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RESEARCH ARTICLE

Environmental Justice and Vulnerable Populations: Perspectives of Environmental Activists

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Abstract: This study explores the perspectives of environmental activists on the disproportionate impacts of environmental crises on vulnerable populations, focusing on issues such as pollution, occupational hazards, and natural disasters. Using critical theory as a framework, the research highlights the intersection of environmental justice and structural inequalities, emphasizing the role of social service providers in addressing these challenges. Through qualitative interviews with 25 environmental activists, the study identifies key themes: the environmental issues affecting vulnerable communities, their health and socioeconomic impacts, and recommendations for social service interventions. Findings underscore the need for social workers to engage in community-based advocacy, education, and policy reform to mitigate environmental injustices. The study calls for a shift towards eco-centric practices within social work, emphasizing the importance of addressing both environmental and social justice issues to build resilient and equitable communities.

Keywords: environmental activists, vulnerable populations, environmental justice, social service, socioeconomic impacts

1 Introduction

Due to climate change, communities around the globe are faced with risks of extreme weather hazards more frequently, such as drought, hurricanes, flooding, and snowstorms [1]. It is reported by the National Centers for Environmental Information, the U.S. has sustained more than 332 weather-related hazards, and the overall damages have exceeded $2.275 trillion since the 1980s [2]. The climate crisis, environmental pollution, diminishing natural resources, and natural disasters have and will continue to have disproportionate impacts on disadvantaged communities [3]. Climate change can occur either by sudden events or those that happen over a period of time. When observing sudden events with the slow onset, overtime incidents, infrastructure within vulnerable communities continues to worsen. Poor infrastructure, which can often be traced back to historical/racial inequalities, it can be considered that it is less likely to survive certain climate events due to the disparities of a community's infrastructure [4].

The current study explores environmental activists' observations and perspectives on environmental issues and their impacts on vulnerable populations. To do so, it explores the following research questions: 1) What are the experiences of environmental activists in working with vulnerable populations and 2) What are their recommendations for social service providers in working with vulnerable populations in the social services context? By using critical theory as a framework [5], this paper connects environmental concerns to vulnerable populations. In so doing, it highlights the need for social services providers to be more involved in environmental issues [6] and offers insights into strategies for incorporating issues related to the environment into their practice.

1.1 Critical Theory as Framework

Critical theory posits that human beings are "enslaved" by circumstances and it is important to increase our understanding of those oppressions [5]. Accordingly to Horkheimer's definition

of critical theory [7], it should explain what is wrong with the current social reality, identify the individuals who can act to change the situation, and provide norms and practical goals that can lead to social transformation [7]. Critical theory provides a basic fundamental framework to view the phenomenon of environmental justice and is consequently used to guide the study.

The concept of environmental racism fulfills Horkeimer's (1972)'s first element of critical theory. Environmental racism refers to policies and practices that disproportionately subject people of color or groups to the impacts of environmental degradation compared to white people [8]. Marginalized groups such as people who live in poverty, people of color, children and older adults, as well as refugees and immigrants are typically more poorly prepared for disasters than their counterparts and suffer more serious negative impacts [9, 10]. Older adults are particularly vulnerable if services are not able to reach them due to impacts such as impassable roads [11]. Hurricane Katrina reflected all of these dynamics [12]. For instance, low-income African Americans were most adversely affected, more widely resettled throughout the United States following the disaster, and four times more likely to lose their jobs on their return compared to European Americans [9]. Environmental justice is not just about environmental degradation, but also involves the concept of structural inequality. This implies that if environmental harms cease and are corrected, environmental justice is still not reached if vulnerable communities still have structural inequality [13].

Environmental activists should fulfill the second element of Horkheirmer's definition of critical theory, in that they are the individuals who are poised to act and invoke change about environmental racism as well as alter negative impacts on low-income people, older adults, and children. The movement historically called attention to environmental racism, but the marginalization of urban dwellers as well as low-income and people of color drew attention away from this problem [8]. This has led to alienation of people of color from the environmental movement and a general belief that the movement advocates for measures that impose costs on them [14].

1.2 Environmental Crises

Rising rates of floods, earthquakes, major storms, high temperatures, brush fires, rising sea level, and human pollution constitute an ongoing environmental crisis [15]. Compared to a few decades ago, hurricanes occur twice as often and with more intensity and their rates are likely to double again before the end of the century due to global warming [16]. Long-term effects of natural disasters include a deterioration in mental and physical health, difficulty with personal relationships, and economic and social hardships. Such events disrupt communities in ways that persist over years and even decades, and other aspects of environmental degradation, such as climate change, can worsen the impact of natural disasters. These occurrences, such as air pollution, rising temperatures, widespread infectious diseases, and extreme weather-related events, are results of disrupting the economic and social systems within communities [17].

Environmental crises connected to human disasters include deforestation, climate change, and industrial pollution [11, 18]. Also, human activities such as forest and land clearing, overfishing, toxic waste spills, nuclear accidents, and crop burning lead to pollution as well as habitat loss for animals and plants. Waste products from the massive extraction of non-renewable resources are emptied into uncontaminated water reserves or buried on pristine land [15]. Air pollution triggers asthma and other respiratory diseases, and environmental degradation causes people to lose their livelihoods and homes [11]. The results are poverty, over urbanization, and armed conflict [11].

1.3 Social Services and Environmental Justice

Vulnerable populations are affected by unsustainable models of development, unequal distribution of resources, and unequal power dynamics that all contribute to structural inequalities [11, 19]. Thus, social services must address these dynamics [11, 15, 20]. Environmental justice offers an underlying principle for doing so. Dominelli (2014) [21] defines environmental justice as "the equitable distribution of the Earth's resources in meeting human needs, simultaneously providing for the well-being of people and planet Earth today and in the future" (p. 339) [21]. The environmental movement has shown that human exploitation and adverse action contribute to structural inequality and environmental change [22]. Philip and Reisch (2015) [6] noted a few significant elements of environmental justice which are meaningful and fair participation and decision-making, recognition and appreciation of local knowledge, different ways of life, and cultural differences, capability of individuals and communities to function and flourish, and equitable distribution of environmental benefits and burdens [6].

Social service providers need to pursue all four of these goals.

Recognizing their role in addressing environmental threats to vulnerable populations, social services providers have proposed environmental social work, also referred to as green social work or eco-social work, to address these concerns [11, 15]. The fundamental values of social work are not just about human beings but should include natural entities that are found in nature such as bodies of water and land features [23]. Environmental social work attempts to address the negative impacts of environmental challenges on vulnerable populations, to change policies related to the planet for today and the future, and to implement holistic structural interventions to enhance wellbeing and justice for individuals [11, 24]. It provides a framework to help social service providers to understand the impact of environmental crises and to dismantle the structural inequalities that disproportionately expose low-income and nondominant racial and ethnic groups to environmental harm.

Scholars increasingly agree that social workers should incorporate the natural environment into human service [25]. Likewise, evidence suggests that doing so enhances social work practice. Professional associations call on social services providers to care for the natural environment and shift to an ecocentric paradigm that incorporates not just humans as the focus of the profession, but all species in the natural world, and incorporate this into education and practice [23]. Furthermore, social work students desire more knowledge about how to engage in environmental issues [26, 27]. Indeed, as scholars have noted, the professional principle of social justice calls on social workers to address environmental crises [11].

2 Material and Methods

Qualitative inquiry is suitable for this study because it allows for an exploration of environmental issues that vulnerable populations encounter to inform future studies and aid in the development of applications for environmental concerns in social services. This study adopts the phenomenological approach developed by Moustakas on research methods [28]. This approach is beneficial because it investigates the collective experiences of a group, in this case, environmentalists, who are more familiar with the phenomenon of interest to help provide direction in the development of social work practice to address the phenomenon of environmental injustice.

2.1 Sample and Recruitment

In this study we gathered insight from environmentalists who met one of three criteria: a) educational background in environmental studies, b) involvement in environmental activism, or c) membership in one or more environmental groups. Another inclusion criteria was that the participants needed to be environmental activists in the U.S. Participants were recruited by contacting environmental organizations by using the method of convenience, purposive, and snowball sampling.

2.2 Data Collection

Environmentalists provided written consent to participate in audio recorded, one-on-one interviews that lasted an average of 45 minutes in length. Interviews were conducted in person or by phone using a semi-structured guide. The guide consisted of open-ended questions related to environmental issues encountered by vulnerable groups. Examples of questions include prompts such as “Can you tell us about environmental issues that you observed encountered by the vulnerable groups” and “What would be the possible changes in practice and policy that should take place?” and more. Participants were asked follow-up questions as needed to gather more information. Recordings were transcribed for data analysis.

2.3 Data Analysis

Following Creswell’s qualitative data analysis methods [29], the constant comparative method was used for data analysis. This involved comparing and sorting each unit into meaningful categories based on similarity until patterns emerged. First, interview transcripts were reviewed and prepared for data analysis by omitting the interview questions to focus on information from participants. Second, data were separated into units, each representing an idea, concept, or statement that could stand alone. Third, units were sorted into meaningful categories. Fourth, units and categories were reviewed and re-categorized until all units matched their respective categories. Finally, categories were merged or separated to identify a pattern of themes that told a story.

3 Results

A total of 25 individual interviews were conducted with fifteen female and ten male participants. Participants identified with the following racial groups: four African Americans, European Americans, four African Americans, one Latin American, and one Asian American participants. Participants represented a variety of educational backgrounds, including degrees in liberal arts, biology, business administration, environmental science, law, and social science. Participants also reported their involvement within their organizations. Twenty participants reported involvement in environmental activist/advocacy groups, three participants were involved in research, and two were educators. Lastly, participants reported on a diverse range of services in environmental work, from 1 to 50 years. (see Table 1)

Table 1 Demographic Information of Participants

No	State or Location	Sex	Race	Yrs. of EVA	Type of Environmental Work	Yrs. of Education	Major
1	FL	M	White	N/A	Research	22 yrs.or more	Sociology
2	CA	F	White	10	Activism/Advocacy	16 yrs. or more	Fine Arts
3	FL	M	White	13	Activism/Advocacy	18 yrs. or more	Business Administration
4	FL	M	White	2	Research	16 yrs. or more	Law
5	N/A	M	African American	15	Activism/Advocacy	18 yrs. or more	Environmental Science
6	N/A	F	African American	5	Activism/Advocacy	22 yrs. or more	Law
7	CA	F	White	25	Research	22 yrs. or more	Political Science
8	FL	M	White	3	Activism/Advocacy	18 yrs. or more	Environmental Science
9	FL	F	White	8	Activism/Advocacy	18 yrs. or more	Communication
10	FL	M	White	10	Activism/Advocacy	14 yrs. or more	N/A
11	TX	F	White	26	Activism/Advocacy	18 yrs. or more	Business Administration
12	CA	F	White	20	Activism/Advocacy	16 yrs. or more	Arts
13	N/A	F	White	7	Activism/Advocacy	16 yrs. or more	Climate Science
14	KT	F	White	9	Activism/Advocacy	18 yrs. or more	Environmental Science
15	TN	F	Latinx	4	Activism/Advocacy	16 yrs. or more	Environmental Science & Public Policy
16	FL	F	White	9	Activism/Advocacy	16 yrs. or more	Coastal Biology
17	FL	F	White	A few	Activism/Advocacy	14 yrs. or more	N/A
18	TN	F	White	3	Activism/Advocacy	14 yrs. or more	Social & Environmental Justice
19	VA	M	African American	3	Activism/Advocacy	14 yrs. or more	Environmental Science
20	FL	M	Asian	5	Activism/Advocacy	16 yrs. or more	Business Administration
21	FL	F	White	5	Activism/Advocacy	16 yrs. or more	N/A
22	CT	F	N/A	N/A	Activism/Advocacy	N/A	N/A
23	N/A	F	White	7	Activism/Advocacy	16 yrs. or more	Education & Biology
24	SE US	M	African American	10	Activism/Advocacy	14 yrs. or more	N/A
25	N/A	M	White	50	Activism/Advocacy	14 yrs. or more	N/A

Note: EVA – Experience in Environmental Activism, SE US – Southeast US.

Analysis of the interviews identified three major themes based on participants' statements: 1) environmental issues that affect vulnerable populations, 2) impacts of environmental issues on vulnerable populations, and 3) recommendations for service providers. Participants described environmental issues vulnerable populations are more likely to experience, which include increased risk for exposure to pollution in their communities, exposure in their occupations, and damage from natural disasters in their communities. Participants also discussed the impacts of environmental issues and brought attention to health, economic, and social consequences. Finally, participants made recommendations for moving forward and explained barriers, institutional factors, and possible solutions for addressing environmental issues. The following sections discuss each theme in further detail.

3.1 Environmental Issues That Affect Vulnerable Populations

Participants paid considerable attention to pollution exposure in vulnerable communities, particularly among nondominant racial/ethnic groups and individuals with low Socioeconomic Status (SES). Participants shared that vulnerable populations can be exposed to pollution through various means that include poor infrastructure, waste dumps and landfill, high traffic areas such as highways and ports, in-home contamination from poor housing, fossil fuel extraction sites such as fracking sites, pipelines, oil refineries, and coal mining operations, and pesticide runoff from farms. Exposure to pollutants from these sources can occur through contamination in the land, water, and air.

Many of the pollution sources participants referenced are industrial activities. Several participants explained that vulnerable populations are more likely to experience pollution

exposure because pollution sources are deliberately placed in their communities. Participant #16 described a community she knew about:

Predominantly Black and Brown folks, a lot of them under the poverty line- and a [top-tier, well know oil company] has an oil refinery there.... Their kids have really high rates of asthma and high rates of cancers and a lot of these things that are due to the pollution refinery. On the flip side, everyone's employed there, and [the oil company] is also what's keeping their schools open, creating parks and beautiful places to live.

Participant #9 explained, *"The last thing that vulnerable populations need is another polluting industry to come in and build infrastructure. Of course, it won't be in the wealthy neighborhoods. They'll build infrastructure and build pipelines through the most vulnerable communities."* Participant #16's description reflects the complex relationship between industries that communities rely on and the impact on vulnerable populations.

Additionally, participants identified exposure to pollution within occupations as a significant issue for vulnerable populations, including coal mining, farming, and factory work. They described people of low SES and nondominant racial/ethnic backgrounds as particularly vulnerable to this form of exposure. For example, it is reported: "*A lot of people in lower socioeconomic categories work in jobs where they are exposed to more environmental hazards. Like coal miners for example, are exposed to—and, you know, end up with black lungs from all the cold dust that they're inhaling. Yeah, people working in chemical plants and things like that often have more exposure, so that could affect vulnerable populations as well.*" (Participant #18).

Participants referred to occupational exposure as exploitative of vulnerable populations who work in these industries out of financial necessity and may be unaware of the exposure risks associated with their jobs. This form of occupational environmental exploitation can expand to an entire community.

Activists also referenced vulnerable populations' risk for environmental damage from climate-related weather events such as stronger storms, rising sea levels, and flooding. Participants stressed natural disasters are an urgent issue and may increase in frequency due to climate change. Several participants attributed the frequency of natural disasters to climate change that is impacted by human activities. Communities located near the coast, waterways, or inland at low sea levels are particularly at risk for destruction from climate change–related natural disasters. For example, participant #22 spoke to the vulnerability of coastal communities and the role of human activity in climate change impacts. Natural disasters place these communities at damage to their homes and communities, contamination of their drinking water, and, ultimately, displacement. Participant #2 reported people of low SES *"may end up in lower-quality housing or sites that are more likely to get flooded by a river or sea level rise."* Participants explained communities of low SES are more likely to lack infrastructure and resources to withstand impacts from natural disasters.

3.2 Impacts of Environmental Issues on Vulnerable Populations

Participants identified health-related environmental impacts that negatively affect physical, developmental, and mental wellness of vulnerable populations. The physical health impacts they described were often related to exposure to environmental pollution. For example, participants reported air pollution can increase risk for asthma, allergies, and upper respiratory illnesses. Water pollution can expose vulnerable populations to health impacts such as lead poisoning and other diseases. The sources of contamination mentioned included lead water pipes, flooding, and wastewater leeching. Polluted food sources were identified as a contributor to adverse health impacts, including mercury poisoning from fish and pesticide exposure from produce. Climate-related health impacts can include exposure to extreme heat and natural disasters.

Participants noted children, older adults, pregnant women, and nondominant racial/ethnic groups are most vulnerable to physical health impacts. Participants explained racial and ethnic communities and poor communities are commonly situated near polluting entities. Thus, they are more likely to experience adverse health impacts. For example, it was stated:

A really good example of this is in Nashville. In historically Black neighborhoods, what tends to happen, is that there's highways that literally cut them off... and then you have noise pollution, and then you have children that are more prone to asthma [due to air pollution] (Participant #10).

In addition to physical health impacts, participants identified adverse developmental and mental health impacts. They stated that exposure to pollution can lead to developmental

issues. These effects on neurodevelopment may occur on a continuum from significant to minor and cause changes in behavioral and/or cognitive outcomes of children who are exposed to pollution [30]. Several participants noted pregnant mothers and children are most at risk from developmental impacts and explained pregnant mothers can be exposed to toxins, such as mercury in fish or xenoestrogens, thus impacting the development of their children. For example, participant #19 stated: *So children and women of childbearing age who consumed too much fish that has mercury within it runs the risk of those children being born with learning disabilities and other things that can seriously impact the life of those children and then what kind of income and where they'll be as adults, so that that's one of the most harmful ones.* Participants also noted mental health consequences of environmental impacts, such as trauma and increased stress in response to natural disasters and the attending impacts such as displacement and severe loss. It was noted that Hurricane Katrina as an example of a natural disaster where many survivors developed mental health issues.

They also identified several economic impacts of environmental issues. One economic impact they referenced is the increase in cost of living for vulnerable populations when access to fresh drinking water, electricity and other utilities, and fresh food decreases. Another is difficulty repairing homes after natural disasters and the cost of relocation. Participants also noted environmental gentrification as a driver of such risks. In environmental gentrification, in-migration of higher SES communities in areas that are less environmentally vulnerable leads to displacement of poorer communities. Participant #22 mentioned that having witnessed this phenomenon in South Florida and referenced disadvantaged communities at high elevation that may experience this in the future.

Participants noted that environmental issues impact industries like fishing and agriculture and the livelihoods of vulnerable populations who work within them. Participant #22 shared, *"The industries that would be affected by climate change are often, you know, gonna be more working-class industries."* Many of the activists also shared how environmental hazards in the community can limit an entire communities' opportunity for economic advancement. The presence of polluting industries in a community can limit economic advancement by discouraging other businesses from investing in the community. Likewise, they expressed concern about food access issues. Food deserts are commonly low-SES communities, and they are associated with negative health and financial impacts for vulnerable populations. Food deserts and food access issues as environmental issues were often mentioned, explaining that climate change and pollution can worsen food access issues in communities of low socioeconomic status.

Participants also noted that the emotional and economic impacts of environmental effects will continue into future generations. Children will grow up experiencing the long-term consequences of environmental issues and will be left to *"clean up,"* they said. They likewise noted how vulnerable children are to food access issues and pollution. Participant #10 explained: *"When children are not able to access fresh food or even enough food it disturbs their education. For example, they're not able to concentrate in class, right, because they are not focusing on what's being taught in the classroom. They're focusing on their tummies being hungry and they're focusing on what they're gonna eat the next day."*

3.3 Recommendations for Moving Forward of Concern for Social Service Providers

It was mentioned significant barriers that vulnerable populations face that either increase their vulnerability or decrease their adaptability to environmental impacts. Lack of knowledge presents a barrier for vulnerable populations because they may not know how to take preventative or adaptive measures when faced with an environmental threat. They also may be unaware of the environmental issues that exist and are occurring in their communities, and therefore be less likely to act. Participant # 8 stated: *"I do think that poverty itself keeps people from understanding about environmental issues and advocating for what's best for their community."*

Vulnerable communities' lack of financial means to address or adapt to environmental issues was highlighted, such as by modernizing their infrastructure, converting to sustainable energy solutions, or remediating existing environmental issues. Lack of financial resources may also place vulnerable communities at risk of exploitation. Additionally, because of financial restraints, vulnerable populations often do not have the time or energy to devote attention to environmental issues or engage in political efforts. As it was explained, *"If you're working long hours, you're certainly not thinking about your environment"* (Participant #21). Vulnerable communities may lack organizational power and have difficulty gaining leadership, support, or engagement from the community for advocacy efforts. Lack of political and organizational presence makes it

difficult to oppose environmentally detrimental issues. Lack of political literacy is also an issue, as vulnerable populations may be unaware of their rights, policies, or how to engage in political efforts.

Environmental activists also identified institutional factors as issues of concern for social service providers because they reinforce environmental issues such as neglect, inadequate response, or lack of response from their governments when faced with an environmental issue. Oppressive factors that contribute to this lack of response include wealth inequality and racism. For example, participant # 18 shared that government officials are more responsive to wealthier communities' concerns over environmental issues. Participants also identified how institutional racism and wealth inequality are engrained in environmental issues and contribute to the continued neglect of vulnerable populations. Participant # 19 stated: "This problem is rooted in the fact that we did not care about the least among us which are people of color, low-income communities, environmentally overburdened communities, vulnerable communities, tribes." Other participants provided examples of institutional racism, such as a case where European American communities received notification that their drinking water was unsafe while African American communities did not. Another example a participant cited was English-language informational meetings regarding the construction of a landfill in a Spanish-speaking community. Overall, such attitudes contribute to the lack of response to the needs of vulnerable communities and the environmental issues they face.

In addition to discussing barriers and institutional factors that social service providers should be concerned about, participants provided suggestions for possible solutions to address environmental issues in terms of prevention, education, and advocacy. Preventative measures, such as educating communities on emergency procedures and helping community members access resources for emergency preparedness kits, can be helpful in the event of an environmental disaster. Modernizing infrastructure is another preventative measure that would help communities build resiliency, withstand impacts from natural disasters, and limit industrial pollution. Participant #22 referenced the importance of modernizing infrastructure: *"If we feel the effects of drought, heat waves, sea level rise, we also have to try to be adapting to those by changing our infrastructure and adjusting how we build and design buildings, and streets, cities in the future."*

It was suggested the establishment of a national infrastructure bank to help fund reconstruction efforts. Other possible solutions include consuming resources responsibly and sustainably. Participants suggested individuals should consider implementing personal practices, such as biking, carpooling, reducing water consumption, recycling, and consuming more organic foods, to reduce personal impact on environmental issues. However, participants pointed out that communities should not bear the burden of adapting. Changes in resource consumption must occur at an institutional level, such as shifting towards sustainable industrial practices. These also could be the subject of advocacy; social work schools should ensure that future social workers understand that institutional change has far more potential than individualized change.

The importance of increasing education and awareness of environmental issues was emphasized. Educational efforts can take place in schools, on social media, and through community events. Educating individuals on environmental issues and informing them of possible solutions can inspire them to get involved in environmental change efforts. Schools of social work could also be part of such efforts. Participant # 9 spoke to the role education can play in empowering communities to advocate for change:

"I believe the most important thing that should be done is educating those populations about the importance of registering to vote, getting out to vote, educating them that their voice—how to make their voice heard, that their voice is important. It's critical for them to be represented and that they understand that when they vote, what the issues are and who of which candidates will vote for legislation that will benefit them and protect them."

Education is considered an important aspect of advocacy to organize and empower communities to get involved in environmental justice efforts. Participants emphasized the importance of advocacy and provided suggestions for engaging communities in advocacy. This would involve connecting communities with environmental justice organizations or advocacy groups, registering to vote, calling or scheduling visits with legislators, and increasing morale in communities towards civic engagement.

Participants spoke about the value of exposing vulnerable populations to not only the issues themselves, but the environment in general. One participant shared that her organization hosts fun community events to expose children to nature and foster an appreciation for the

environment. The value of educating the public through social media as a way to bring attention to environmental issues was highlighted and engaging the communities in advocacy efforts as well. Participant # 23 suggested that communities begin advocating for change at the local level:*"The power of just individuals to organize and make statements collectively to their local policy makers and decision makers just through organization and persistence.... I think that's a lot of times where it has to start in order to get things rolling."*

They also suggested specific issues communities should consider advocating for, such as progressive reforms, taxation, unemployment, affordable housing, clean water, foreign policy, and social welfare. Participants spoke to the intersection between social and environmental issues and emphasized the importance of addressing racial, economic, and environmental issues simultaneously to achieve environmental justice. They understood the difficulties vulnerable populations face in making time to advocate for environmental justice given their own precarity. Social workers should see all efforts to alleviate economic struggles as potentially offering space for efforts toward economic justice.

4 Discussion and Implications

This study found three major themes where environmentalists defined environmental issues, described impacts, and articulated important insights for social services providers working with vulnerable populations affected by environmental injustices. The results suggest that disproportionate impacts on vulnerable populations are rooted in institutional discrimination and oppression, which is consistent with previous literature and the critical theory. The environmental issues involving pollution in communities, exposure through work, and vulnerability to natural disasters were reported as most impactful for nondominant racial/ethnic groups and people of low SES. This finding supports existing literature that environmental hazards disproportionately affect communities that are low-income and nondominant racial/ethnic [8,31,32]. Participants often linked environmental impacts to social justice issues, particularly poverty and institutional racism, which contributes to existing literature on environmental racism [6].

Participants further described the intersection between social justice and environmental justice when discussing suggestions for moving forward. Participants acknowledged several barriers and institutional factors that perpetuate environmental injustice at a systematic level, which supports the existing literature [13,21,31,33]. The identification of vulnerable populations as disproportionately linked to environmental racism and injustice meets Horkeimer's (1972) [7] condition of critical theory in explaining what is wrong within current societal conditions.

When discussing possible solutions, some suggestions included individual actions, such as making more sustainable choices, but primarily focused on collective change efforts that involved educating, advocating, and organizing communities. Environmental activists such as those interviewed have been "the individuals who can act to change the situation"; social workers have the opportunity to play the role of advocates and activists knowledgeable and concerned about vulnerable communities.

Given the environmental activists' attention to the intersection of social justice issues and environmental issues, social service providers can help address environmental issues because they possess the training and skillset to respond to social issues. Participants' understanding of the need for change suggests that social workers should consider community-based and change efforts, which include educating the public, teaching sustainable lifestyle practices to individuals, supporting sustainable industrial practices, advocating for policies to address environmental issues, and empowering communities to act on advocacy efforts within their local governments. These solutions would require community development, capacity building, policy advocacy, and networking skills. Social service providers can apply these existing skills to the proposed solutions. Therefore, in this section, various social service practices and implications will be discussed in depth based on the findings from the current study.

First and foremost, environmental crises should be seen as a form of social injustice because environmental crises disproportionately affect vulnerable populations. Hence, social service providers are obligated to take various actions in their practice and policy to address these issues. This will require a shift in practice, theory, and values [25]. Awareness of the interrelationship between nature and humans, recognition of the value of nature, pursuit of justice for equal access, to prevent environmental deterioration, and respond to natural disasters is necessary [25]. Societal change, from micro to macro levels, must be initiated to make it more sustainable and inclusive [26]. For instance, environmental social work recognizes environmental injustices, structural inequalities, and power differentials that exist. Policy and political activities are

essential means to address these issues. According to Krings and collegues, social services providers have largely been absent in discussions related to environmental policy [20]. Service providers can critique laws, inform public debate, contribute to policy formulation, advocate for the most marginalized at levels from the local to the global [11], facilitate public forums to raise consciousness, and call on lawmakers to enact and enforce change [27, 34].

According to the critical theory as a framework [5], community-based work is vital to achieve environmental justice. Participants suggested informing communities about issues, teaching communities how to engage in advocacy, registering community members to vote, and informing members how to find candidates that best represent their needs. According to Dominelli (2012) [34], mobilizing communities to participate in the environmental justice movement will be a critical step [34]. Environmental justice requires social service providers to address structural as well as individual forms of oppression that affect vulnerable populations [11, 35]. Social service providers can engage in empowerment in this issue by assisting in translating individual and community stories about environmental harm to policy [6]. Participants stressed the value of the voice of impacted communities and described it as important to empower communities to engage in advocacy and share their stories. Social service providers should consider communities' wishes, traditions, values, and cultural sensitivities. Failing to do so would contribute to the marginalization of the populations social service providers seek to serve [36]. Advocating for change at a federal level can be discouraging for vulnerable populations, given the lack of response and neglect they have experienced. Given the inaction and lack of commitment of some governmental leaders, social service providers can empower communities to effect change in their local governments. Participants noted that local change can inspire communities to continue to engage in local advocacy efforts because, if they succeed, they are able to see the impacts within their local communities and be encouraged by the possibility of change. Participants reported success with implementing environmental policies within local governments and suggested advocating for change at the local level.

Participants suggested educating communities about sustainable practices such as waste management and sustainable consumption. More importantly, social service providers can support communities to be more eco-centric [25]. Social service providers can facilitate discussions on projects among stakeholders that are solution-oriented that prioritize sustainability [6, 37]. Participants suggested that vulnerable communities may contribute towards the pollution of their own communities due to lack of education on environmental issues. They noted a general lack of awareness of environmental issues in vulnerable communities. Vulnerable populations are often more concerned with acute issues like violence and poverty and only become engaged in environmental issues when they experience direct impacts, such as through lead in their water.

Social service providers can provide support during environmental hazards and displacement or trauma in the event of natural disasters by advocating for measures that will expand housing affordability and access, mitigate financial and psychological costs, and help overcome obstacles that include loss of jobs, interruption in education, disruption of support networks, experiences of discrimination, and high costs of childcare [38]. Better housing for all peoples can prevent unnecessary deaths such as those due to respiratory illness triggered by air pollution [11]. Social service providers have a responsibility before and after natural disasters to work with local communities to raise consciousness and mobilize communities to secure environmental justice, reduce vulnerability, and enhance resilience [11]. Social service providers need to assist with highlighting how to mitigate risks, be prepared to take action, and communicate who and where individuals should go to in case of disasters [11]. Participants suggested the need to prepare vulnerable populations to help communities be more resilient to impacts by connecting them with emergency preparation supplies in the event of a natural disaster as well as ensuring that the community is educated on evacuation procedure and centers.

5 Limitations and Conclusion

The current study makes noteworthy contributions to the literature on environmental justice and social services; however, certain limitations should be acknowledged. First and foremost, the utilization of nonrandom sampling methods resulted in a final sample predominantly comprising White individuals (72%), with a geographical focus primarily on Southern states (52%), including Florida, Tennessee, and Texas. Furthermore, it is essential to note that the interviewed environmentalists in this study may lack formal education and experience in social services. Consequently, the findings of this study should not be generalized. This limitation implies that the majority of environmental activists may be predominantly of a specific gender, race, and background.

Future research endeavour should strive to address this limitation by employing more diverse recruitment strategies to capture the experiences of environmental activists from various backgrounds. Additionally, as environmental concerns gain increasing prominence in social services and practitioners accumulate more experience, subsequent studies should delve into the perspectives of social service providers regarding environmental justice within the communities they serve. Given the integration of environmental concerns into social service practice, research is imperative to assess its effectiveness, particularly with modified interventions. Furthermore, future studies could benefit from a direct examination of the perspectives of vulnerable populations to gain a comprehensive understanding of how they navigate and experience environmental issues.

Conflicts of interest

The author declares there is no conflict of interest.

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