. This study employs feminist and intersectional frameworks to explore how caste, gender, and class intersect to shape Madhesi Dalit women's experiences in accessing water and sanitation in Ward No. 3 of Malangwa Municipality, Sarlahi district of Nepal. Using a qualitative methodology, data were initially collected from 61 households as the primary source of information due to the lack of data from the ward office. Following this, 21 in-depth interviews were conducted with Madhesi Dalit women, along with one focus group discussion and 12 key informant interviews with local officials and stakeholders. Findings reveal that Madhesi Dalit women face both physical and social constraints in accessing water and sanitation, exacerbated by climate change impacts, inadequate infrastructure, and persistent caste-based discrimination. These women often experience a "triple burden" of caste, gender, and poverty, compounded by cultural notions of impurity and untouchability that limit their access even within their own communities. Although local interventions such as tube well installations and toilet construction exist, financial and systemic barriers frequently prevent Madhesi Dalit women from benefiting fully. Institutional neglect, poor sanitation infrastructure, and exclusion from decision-making processes further marginalize them, increasing their vulnerability to health risks and social insecurity. The study highlights the gap between policy commitments and lived realities, emphasizing the need for inclusive, culturally sensitive, and gender-responsive approaches. This research contributes to understanding the complex social dynamics underlying water and sanitation

inequities and calls for revising existing policies to address intersectional marginalization. Only through targeted, participatory, and equitable interventions can the rights and dignity of Madhesi Dalit women be realized, advancing Nepal's progress toward Sustainable Development Goal 6.

Keywords

Water and Sanitation, Discrimination, Access, Intersectionality, Marginalization

1. Introduction

Safe drinking water is a basic human need (Ritchie et al., 2024) and essential not only for individuals' dignity and livelihoods but also for national development. Nevertheless, disparities persist in the availability and accessibility of water, both in terms of its quantity and quality, across various regions and social groups (Adagale, 2020). Globally, 2 billion people, or one in four, lack access to safe drinking water, including 703 million without a basic water service. Additionally, 3.5 billion individuals lacked safely managed sanitation, including 1.5 billion without basic sanitation services, and 2 billion lack access to basic handwashing facilities, with 653 million having none at all (UN Sustainable Development, 2023).

Ensuring Sustainable Development Goal 6, universal access to clean water and sanitation, has become an urgent priority, especially in the context of accelerating climate change (UN Sustainable Development, 2023). However, achieving this goal presents significant challenges in developing countries like Nepal. Although Nepal has contributed minimally to climate change, it remains highly vulnerable to its adverse impacts, such as global warming, which has led to the drying up of water sources (Government of Nepal, 2019).

Moreover, climate change, coupled with deep-rooted social inequities, further marginalizes vulnerable communities that rely heavily on natural resources like clean water, firewood, and fertile land for their survival (Fedele et al., 2021). During times of water scarcity, it is essential that no individual or group faces discrimination on the basis of sex, caste, ethnicity, age, language, religion, or socioeconomic status. Equal access to water must be upheld as a fundamental human right (Adagale, 2020). In this regard, the state bears three core responsibilities: to respect, protect, and fulfill the right to water, and these duties must be carried out without discrimination against any group (United Nations, 2002: pp. 8-18, as cited in Adagale, 2020).

Nevertheless, despite these legal and policy commitments, Dalits, historically positioned at the lowest tier of the Hindu caste hierarchy, continue to experience systemic discrimination, particularly in relation to water access (Shrestha, 2002; Adagale, 2020). They remain one of Nepal's most deprived and vulnerable populations, accounting for 13.8% of the total population according to the 2021 census (CBS, 2021).

The National Dalit Commission defines "Dalits" as those communities who, by virtue of atrocities of caste-based discrimination and untouchability, are most backward in social, economic, educational, political and religious fields, and are deprived of human dignity and social justice (Sunar et al., 2015). Dalits in Nepal are regionally categorized into three groups: Hill Dalits, Newar Dalits, and Terai/ Madhesi Dalits (Bishwakarma, 2011).

The National Dalit Commission has identified 22 Madhesi Dalit castes, such as:

Hill Origin: (1) Gaine, (2) Pariyar (Damai Darji, Suchikar, Nagarchi, Dholi, Hoodke), (3) Badi, (4) Vishwakarma (Kami, Lohar, Sunar, Wod Chunara, Parki, Tamata), (5) Sarki (Mijar, Charmakar, Bhool).

Madhesi Origin: (6) Kalar, (7) Kakaihia, (8) Kori, (9) Khatik, (10) Khatble (Mandai, Khanka), (11) Chamar (Ram, Mochee, Harijan, Rabidas), (12) Chidimar, (13) Dom (Malik), (14) Tamta (Tanti, Das), (15) Dusadh (Paswan Hajara), (16) Dhobi (Hindu, Rajak), (17) Patharkatta, (18) Pasi, (19) Ban tar, (20) Mushar, (21) Mestar (Halkhor) and (22) Sarvanga (Bhattachan et al., 2009).

Among Dalits, the status of Dalit women is the lowest compared to Dalit men and other women, facing severe vulnerabilities, exclusion, and marginalization (Tolange, 2024). Scholars such as Rege (1998) argue that Dalit women's experiences are distinct from those of both Dalit men and non-Dalit women (Lazarus, 2015: p. 85). Their realities are shaped by the triple burden of caste, gender, and class (Dutta & Bharti, 2016). The entrenched caste system, structured around the notions of purity and pollution, reinforces this marginalization. One of the most visible forms of caste-based discrimination relates to water, where the touch of a Dalit is still regarded by many as impure (Nepali, 2018). This practice severely limits their access to shared water sources, further entrenching social exclusion.

Madhesi Dalit women face even more severe human development challenges compared to Hill Dalit women, largely due to intersecting factors of regional disparity, socio-cultural norms, and limited access to services (Khadka et al., 2023). The structural nature of this exclusion is evident in recent data from the Informal Sector Service Centre (INSEC, 2024), which reveals that Dalit women accounted for 22.58% of all female victims of violence in Nepal, highlighting their heightened vulnerability and systemic neglect.

Socioeconomic indicators reflect the deep-rooted exclusion of Dalit communities in Nepal. According to the Nepal Living Standards Survey (NLSS) III conducted in 2010/11, poverty among Dalits remains significantly higher than the national average. Specifically, 43.63% of Hill Dalits and 38.16% of Terai Dalits were living below the poverty line, compared to the national poverty rate of 25.16%. These figures clearly demonstrate the disproportionately high level of poverty experienced by Dalit communities, especially when contrasted with dominant caste groups such as Brahmins and Newars, whose poverty rates were substantially lower. This disparity underscores the persistent economic marginalization faced by Dalits in Nepal (CBS, 2021). Among Dalits, Madhesi and Hill Dalits are particularly disadvantaged, with only 1.2% and 1.5% representation in profes-

sional and technical occupations respectively (FEDO Report, 2015).

The term "Madhesh" originally referred to *Madhyadesh* (central region in Hindu tradition), but now denotes the Terai plains bordering India (Riaz & Basu, 2010). Although technically referring to all Terai residents, "Madhesi" is commonly used to denote specific cultural and ethnic groups within this region. Consequently, "Madhesi Dalit women" refers to Dalit women from the Madhesi community residing in the southern Terai region of Nepal (Pandey, 2022). These women are among the most marginalized in Nepal, facing layered disadvantages due to their caste, class, gender, and ethnic identities. They have historically been excluded from processes of citizenship and national identity formation, which have predominantly centered around hill-based narratives (Pandey, 2022).

Politically, Dalit representation remains largely symbolic. Between the 2017 and 2022 local elections, the number of Dalit deputy mayors and vice-chairpersons declined, with only 2.19% of ward chair positions secured by Dalits. While 98.01% of Dalit ward members were elected, this is primarily due to mandated quotas under the Local Level Election Act, 2017, rather than organic political inclusion. Participation in planning and budgeting remains limited for most Dalit women, particularly at the local level (Republica, 2022).

Education and health indicators further underscore this marginalization. The literacy rate among Madhesi Dalits, although improved from 34.5% in 2001 to 48.1% in 2021, remains far below the national average of 76.2% (CBS, 2021). Only 5.5% of Tarai/Madhesi Dalits have access to improved sanitation facilities, compared to 30.6% of Hill Dalits and 41.7% nationally (WaterAid, 2022). Inadequate sanitation infrastructure increases health risks, forcing many women into unsafe open defecation, thereby exposing them to the threat of harassment and violence.

Landlessness is another major issue. About 41.4% of Madhesi Dalits are landless compared to 36.7% of Hill Dalits. The average landholding among Tarai Dalits is the lowest in the country at 0.1895 hectares, well below the national average of 0.3757 hectares (Subedi & Gautam, 2018: pp. 7-10). Their low political participation (2.7%) and minimal representation in national leadership, only 0.3% in the Council of Ministers, reflect persistent structural exclusion (Subedi & Gautam, 2018: pp. 7-10).

Within this context, Madhesi Dalit women face the most acute challenges. Only 11.8% reach secondary education, while a mere 0.8% are employed in professional roles. Maternal health remains a critical concern, with a maternal mortality rate of 850 per 100,000 live births, far exceeding national averages. Cultural and structural barriers also persist, as harmful practices such as female infanticide, early marriage, polygamy, and enforced widowhood continue to affect uneducated Madhesi Dalit families (Prasad, 2014).

In this broader landscape of exclusion and inequality, the struggle for water is not merely about infrastructure; it is deeply intertwined with class, caste, and gender dynamics (Johns, 2012). Recent research demonstrates that, despite policy commitments to inclusion, entrenched caste and gender hierarchies continue to

shape WASH access and outcomes in Nepal. For example, Udas et al. (2023) found that Dalit women remain among the most marginalized in local WASH governance, often excluded from meaningful participation and decision-making, while Dhital et al. (2024) identified that mothers from lower castes, especially in the Terai, experience poorer WASH access and bear a disproportionate burden of water collection and sanitation-related health risks. These findings are echoed in other empirical studies, which highlight that technical interventions alone are insufficient without addressing the underlying social and power relations that perpetuate exclusion.

These findings reinforce a growing consensus in empirical literature: technical solutions alone are inadequate if they fail to confront the underlying structures of power and exclusion. In this context, the present study employs field-based qualitative methods to explore how intersecting identities, specifically caste, gender, and class, shape the everyday realities of Madhesi Dalit women in accessing water and sanitation services. By centering their lived experiences, this research provides critical insights to inform the development of gender-sensitive and socially inclusive WASH policies, especially in the context of climate adaptation and sustainable development.

2. Methods

The research design employed qualitative methods to generate evidence grounded in both observation and theoretical insight. This comprehensive data collection was essential due to the absence of prior detailed profiles or information specifically about Madhesi Dalit women in Ward 3. Collecting foundational data enabled an accurate understanding of the community's demographics, living conditions, and key concerns related to water, sanitation, and social practices, aligning with the study's objective to contextualize qualitative inquiry within real-life settings.

To establish a strong empirical foundation, comprehensive demographic and household information were initially collected from all 61 Madhesi Dalit households in ward three, comprising the sub-castes of the Ram, Paswan, and Dom communities. A systematic sampling method was then employed by selecting every third household, resulting in a purposive sample of 33 percent, which became 21 Madhesi Dalit women participants (10 Ram, 7 Paswan and 4 Dom). This sampling strategy ensured inclusivity and representativeness across all subgroups within the community, minimized selection bias, and supported the development of a robust qualitative framework.

Data collection included 21 in-depth interviews (IDIs), one focus group discussion (FGD), and 12 key informant interviews (KIIs), all guided by a feminist approach that prioritized participant voices. Open-ended questions encouraged participants to speak freely, while the FGD revealed shared community concerns. KIIs with service providers and community leaders added institutional insights, supporting triangulation.

Researcher positionality played a critical role. As a non-Dalit, educated out-

sider, the researcher's identity influenced field access and participant rapport (Mishra, 2018). To build trust and contextual sensitivity, two local women were engaged as guides and translators with support from the Deputy Mayor. Their involvement was essential for navigating linguistic and cultural barriers.

The focus on Madhesi Dalit women stems from their layered marginalization based on caste, gender, and regional identity. Despite facing significant challenges in water, sanitation, and health, they remain largely excluded from policy and academic discourse. Centering their voices aims to expose structural barriers and contribute to inclusive development debates.

Theoretical grounding was drawn from standpoint theory (Harding, 1989), which emphasizes the epistemic value of marginalized perspectives. The caste-based "purity and pollution" concept (Johns, 2012) and power-subordination theory (Mohanty, 1984; Khanal, 2019) further contextualize their exclusion. Intersectionality theory (Khanal, 2019) highlights how overlapping identities exacerbate the burden of water-fetching, disease vulnerability, and inadequate sanitation.

For analysis, transcripts of interviews and discussions were translated from Nepali to English. An inductive thematic approach identified patterns across themes like water use, sanitation access, exclusion, and gendered labor. Kobo Toolbox was used to manage household data, and triangulation was a central feature of the analysis, as data from household information, interviews, FGDs, and KIIs were cross-verified to ensure reliability and a holistic understanding of both statistical trends and lived experiences. Reflexivity was maintained through detailed field notes and iterative review of transcripts, allowing the researcher to identify gaps, address silences, and ensure a nuanced interpretation of the data. This rigorous, multi-method approach not only highlighted the structural inequalities faced by Madhesi Dalit women but also empowered participants by valuing their perspectives and fostering agency in shaping the study's findings.

3. Findings

3.1. Caste Based Inequality: A Deeply Embedded Challenge

Although Dalits are often treated as a single marginalized group, internal stratification among sub-castes such as Ram, Paswan, and Dom continues to shape social status and access to resources. In this study, among the 61 Madhesi Dalit there were women from Ram, Paswan, Dom. These sub groups locally also known as Mizar, Chamar, Mahara, Ranjan (Ram), Dusar (Paswan), and Malik (Dom), hold their own internal hierarchies, with Ram often perceived as relatively higher in status.

Qualitative data, including in-depth interviews and FGDs, revealed that women from the Ram sub-caste often saw themselves as superior in terms of hygiene and social standing. This distinction manifested in attitudes towards cleanliness and sanitation practices, suggesting an aspiration to align with dominant caste norms—a phenomenon sociologist Srinivas (1956) termed *Sanskritization*. For example, one participant immediately corrected an interviewer who misidentified her as Paswan, saying, "No no, I belong to the Ram caste," (33-year-old Madhesi

Dalit woman, Ram sub-caste, personal communication, 2024), signaling the importance of caste identity even within the Dalit community.

While participants outwardly denied practicing discrimination among sub-castes, subtle behaviors and expressions indicated otherwise. This internal hierarchy also influenced access to shared water sources and improvised toilets, with women from lower sub-castes sometimes facing exclusion or stigma. Despite the legal abolition of caste-based untouchability through the New Muluki Ain in 1963 (Bhattachan et al., 2009), discriminatory practices persist in everyday life, particularly around water use.

Cultural and social norms often reinforce these divisions, and as Mishra (2021) argues, women themselves may perpetuate caste hierarchies due to social pressure, fear of exclusion, and limited economic or educational alternatives. Deep-rooted beliefs and religious rituals further normalize these distinctions (Galtung, 1990). Thus, while legal frameworks promote equality, the lived experience of Madhesi Dalit women across sub-castes reveals nuanced inequalities in access to water and sanitation.

Atrocities and discrimination against Dalits are so pervasive that many Dalits are forced to believe that they are responsible for their own sufferings and exclusion from accessing water and Dalits themselves believe that they should behave according to their social status (Dixit, 2020: p. 200). The study also shows that some individuals exploit subcaste divisions or rivalries within the Dalit community to weaken or dismiss cases against them. According to a 2010 Navasarjan Trust study, there exists a form of 'horizontal discrimination,' where caste discrimination is practiced even among Dalits. Similar to caste Hindus, Dalits also discriminate when accessing or sharing water with other Dalits (Dixit, 2020: p. 199). This intra-Dalit hierarchy is reinforced by historical divisions in occupation, social mobility, and access to resources. Studies show that higher-status Dalits, such as Ram or Paswans, may discriminate against lower-status Dalits, like Dom, Musahars, to assert dominance and align themselves with the mainstream caste system, which provides them with relative social and economic advantages. This process, known as "Sanskritization" (Srinivas, 1956: p. 482), allows Dalits of higher sub-castes to imitate upper-caste behaviors and norms to gain social legitimacy, often at the expense of those ranked below them.

It highlights the presence of a caste system within the community, even though it may not always be explicitly acknowledged. The social boundaries that divide them are subtly maintained, as demonstrated by their gestures and expressions during interactions.

3.2. Theory of Power and Subordination of Women

The struggle for access to water is intricately tied to issues of power, deeply interwoven with class, caste, and gender. Water is not merely a physical necessity but a symbol of social control and exclusion. At the grassroots level, particularly in caste-based societies like Nepal, the fight over water reflects broader power strug-

gles both over natural resources and social behavior (Johns, 2012). This is especially visible in the case of Madhesi Dalit women, who experience multiple layers of marginalization.

3.2.1. Power and Gender Inequality

Finkelhor (1981) theorizes that power imbalances stem from gender inequality, with abuse and control more likely where such disparities are greatest. He notes that those who are physically stronger and socially privileged often dominate those who are weaker or have limited access to resources. In patriarchal settings, men typically hold dominance over women due to factors like age, physical strength, and social status. As Khatri (2022) elaborates, the less power a woman has in relation to her husband, the more susceptible she is to abuse. Madhesi Dalit women, who lie at the intersection of caste and gender subordination, face discrimination not only from non-Dalit individuals but also from within their own communities, including Dalit men (Velaskar, 2016).

Foucauldian Analysis of Power:

Foucault's (1998) concept of power, especially as applied to governance and discipline, is relevant in understanding how water and sanitation access are governed. Foucault (1977) views power not only as hierarchical domination but as a network embedded in institutions, discourses, and everyday practices (as cited in Sullivan, 1996). His theory enables an analysis of how caste, patriarchy, and state mechanisms regulate access to water and sanitation services for Madhesi Dalit women. These women experience biopolitical control whereby social norms and caste hierarchies dictate their sanitation needs and mobility. Foucault's idea of disciplinary power also explains how purity and pollution norms operate as tools of social control, reinforcing caste-based restrictions and limiting the autonomy of Dalit women in public and private spaces.

3.2.2. Caste, Gender, and Patriarchy

Power relations in caste-based societies are deeply gendered (Mohanty, 1984). In Nepal, the caste system has entrenched hierarchical social structures where Dalit women are positioned at the very bottom. Their experiences are marked by the triple burdens of caste, class, and gender, resulting in severe social, political, and economic marginalization (Khatri, 2022). Uma Chakravarti (1993) describes Brahmanical patriarchy as a system that not only stratifies caste but also regulates women's bodies and mobility, thereby intensifying Dalit women's subordination.

As both Dalits and women, and often from economically disadvantaged backgrounds, these women face violence and discrimination within both public spaces and their own households. Structural oppression, thus, operates on multiple levels. Mohanty (1984) argues for analyzing caste, class, and patriarchy together to understand women's varied experiences of inequality and subordination.

3.2.3. Power Hierarchies in Water and Sanitation Access

Control over resources like water is both a practical and symbolic assertion of

power. In caste-stratified societies, access to water often reinforces social hierarchies. The practice of untouchability, particularly regarding water, persists through concepts like "*pani na chalne jat*" (Castes from whom water is not accepted), denoting those whose touch "pollutes" water sources (Nepali, 2018). Madhesi Dalit women, in particular, face exclusion from public water sources due to caste-based prohibitions.

Data reveals that 49 households (80.33%) experience water scarcity due to heat, while 37 households (60.66%) lack enough water for daily needs like bathing, cleaning, and cooking. Despite this, 54 families (88.52%) do not fetch water from non-Dalit households. Among them, 42 Madhesi dalit women that is (77.78%) reported that they are socially barred from accessing water in non-Dalit homes, and 12 Madhesi Dalit women (22.22%) focus on caste-based restrictions as a specific challenge, and that implies their being a Dalit or "of low caste" entails that they are not even allowed to touch or use the tube wells belonging to people of higher castes. Even the 7 households (11.48%) who do collect water from such households face strict limitations, such as being forbidden to touch utensils or containers, underscoring deep-rooted caste prejudices.

A 32-year-old woman from the Ram sub-caste described the exclusion she experiences when fetching water:

"When we go to fetch water, if we touch their utensils, they stare at us with big eyes. As soon as they see us coming, they immediately take their containers away and place them elsewhere. Sometimes, we have to call them and request them to remove the containers" (32-year-old Madhesi Dalit woman, Ram sub-caste, personal communication, 2024).

Such practices align with Adagale's (2020) findings in Maharashtra, where caste-based water access is regulated through notions of purity and pollution, echoing the discriminatory norms embedded in ancient Hindu texts like Manusmriti. These examples illustrate how caste and gender intersect to maintain social hierarchies.

3.3. Double Oppression: Gender and Intra-Caste Discrimination

Madhesi Dalit women face dual oppression: caste-based exclusion from the broader society and gendered subordination within their communities. As Suri (2018) points out, women from marginalized groups are often denied decision-making roles and viewed as incapable of representing their interests. Mohanty (1984) warns against homogenizing women as uniformly oppressed, urging scholars to analyze the material and ideological structures shaping their lived experiences.

In Malangawa ward, unpaid care work, particularly related to water management, is predominantly borne by Dalit women. According to the data, 50 participants (81.97%) are solely responsible for fetching water, while only 1.64% report assistance from husbands or children. Similarly, 48 participants (78.69%) are solely responsible for cleaning their homes. This gendered division of labor exacerbates time poverty and limits women's participation in economic and political life.

3.4. The Intersection of Caste, Class and Gender Discrimination in Access to Water and Sanitation

Not all women experience this exclusion similarly, as norms related to untouchability and segregation add to the difficulties of Dalit women (Kaijser & Kronsell, 2014). Dalit women often experience multiple forms of marginalization, including exclusion from mainstream society, economic disenfranchisement, and limited access to education and employment opportunities (Lazarus, 2015). These intersecting factors contribute to their disproportionate burden in water-fetching responsibilities, exposure to waterborne diseases, and lack of adequate sanitation facilities.

The concept of 'intersectionality' originated from Black feminist activism and was first introduced by Kimberle Williams Crenshaw, an American critical legal race scholar, in 1989. Crenshaw coined the term to illustrate the dual discrimination faced by Black women, critiquing the prevailing single-axis framework in antidiscrimination law, feminist theory, and anti-racist politics for its focus on the experiences of the most privileged members of subordinate groups (NHS Scotland, 2022). Davis (2014) argues that intersectionality has been crucial in feminist theory, highlighting how race, class, and gender shape women's experiences. Initially led by Black feminist scholars who introduced concepts like "double jeopardy" (Beale, 1970) and "triple jeopardy" (King, 1988), intersectionality shifted to emphasize power dynamics and social inequalities affecting individuals with layered identities (Davis, 2014; Khanal, 2019).

Intersectionality looks at "interlocking" systems of oppression and how these play out in individuals' lives (NHS Scotland, 2022) and provides a lens through which to examine how various social categories intersect and shape individuals' experiences, including their access to water and sanitation. For instance, the interconnectedness of gender, caste, and socioeconomic status (Backelin-Harrison, 2018) can influence one's access to clean water and sanitation facilities. These intersecting factors interact within broader power structures, such as government policies and societal norms, which can either facilitate or hinder equitable access to essential resources (Backelin-Harrison, 2018). Consequently, individuals may face different levels of privilege or disadvantage that intersect to shape people's experiences (NHS Scotland, 2022) in accessing water and sanitation services, leading to diverse lived experiences of inequality in this domain.

In this regard, Madhesi Dalit women face multiple layers of discrimination when accessing water, rooted in their caste, gender, economic status, and lack of education. Many participants shared that being Dalit, as per the Dalit women from Dom stated, "We called lower caste" often means their voices go unheard. 17 Madhesi Dalit women (34%) expressed that no one listens to them because of their caste alone. Additionally, 13 Madhesi Dalit women (26%) attributed their difficulties in accessing water to a combination of caste-based discrimination, poverty, and illiteracy, and face ignorance. Three women (6%) highlighted that being both Dalit and poor further marginalizes them, while another 6% pointed to their gen-

der, caste, poverty, and illiteracy as contributing factors. Some women mentioned that caste-based discrimination specifically hinders access to water for Dalit women. Moreover, challenges like poor health, being single, or having an ill husband further compound their struggles to access water. Finally, six women (12%) of respondents cited their lack of land, financial resources, and social standing as significant barriers. This data highlights the complex interplay of caste, gender, and socioeconomic status that limits Dalit women's access to water.

While asking why they face discrimination and how, a similar answer was given during an in-depth interview with the women of Ram, Paswan, and Dom. A 33-year-old Madhesi Dalit woman from the Dom sub-caste reflected on the intersection of caste and economic status in her community, stating,

"If Brahmins or Nepalis were born into the Rajput caste, it wouldn't have been like this. It seems that way. Currently, if we had a lot of money, it would have been better. We would go abroad and earn money" (33-year-old Madhesi Dalit woman, Dom sub-caste, personal communication, 2024).

A similar perception was given in a focus group discussion. A 29-year-old Madhesi Dalit woman from the Ram sub-caste described the pervasive caste discrimination she faces, stating,

"There are various forms of caste discrimination. The non-Dalits do not allow us to fetch water. There is discrimination in schools and health institutions as well. We have to live separately; non-Dalits do not eat anything we touch. No one has spoken about the discrimination. I told my sister-in-law that this is how it is, and she said to let it go; nothing has been said to the local authorities" (29-year-old Madhesi Dalit woman, Ram sub-caste, personal communication, 2024).

Focus group discussions further reveal how caste and socio-economic factors exacerbate these challenges, emphasizing that while institutional efforts exist, deeply rooted social attitudes and practices continue to hinder true equality for Dalit women. These intersecting barriers create a cycle of marginalization where caste-based exclusion, economic hardship, and illiteracy contribute to their struggles.

Despite some institutional efforts, deeply ingrained social attitudes and practices maintain inequities that disproportionately burden Dalit women, underscoring the need for systemic change to address these multifaceted inequalities.

3.5. Structural Inequalities in Access to Water and Sanitation

The most severe and inhumane form of discrimination and untouchability becomes evident in issues related to water access (Johns, 2012). The link between the hierarchical social structure in Hindu society is due to a notable characteristic is the legal endorsement of a highly stratified social structure, leading to the marginalized existence of women and lower caste individuals under humiliating conditions. Both caste hierarchy and gender hierarchy serve as fundamental pillars of the brahmanical social structure (Chakravarti, 1993).

In the KII, in-depth interviews, and FGDs, participants revealed that no Madhesi Dalit individuals are involved in water and sanitation committees, with all of

participants not being members, reflecting systemic exclusion from decision-making processes. This exclusion, driven by social discrimination, limited awareness, and power imbalances, significantly impacts the effectiveness of water and sanitation initiatives. A KII local elected Madhesi Dalit woman member shared her experience with ward committee meetings, stating,

> "I attend the ward committee meetings, but I'm not included in the committee. I don't know much about what goes on there, so I don't say anything. I only know how to write my name, and I sign wherever they ask me to" (local elected Madhesi Dalit woman member, personal communication, 2024).

The study reveals a significant disparity in Malangwa Municipality's water committee formation. Although the committee exists, Dalit settlements are often excluded unless their inclusion is compulsory. The local practice is to include Dalits only when absolutely necessary, as the chair of the Dalit NGO mentioned:

> "The municipality does not include Dalit settlements in the committee unless it is mandatory. They are only included when there is a required presence; otherwise, they are left out. Dalits are not involved in important decisions, and they cannot voice their concerns either. The poor are busy with their own work and don't even understand the reasons behind their exclusion" (Key informant, Chairperson of Dalit NGO, personal communication, 2024).

This exclusionary approach makes the water management committee largely non-functional, particularly in addressing the critical needs of marginalized communities. The lack of active inclusion of Dalits in water and sanitation management further exacerbates the challenges faced by these communities in accessing basic water and sanitation services.

Additionally, water scarcity remains a critical challenge for Madhesi Dalit women. Among the participants, only 12 women (19.67%) reported having access to water through tube wells or household taps, while the majority are compelled to either purchase water or fetch it from neighboring households. This dependency reinforces both financial burdens and social hierarchies within the community.

A key informant from the Bagmati welfare society Nepal NGO, which works on WASH (Water, Sanitation, and Hygiene) issues in the area, noted:

> "There is a significant water shortage. The government has installed a water tank for drinking water, which supplies water, but it is not enough. People are drinking jar water. Those who have the financial means buy water, while people from the Dalit community rely on nearby households to get water" (Key informant, Bagmati welfare society Nepal, the NGO, personal communication, 2024).

Beyond water access, the lack of a proper drainage system exacerbates public health risks. The KII, in-depth interviews, and FGDs clearly indicate that Malangwa lacks any functional drainage system. Observations during field visits showed open, foul-smelling drains along roadsides, originally meant to channel rainwater.

However, due to a lack of government investment in covering these drains, they have become dumping grounds for toilet, kitchen, and bathroom wastewater.

These uncovered drains pose serious health and safety risks, particularly for children and elderly residents.

A 42-year-old woman from Ram, during an in-depth interview, shared her distressing experience:

> "We go to the ward office to raise concerns, but they don't listen. We've built a wooden drain ourselves. I used half my household income just for transporting the materials. A child fell into the open drain and fainted. I, too, fell into it once, and my entire body was covered in worms. I keep telling the ward office, but they just say they'll fix it and nothing happens" (42-year-old woman from Ram sub-caste, personal communication, 2024).

These lived experiences highlight not only the poor infrastructure but also the neglect and lack of accountability from local authorities, leaving marginalized communities to self-manage critical public health challenges at their own expense.

Feminist perspectives emphasize the urgency of addressing these structural inequalities (Backelin-Harrison, 2018). Madhesi Dalit women perpetuate caste-based patriarchy because of the internalization of caste-based patriarchal values due to ideology, economic dependency on men or other household heads, class privilege, and the use of force if and when women disobey associated rules (Mishra, 2019). Feminist analysis emphasizes the need to address structural inequalities and power dynamics that perpetuate these disparities, advocating for policies and interventions that prioritize the rights and needs of marginalized communities, including Dalit women, in water resource management and infrastructure development.

Cultural discrimination in access to sanitation

Cultural discrimination plays a significant role in limiting access to sanitation, particularly for marginalized communities like Dalits. Women, more than men, adhere to social, cultural and caste-based rituals. Women also transfer caste and gender "knowledge" and rituals to the next generation (Mishra, 2019). In Malangwa Ward Three, cultural norms and beliefs create barriers to the use of sanitation facilities, even when they are available. A Dalit NGO representative highlighted that "all of the population does not use toilets, particularly among Dalits population due to cultural beliefs, such as the notion that a daughter-in-law cannot use the toilet after her elder brother-in-law" (Key informant, Chairperson of Dalit NGO, personal communication, 2024). This practice, though less common today due to increased education and urban migration, still restricts toilet usage. A KII focal person from the Women, Children and Senior Citizen Division explained that:

> "In general culture, there is a tradition in Madhes where a daughter-in-law is not allowed to touch, see, or speak to her elder brother-in-law. This cultural norm makes it difficult for a daughter-in-law to use the toilet after her elder

brother-in-law has used it" (Key informant, focal person, Women, Children, and Senior Citizen Division, personal communication, 2024).

This cultural belief remains a significant factor in open defecation. Due to the lack of toilets and some patriarchal norms, 93.75% of participants resort to defecating in open fields, and 32.35% reported experiencing negative incidents while defecating outside.

In an in-depth interview, a 42-year-old Madhesi Dalit woman from the Ram sub-caste shared her experience of being chased by a man while defecating outside. Fearing for her safety, she ran away and later recounted the incident to her husband. In response, they immediately sought financial help from neighbors and dug a pit for a ring toilet to avoid such situations in the future. Notably, 18.18% of participants reported being scolded by property owners or others, illustrating the tension between societal norms and the harsh realities of those in need. Additionally, incidents such as being stared at or having stones thrown at them reflect a culture of judgment and aggression, with 9.09% of participants indicating they faced physical threats. These issues persist, even as norms gradually shift with increasing education and migration.

The Role of Government: Progress and Persistent Gaps in Water and Sanitation for Madhesi Dalit Women

The role of government in addressing water and sanitation challenges for Madhesi Dalit women in Malangwa Municipality is marked by both notable initiatives and ongoing shortcomings. While the government and local authorities have not entirely neglected the Madhesi Dalit community, evidenced by the construction of water tanks, distribution of hand pumps, and organization of waste management and awareness programs, these efforts often fall short of meeting the community's real needs. Water scarcity remains a chronic issue, with technical interventions such as water tanks and hand pumps providing only partial relief, especially for those unable to afford alternative solutions. Waste management initiatives, including weekly garbage collection and road drainage improvements, have shown some progress, but service delivery is inconsistent and often fails to reach the most marginalized households. The in-depth interview with a 38-year-old woman from the Ram sub-caste community stated:

"Compared to before, there has been a change. Earlier, trash used to be thrown directly onto the roads, but now a tractor comes to collect the garbage every 10 to 12 days. If it doesn't come, people take the trash to the public land (government-owned land) and dump it there" (38-year-old woman from Ram sub-caste, personal communication, 2024).

Similarly, the declaration of Open Defecation Free (ODF) status, while a milestone, has not translated into sustained behavior change or adequate sanitation infrastructure for Dalit households, with many reverting to open defecation due to a lack of follow-up and practical support. Awareness campaigns and the adoption of gender and inclusion policies signal a positive shift, yet their effectiveness

is undermined by irregular implementation and limited community engagement. Stakeholders emphasize that meaningful change requires greater participation from Madhesi Dalit women, consistent monitoring, better infrastructure, and a commitment to dismantling caste-based discrimination. Ultimately, while government action has laid some groundwork, persistent gaps in service delivery, accountability, and social inclusion continue to hinder the realization of safe water and sanitation as universal rights for Madhesi Dalit women.

4. Discussion

The findings of this study reveal the deeply entrenched and intersecting barriers faced by Madhesi Dalit women in accessing water and sanitation, highlighting how caste, gender, and socio-economic status combine to perpetuate exclusion and vulnerability. The lived experiences and voices of Madhesi Dalit women, as well as perspectives from local leaders and NGOs, underscore the multifaceted nature of these challenges, which are not only infrastructural but also social, cultural, and political.

Caste-Based Marginalization and Social Exclusion

The persistent labeling and stereotyping of Dalits as poor, illiterate, and socially isolated reflects a broader societal structure that systematically denies them dignity and equal access to resources. This is evident in both the language used by participants and the attitudes of local officials, reinforcing a sense of isolation and powerlessness. The marginalization experienced by Madhesi Dalit women is not only a matter of social perception but is embedded in everyday practices, such as being denied access to shared water sources or being forced to use inferior facilities. These findings echo previous research that highlights how the term "Dalit" itself is synonymous with struggle, deprivation, and the ongoing fight for justice and equality.

Infrastructural Deficits and Institutional Neglect

The study documents significant infrastructural challenges, including the lack of accessible water facilities, inadequate sanitation systems, and the near absence of proper drainage in Dalit settlements. These deficits are not simply technical oversights but are rooted in spatial segregation and institutional neglect, where resources and services are disproportionately allocated to higher-caste areas. The accounts from participants illustrate how Dalit communities are often forced to create makeshift solutions, such as building their own drains, at great personal and financial cost. Despite repeated appeals to local authorities, improvements are slow or absent, pointing to a pattern of bureaucratic inertia and a lack of political will to address the needs of marginalized groups.

Health Risks and Water-Related Diseases

The health impacts of inadequate water and sanitation infrastructure are severe, with a high prevalence of waterborne diseases such as diarrhea, typhoid, and cholera reported among participants. The contamination of groundwater and the presence of open drains exacerbate these risks, particularly for children and the elderly. The detection of arsenic in tube well water adds another layer of long-

term health concern. These findings highlight the urgent need for targeted interventions that address both the immediate health risks and the structural causes of environmental vulnerability.

Cultural Barriers and Gendered Norms

Cultural practices and gendered expectations further restrict Madhesi Dalit women's access to water and sanitation. Deeply rooted taboos, such as prohibiting daughters-in-law from using toilets after elder brothers-in-law, persist despite improvements in infrastructure. These norms are not merely symbolic; they have tangible health and social consequences, sustaining open defecation and reinforcing gender hierarchies. The study also finds evidence of gradual change, with some participants noting a decline in these practices due to increased education and urban migration. However, the persistence of such beliefs underscores the need for culturally sensitive interventions that go beyond technical solutions and engage directly with local values and power dynamics.

Agency, Coping Strategies, and the Role of Institutions

Despite these challenges, Madhesi Dalit women demonstrate resilience and agency through various coping strategies, such as forming support networks and advocating for their needs at the community level. However, their efforts are often undermined by systemic barriers, including limited representation in decision-making bodies and a lack of meaningful engagement from local authorities. The study highlights the importance of inclusive, community-led approaches and the critical role of NGOs and local stakeholders in bridging gaps left by government programs.

Towards Inclusive and Sustainable Solutions

The discussion underscores that addressing water and sanitation inequities among Madhesi Dalit women requires more than infrastructure development. It demands a holistic approach that tackles caste-based discrimination, gendered power relations, and institutional neglect. Effective interventions must be grounded in the lived realities of marginalized communities, incorporating participatory planning, culturally sensitive education, and sustained political commitment. Only by confronting the intersecting structures of inequality can meaningful and lasting improvements in water and sanitation access be achieved for Madhesi Dalit women.

5. Conclusion

In conclusion, the multiple struggles faced by Madhesi Dalit women in accessing Water and Sanitation services in Malangwa are a result of the intersection of caste-based discrimination, gender inequality, economic hardships, and social exclusion. Despite some government initiatives aimed at improving infrastructure and sanitation, these women continue to face significant barriers, including limited access to resources, irregular waste collection services, and inadequate sanitation facilities. The entrenched caste hierarchies and cultural taboos further hinder their ability to fully participate in community decision-making processes and benefit from available services.

The need for inclusive policies that foster equitable access to water and sanitation, promote community education, and empower Madhesi Dalit women to engage in decision-making is critical. A comprehensive approach that combines community-based education, policy reforms, and the dismantling of caste and gender-based barriers is essential for improving the health and well-being of Madhesi Dalit women. By addressing these intersections of inequality, stakeholders can contribute to creating a more resilient, equitable, and inclusive community where all women have the opportunity to thrive. Economic constraints remain a significant barrier, as many Madhesi Dalit women rely on unstable daily wage labor, which prevents them from investing in adequate water and sanitation facilities. The lack of formal education further compounds these issues, leaving many women ill-equipped to advocate for their rights or adopt better hygiene practices. Cultural taboos around sanitation and water access persist, perpetuating cycles of marginalization and health risks. The insufficient community engagement in decision-making processes related to WASH reflects systemic exclusion, emphasizing the need for inclusive policies that empower these women to voice their needs and concerns.

Overall, addressing the water and sanitation challenges of Madhesi Dalit women requires a comprehensive approach that encompasses targeted interventions, community education, and the dismantling of caste-based hierarchies. By promoting equitable access to water and sanitation and fostering inclusive participation in decision-making, stakeholders can contribute to improving the health and well-being of Madhesi Dalit women, ultimately leading to greater social equity and community resilience.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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