



Environmental education gaps: Women's mythical beliefs and perceptions of flood disasters

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ABSTRACT

Background: Nationally, flood disasters have increased, which have a negative impact on all sectors of social life, especially on the daily lives of women. **Methods:** The research method uses a qualitative method by conducting interviews with women who live on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, East Java from Neighborhood Flats/*Rukun Tetangga* (RT) and Residential Flats/*Rukun Warga* (RW) in the affected areas and conducting field observations and supporting literature reviews. **Findings:** Every year, during the rainy season, floods occur, which become an important problem in various countries. Because, many negative impacts are experienced by the community, both individually, groups and on the government system. This study aims to describe women's perceptions of flooding on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, East Java, Indonesia about the occurrence, causes, and impacts of flooding on women as flood victims and on public awareness of the environment. **Conclusion:** The results of the study stated that the causes of flooding were high rainfall, houses being built too close together, careless waste disposal, lack of greenery, poor drainage and culvert construction, limited road access, limited culvert and drainage construction, limited wetlands, houses being built along rivers, and river silting. The impact of flooding is material losses in terms of buildings, income, and daily life. **Novelty/Originality of this article:** This study concluded that women on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, East Java still believe in the prevailing myths and lack awareness of the importance of protecting the environment together.

KEYWORDS: flood; gender perspective; women.

1. Introduction

Climate change is a global phenomenon with widespread impacts on natural and human systems (Ullah et al., 2024). Climate change occurs due to increased greenhouse gas emissions, primarily from human activities such as the burning of fossil fuels and deforestation, which are causing rising global temperatures, changing rainfall patterns, and increasing the frequency and intensity of extreme weather events (Nazeer & Bork, 2021). These changes pose significant challenges for vulnerable groups, including low-income communities, indigenous peoples, and marginalized groups (Bhutta et al., 2022; Ferris, 2020; Otto et al., 2023). Furthermore, community perceptions of disasters play a crucial role in their lives and contribute to effective risk reduction efforts for comprehensive disaster impact management. Women play a crucial role in supporting this process (Nakiyemba et al., 2025). Meanwhile, countries using numerous structural and non-structural flood risk reduction measures have shown an increase in the severity and frequency of these

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phenomena. Given the impact of floods on people's lives and livelihoods, flood preparedness has gained increased attention in the past two decades, among the various components of risk reduction, with a shift in focus from relief and rehabilitation (Gros et al., 2019; Tozier de la Poterie et al., 2023).

In general, impacts are gendered, with a more severe impact on individuals, such as women, children, adolescent girls, older people, people with disabilities, and other disadvantaged individuals facing greater levels of socioeconomic marginalization (commonly referred to as gender vulnerability), particularly during emergencies (Rahman et al., 2024; Singh et al., 2017; Toppenberg-Pejcic et al., 2019). So far, since eight years flooding has occurred on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, East Java (Achmad Ali, 2023; Bahana, 2024; Dian, 2020; Ginanjar, 2019; Imam, 2022; Kukuh, 2024; Risky, 2021; Sundah, 2017) even 2024 was the worst flood that occurred so far on Wonocolo Street in particular (Esti, 2024). Flooding is one of the most common natural events related to climate change, causing negative impacts worldwide, including death (Liu et al., 2022; Parhizkar et al., 2023). It was reported that in 2017, one of the residents of the Wonocolo boarding house died due to electrocution due to flooding, and throughout 2024, three children drowned in one of Surabaya's rivers when the water level increased (Herawati, 2025; Wahyudiyanta, 2017). Furthermore, on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, as one of the areas in Surabaya with high population density and economic turnover, they must feel the impact of flooding every year. When looking more closely, flooding impacts more people than environmental damage and other events (Tellman et al., 2022). Meanwhile, in China, it was found that 1.81 billion people (23% of the world's population) are directly exposed to a 1-in-100-year flood, with the highest absolute number of exposed people (395 million) in China, which represents 27.5% of China's total population. China is a country that is highly vulnerable to natural disasters and is among the countries worst affected by floods in the world (Zenghe, 2024).

As climate change continues, flooding is expected to increase in frequency and intensity due to rising sea levels. Furthermore, extreme rainfall events and increased urbanization will expose more people to the devastating impacts of flooding (Asante et al., 2024). Furthermore, climate change is predicted to accelerate global hydrological processes (Munawar et al., 2022). Consequently, direct damage is felt, causing loss of life, personal injury, property damage, vehicle damage, and harm to plants and animals. On the other hand, indirect damage is defined as social disruption, psychological suffering, and disorganized production and consumption systems (Iqbal & Nazir, 2023). In neighboring Indonesia and Malaysia, the impact of flooding has resulted in changes in Chemical Oxygen Demand (COD) and Biochemical Oxygen Demand (BOD5), which have a negative relationship with Dissolved Oxygen (DO). During these events, water supplies are unsuitable for daily sanitation and consumption, potentially posing health risks to flood victims (Lim et al., 2020). Meanwhile, in Jakarta, with its high population density and exposure in urban slums, other variables contribute to their high vulnerability to climate risks. In particular, poor water, sanitation, and wastewater conditions pose hygienic and health threats. Furthermore, post-flooding diseases spread through food, water, rats, and mosquitoes, including skin infections, diarrhea, leptospirosis, tetanus, and dengue fever (Yang, 2024). Consequently, post-flood illnesses worsen, especially given the lack of adequate government services (e.g., lighting) and contaminated food and water for evacuees (Yang, 2024; Yang et al., 2024).

In Surabaya, the distribution of flood-prone areas in Keputih Village in 2022 was divided into 4 classifications, namely not vulnerable area of 3.21 Ha with a percentage of 15%, moderately vulnerable classification of 34.85 Ha with a percentage of 18%, and vulnerable area of 148.45 Ha with a percentage of 36% very vulnerable class of 104.05 Ha with a percentage of 31% (Aulia et al., 2023). Although on Wonocolo Street, Jemur Wonosari Village, Wonocolo District is not close to the sea or located on the coast, Wonocolo is one of the areas that frequently floods (Achmad, 2023). From the negative impact of flooding and the condition of Wonocolo Street, Jemur Wonosari Village, Wonocolo District, floods occur every year or during the rainy season. This is felt by women with their roles in their daily

lives, many of which provide positive contributions, although some conditions experience discrimination or become the reason for flooding. Previous research has shown that women make significant contributions to resilience across all four dimensions of community resilience: social resilience, economic resilience, and ecological resilience (Azad & Pritchard, 2023). Furthermore, women, as individuals, have a role in disaster-prone community institutions, which is a factor in fostering a resilient future (Azad & Pritchard, 2023; Lisa et al., 2019). The more direct impacts of flooding and other climate-change-related disasters exacerbate the vulnerability of local women. In such situations, an understanding of the multidimensional aspects in which people are vulnerable to the impacts of flooding is essential (Udo & Naidu, 2024). Therefore, climate disasters are highly gendered and influenced by cultural norms regarding how women experience vulnerability to natural disasters (Udo & Naidu, 2023). Further research reveals that flooding can significantly impact economic stability, which can negatively impact mental health (Mostafizur et al., 2023).

The findings indicate that public awareness of flooding needs to be raised and knowledge and information about disasters must be enriched (Nifa et al., 2018). Furthermore, if awareness, preparedness, psychological, and physical skills are practiced and learned by communities living around flood-prone areas, damage can be minimized and rescue efforts can be reduced for disaster risk management authorities. Thus, losses due to flooding can be reduced by increasing public awareness and preparedness for flooding (Nakiyemba et al., 2025). On Wonocolo Street, Jemur Wonosari Village, Wonocolo District, flooding has occurred annually during the rainy season for nine years. In fact, 2024 was the worst flood, especially in Surabaya. Although flood management measures have been implemented in several areas to prevent a negative impact on the community, even though the flood was not too severe, the losses were still felt by residents of Surabaya, especially Wonocolo. Therefore, understanding women's perceptions of flooding will help identify awareness gaps to minimize flood damage, especially for women. If flood awareness is low, increasing women's awareness of flooding will be a means to strengthen flood rescue capabilities. Furthermore, perceptions of flooding will influence several risk reduction initiatives and practices, such as timely household relocation, floodwater diversion channels, and river embankment elevation. Awareness of the appropriate steps to follow before and during a flood is one of the most important factors in surviving, saving lives, and reducing material damage (Abderrahmane & Azzeddine, 2024; Nakiyemba et al., 2025). This is fundamental to effective flood risk reduction and management, as women may represent a specific target audience for flood risk reduction initiatives and practices. Therefore, the current study sought to answer women's perceptions of flooding on Jalan Wonocolo, Jemur Wonosari Village, Wonocolo District, Surabaya, East Java, including awareness, occurrence, severity, and causes (Kurata et al., 2023). Thus, it can be justified that there are several initiatives and interventions undertaken by the government, such as the construction of river embankments, water channels, reservoirs, and reforestation. Furthermore, outreach was conducted to the community on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, particularly women who are vulnerable to flooding. Understanding women's perceptions will help bridge the knowledge gap and guide the design and implementation of practical flood risk reduction initiatives and policies in the study area (Nakiyemba et al., 2025).

2. Methods

2.1 Research areas

Wonocolo, Surabaya City, East Java, Indonesia. Wonocolo Street is frequently flooded every year during the rainy season, even in 2024-2025 it was the biggest flood. Although the flood was not a flash flood, it disrupted and stopped local residential activities. Wonocolo is located between 7° 19' South Latitude and 112° 43' East Longitude. The area of Wonocolo is 6.55 km². The northern part of Wonocolo District borders Wonokromo

District, the eastern part borders Tenggilis Mejoyo District, the southern part borders Sidoarjo Regency, and the western part borders Gayungan District. The village with the largest area is Siwalankerto Village, which is around 1.98 km². Meanwhile, the smallest area is Bendul Merisi Village with an area of 0.78 km² (Alfian et al., 2024).

Table 1. Area of sub-district/village

Village/District	Total Area (km ² /sq.km)	Percentage to District Area
Siwalankerto	1.98	30.23
Jemur Wonosari	1.81	27.63
Margorejo	0.91	13.89
Bendul Merisi	0.78	11.91
Sidesermo	1.07	16.34
Wonocolo District	6.55	100

In 2023, Wonocolo District consisted of 6 urban villages, 47 Neighborhood Flats/*Rukun Tetangga* (RW), and 302 Neighborhood Flats/*Rukun Tetangga* (RT). The urban village with the largest number of RW is Jemur Wonosari Village. Meanwhile, the urban village with the largest number of RT is Ngagelrejo Village. Meanwhile, the population of Wonocolo District in 2023 based on registration results was approximately 79,986 people. The population density per km² was 12,212 people/km². Meanwhile, the sex ratio was 97.4. Of the total population of Wonocolo District in 2023, the age group with the largest number was the 40-44 year old group with a total of approximately 6,788 people. The largest population in 2023 was in Jemur Wonosari Village with a population of approximately 20,925 people. Meanwhile, the smallest population is in Margorejo Village with a population of around 10,668 people (Alfian et al., 2024).

2.2 Data collection and analysis

This research was conducted during the rainy season (December 2024-January 2025). This study used a qualitative approach to delve deeper into perceptions that cannot be measured numerically, have relevance to the preserved social and cultural context, and provide understanding, experiences, and roles of women, so that they can be used to answer the research questions. A gender perspective supports and participates in realizing the sustainable development goals, especially goal 5. Women experience different impacts than men and helps researchers avoid gender bias in design, data collection, and interpretation of research results. This is important to ensure that the research truly reflects social reality. The selection of women as research objects and as respondents is more appropriate related to the study of women's perceptions of flooding in this study. In addition, no previous research has used attribution theory from a gender perspective. While previous studies have similarities in research topics, this study uses a different theory, namely attribution theory. Therefore, in this study, it is very relevant to use theory in the study of women's perceptions of flooding on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, Indonesia. Data collection was conducted through observation, interviews, and document review related to flooding. The first stage involved in-depth interviews with seven female respondents, residents affected by the flooding on Jalan Wonocolo, Jemur Wonosari Village, Wonocolo District, Surabaya City.

The interviews focused on the impact of flooding and perceptions of flood management, serving as key informants for understanding women's perceptions of flooding. The second stage involved data collection from official records, previous research, documentation, books, publications, journal articles, reports, and local newspaper articles about the flood disaster. To analyze the qualitative data, the Moser model analysis framework, developed by Caroline Moser, was used. The Moser model facilitates understanding gender roles, understanding the impact on women, and examining women's challenges in coping with flooding. Furthermore, in the first stage, transcripts were obtained from recordings, documentation, and observations. Some recordings were in Javanese and Indonesian.

Second, codes or data labels were created. Codes are labels containing transcript segments used to identify key concepts to answer the research questions. Coding was performed when the data reached saturation, meaning no new concepts were discovered. The third stage is developing a coding structure to produce a report aligned with the research theme. Next, once the themes are identified, analysis is conducted to answer the research questions.

3. Result and Discussion

3.1 Awareness and causes of flood disasters

In this study, all survey respondents were women who had lived on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya City, Indonesia for more than 10 years. Most were married and had children, with an average formal education of Senior High School and a bachelor's degree. The average age of survey respondents was under 45 years old, and some were employed and housewives. From field observations, the construction of residential houses was indeed located on the riverbank, even though this action violates Article 9 of the Republic of Indonesia Government Regulation Number 38 of 2011 concerning Rivers (National Legal Development Agency - Ministry of Law and Human Rights of the Republic of Indonesia, 2011). In addition, the Surabaya area is generally a catchment area or channel for waterways from Mojokerto and Gresik, then converging on the Surabaya River to the sea at the tip of East Surabaya.



Fig 1. (a) Wonocolo road; (b) Wonocolo river; (c) Place of worship; (d) Family crossing floodwaters (Bahana Patria Gupta, 2024)

During the interviews, all the informants were aware of the flooding on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya. All informants stated that the flooding that has occurred so far is related to climate change which causes heavy and unpredictable rain, the construction of houses too close together or closely packed, indiscriminate waste disposal, lack of greenery, poor drainage and culvert construction, narrow road access, limited culvert and drainage construction, limited wetlands, house construction on riverbanks and the occurrence of river silting. Although the flooding occurs according to the season, every prolonged rain causes Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, flooding, especially when heavy rain lasts for a long

time. Even now, technological predictions are often inaccurate and cause confusion going forward. Climate change makes everything irregular, especially the unpredictable seasons.

"The flooding on Wonocolo Street depends on the season. The BMKG can't even predict the rainy season, let alone the rainy season. Because the earth is starting to become brittle, the seasons are no longer predictable. What used to be predictable is now unpredictable. And the flooding only lasts for about the first month of the rainy season, just at the beginning. The water basins haven't been controlled yet." (Informant regarding flooding in Wonocolo).

A deeper understanding reveals that urban flooding is a disaster that threatens human life and property. Flooding is often accompanied by transportation disruptions, damage to infrastructure such as electricity and communication systems, water source pollution, and the spread of disease as secondary consequences (Hu et al., 2021; Li et al., 2023; Liu et al., 2023; Santana et al., 2022). Furthermore, simple daily activities such as cleaning the house also contribute to flooding on Jalan Wonocolo, Jemur Wonosari Village, Wonocolo District, Surabaya. Some residents frequently throw trash into the waterway, which accumulates over time, forming sediment.

"During the floods and before, women maintained cleanliness, as they are usually the ones cleaning the house, sweeping and even doing small things in front of the house. Sometimes, even a little bit of trash gets into the gutters, and the sediment can cause flooding. This then affects the men who do community service. The debris from the mothers who dumped the waste in the gutters ultimately leads to the men cleaning up. The men are left to wonder where the trash came from, even though it's actually their own wives." (Informant regarding flooding in Wonocolo).

Women are responsible for maintaining household hygiene, including sweeping and tidying their surroundings. However, the disposal of household waste, even accidentally, into drainage systems contributes to blockages that exacerbate flooding. During floods, men are often the ones involved in cleanup efforts, such as cleaning drainage systems. This situation often raises complaints, as the waste clogging drains may originate from within the household, possibly discarded by family members themselves. This creates an ironic cycle where household hygiene is prioritized, but waste management is neglected in the broader environmental context. This problem stems from a lack of collective awareness regarding waste disposal and environmental responsibility. While women focus on household hygiene, the unintended consequences of improper waste disposal contribute to flooding, shifting the burden onto men who participate in cleanup efforts. Rather than gender-based blame, this situation requires greater education and awareness about responsible waste management at the household level. Only through shared responsibility and sustainable waste management practices can communities effectively mitigate the recurring problem of flooding.

"Then, from the illness, it's itching. Our children get itchy when they're little, and if their skin isn't sensitive, it will. Also, from clean water, it will impact the well. If I still use water from the well. So, there's a well and PDAM water. Well, my personal well at home, if the rainfall isn't high enough, the water will smell, like it's polluted." (Informant regarding flooding in Wonocolo).

Health and environmental issues faced by residents during the floods, particularly skin diseases and water contamination, were highlighted. Concerns about children experiencing skin irritation, especially those with sensitive skin, suggest that floodwaters may carry pollutants or bacteria that cause dermatological problems. Another major concern is the impact of flooding on clean water sources. Some families rely on private wells and PDAM water for daily use. However, when rainfall is not heavy enough, well water emits an

unpleasant odor, indicating potential contamination. This suggests that floodwaters can seep into groundwater, mix with pollutants, and affect well water quality. Furthermore, the vulnerability of households still relying on well water highlights the risk of waterborne contamination and the need for improved water management and sanitation infrastructure during flood events.

3.2 People's myths about pempes being thrown into the river

Another discovery on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, is the widespread belief that baby diapers should not be burned. This myth is based on the belief that burning used diapers for babies or toddlers will result in sores or rashes on the baby's bottom. This belief has been passed down through generations and has become part of the local wisdom of the community. Because disposable diapers are difficult to decompose and generally cannot be recycled, the common disposal method is burning them. However, due to this belief, some housewives choose another method: disposing of diapers in rivers. The community believes this is safer than throwing them in landfills, where they will then be burned by sanitation workers.

This phenomenon contributes to environmental problems, particularly in terms of waste management and the risk of flooding. Disposable diapers contain plastic and absorbent gel that are difficult to decompose naturally. Therefore, when disposed of in rivers, they block water flow and exacerbate flooding during the rainy season. Furthermore, diaper waste also pollutes aquatic ecosystems and threatens river biota. From a social perspective, this belief demonstrates how myths can influence people's behavior regarding waste management. Although rooted in local traditions and values, this practice requires serious attention, particularly in educational efforts about environmentally friendly waste management.

"There are myths and facts about diapers. The myth is that if diapers are thrown in the trash, for example, they'll burn or burn the baby's bottom. In fact, there's no such system; it has no impact. In my personal experience, when I had my first child, my in-laws and I were told to throw away diapers. So the diapers were collected. Then I found out my in-laws were throwing diaper waste in the river. I was immediately furious. Maybe it was a trivial matter, about the mothers' diapers. Then the flood in Wonocolo was caused by the careless throwing of diapers, because it was only one small plastic bag, how much trash is there? If you go back and forth, how much is one small plastic bag?" (Informant regarding flooding in Wonocolo).

These practices cause rivers to overflow and flood, leading to various diseases affecting the local population. Even clean water sources are contaminated, leading to the spread of disease. In some cases, diapers are flushed directly into toilets or burned on the ground in the open air. These disposal practices contribute, to varying degrees, to water, soil, and air pollution (Płotka-Wasyłka et al., 2022). Disposable diapers are classified as "municipal solid waste" and are handled after use using traditional disposal practices (Velasco et al., 2021). The environmental problems associated with disposable and non-disposable diapers differ. The main impacts are caused by material use and waste generation for disposable diapers, and the use phase for cloth diapers. Cloth diapers appear to be superior to disposable diapers under certain usage conditions (Notten et al., 2021). In a study conducted by (Płotka-Wasyłka et al., 2022) it was stated that potential health and environmental hazards associated with materials included in diapers, or substances formed from diapers during the waste processing stage, were also analyzed (e.g., phthalates, pesticides, dioxins, pesticides). Three main types of baby diapers were analyzed: disposable diapers, reusable diapers, and biodegradable disposable diapers.

3.3 Women's perceptions of flooding

From the results of field observations, flooding on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya cannot be predicted, but every year experiences flood intensity, especially in 2024 which became the biggest flood in Surabaya. Most of the sources said that the floods that have occurred in Wonocolo have experienced quite high discharge. The Head of the Wonocolo Environmental and Disaster Management Agency and the Surabaya City Government Disaster Preparedness Youth Team and several members revealed that the biggest flood will be in December 2024 and continued in January 2025. To support this, several sources stated.

"Last December, my house was flooded. But I can't blame the government for that. In the Jagir area near Wonocolo, Surabaya, the water level was already above the riverbank. Why? Because Surabaya relies on water from the river itself, and we're confused because the water comes from Mojokerto and Gresik. Surabaya is a flooded area. If we don't control it, it will sink even further." (Informant regarding flooding in Wonocolo).

Surabaya's location as a waterway between Mojokerto and Gresik has increased the amount of water flowing into the city, not to mention the amount of rainwater in the city itself. This is not to mention other factors that contribute to the city's frequent flooding. One of the main factors mentioned is the high water level in the Jagir area near Wonocolo, where the river has overflowed its banks. Surabaya is heavily affected by water entering from upstream areas, particularly Mojokerto and Gresik. As a result, Surabaya has become a dumping ground for excess water, making it highly vulnerable to flooding. This situation creates a dilemma for residents, as they struggle to control the flow of water while facing the risk of worsening flooding.

"In my opinion, there are several factors that contribute to the continued flooding in Wonocolo during the rainy season. These factors include population density and housing density, the habit of littering, and a lack of greenery. Furthermore, the increasing population of Wonocolo residents, both native and immigrant, is also contributing to the continued flooding. This lack of awareness about the small things that can cause flooding contributes to Wonocolo's continued flooding, despite several attempts to widen the culverts and drainage systems." (Informant regarding flooding in Wonocolo).

The statement above is one of the factors that causes Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, to frequently flood. As an area with a relatively high population density, green spaces are increasingly scarce, even very limited. Several main factors contribute to the recurring flooding on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, during the rainy season. These factors include high population density, improper waste disposal habits, and a lack of green spaces. A major concern is the low awareness of residents regarding small actions that can cause flooding. Despite efforts to widen the drainage system and culverts, flooding continues to occur due to ongoing human behavior, such as littering and poor environmental management. Flooding on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, is not only caused by natural factors, but also by human activities and urban development.

"In general, the impact of flooding is certainly very detrimental to many parties and all of humanity. Many activities are hampered due to traffic jams, motorbikes breaking down, late for work and school, not to mention for sellers whose sales are hampered because people are finally lazy to go out. Especially for me. I am an office worker. When flooding occurs, I choose to walk kilometers from my boarding house to the office—and vice versa. At a pace far from normal to avoid unexpected dangers from floodwaters, to avoid my motorbike getting stuck or simply to guide a heavy motorbike. It's very tiring, isn't it?" (Informant regarding flooding in Wonocolo).

Another response from Wonocolo women was that the flooding also brought activities to a standstill. Some homes had to be abandoned, especially with the added burden of household chores and other necessities. During flood periods, frequent flooding significantly hampers the city's normal operations and limits its routine development. With accelerated urbanization and increasing extreme rainfall events, urban flooding incidents are becoming increasingly frequent (Chen et al., 2023; Liu et al., 2023; Padulano et al., 2021).

"When the floods hit Wonocolo, the end of everything was over. Women couldn't shop, go out, or do anything. Household activities were disrupted, and there were no vendors. The impact was profound, even within the household itself. Eventually, houses were submerged. As women, we ended up with this burden, with a lot of laundry. Ultimately, the clothes in our wardrobes were affected." (Informant regarding flooding in Wonocolo).

The flooding severely impacted daily life, particularly for women and households on Jalan Wonocolo, Jemur Wonosari Village, Wonocolo District, Surabaya. When the floods occurred, women were unable to leave their homes to shop or perform other activities, disrupting daily routines and household management. The flooding also impacted local vendors, leading to shortages of goods and further complicating household needs. As floodwaters rose, homes became inundated, causing significant damage. Women, in particular, bore the additional burden of household chores. Laundry piled up as clothes stored in closets became wet and damaged. This situation increased household responsibilities, making it increasingly challenging to maintain normalcy during and after the disaster. Women faced a disproportionate burden in managing household disruptions. This underscores the need for better flood preparedness and support systems to alleviate the struggles of affected families, especially women responsible for household chores.

4. Conclusion

This study assessed women's perceptions of flooding on Wonocolo Street, Jemur Wonosari Village, Wonocolo District, Surabaya, East Java, where flooding poses significant challenges for the local community. If left unaddressed, flooding will cause significant damage and destruction to the physical, socio-economic, and environmental components. The study results indicate that women are aware of flood disasters in terms of frequency, severity, and causes, but still believe in prevailing myths and are unaware of flooding. This suggests that women are impacted by flooding due to poor perceptions. This is compounded by women's daily habits of disposing of waste, which are still suboptimal. Furthermore, climate change, coupled with inadequate drainage and culvert practices, limited road access, limited culvert and drainage construction, limited wetlands, housing development along riverbanks, and severe river siltation, are contributing factors.

Conversely, having poor perceptions of flooding will impact timely decision-making and the choice of initiatives to address flooding. This study focused solely on a women's perceptions of flooding; several limitations prevent the generalizability of the findings. The first limitation is the survey; while qualitative interviews provided insights from women, the quantitative study focused solely on female flood victims. Therefore, this study did not consider men's perceptions in generating data. Therefore, future research should focus on both men and women to generate more diverse and in-depth data. The second limitation is the lack of references, particularly in English, to support the arguments within each data point and the few paragraphs.

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