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Resilience and recovery from an environmental disaster: the journey of child survivors of the Kiteezi landfill in Uganda

Mahadih Kyambade^a , Luke Sewante^a and Afulah Namatovu^b 

^aDepartment of Leadership and Governance, Makerere University Business School, Kampala, Uganda; ^bDepartment of applied computing and IT, Makerere University Business School, Kampala, Uganda

ABSTRACT

This study explored the resilience and recovery of child survivors following the 2024 Kiteezi landfill disaster in Uganda, where recurrent landslides displaced families and left lasting emotional, psychological, and social impacts on young survivors. Utilizing a qualitative phenomenological approach, we conducted in-depth interviews with child survivors and their guardians, focusing on their experiences of displacement, trauma, and adaptation in the wake of the disaster. Twenty participants were identified through convenience and snowball sampling, facilitated by local leaders who played a key role in engaging the community and establishing a supportive framework for this research. The findings revealed the depth of trauma experienced by child survivors, marked by vivid memories, sadness, and symptoms of post-traumatic stress. However, a recurring theme of resilience has emerged, with many children finding solace through family support, faith, and community connections. This study highlights the importance of culturally sensitive community-based support systems and trauma-informed care in fostering resilience and aid recovery in young disaster survivors. These insights contribute to broader discussions on children's mental health, resilience, and the effectiveness of family and community structures in post-disaster recovery, underscoring the need for comprehensive mental health resources to support child survivors in the long term.

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Introduction

Environmental disasters have profound impacts on vulnerable communities, especially in densely populated areas such as urban slums (Kyambade et al., 2025). In developing countries, these disasters disproportionately affect children, who are often the least resilient, yet most affected by the immediate and long-term repercussions of such crises. The Kiteezi landfill, located on the outskirts of Kampala, Uganda's capital, is the largest waste disposal site in the country. Over the years, Kiteezi has posed severe health and environmental risks to nearby communities, particularly affecting children who grow up in hazardous conditions marked by air and water pollution, toxic waste, and a lack of basic sanitation facilities. According to United Nations International Children's Emergency Fund (UNICEF), (2019), environmental hazards in areas such as Kiteezi heighten children's susceptibility to physical health issues, cognitive impairment, and emotional distress, thereby affecting their long-term development. The vulnerability of children in these settings is not only due to their age but also because of the limited resources available for disaster recovery, compounded by systemic poverty and restricted access to healthcare and education.

Environmental disasters in Uganda have historically been associated with rural or mountainous areas, such as landslides in the Elgon region, where communities face unique challenges related to geography and infrastructure (Serwajja et al., 2024; Kisira et al., 2023). However, the Kiteezi landfill disaster marked a significant shift, introducing a new type of environmental crisis in an urban setting. Unlike natural

CONTACT Mahadih Kyambade  mahadkyambade@gmail.com  Department of Leadership and Governance, Makerere University Business School, Kampala, Uganda

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disasters, the collapse of the landfill was a man-made catastrophe, exposing urban slum communities to hazardous waste, toxic air, and water pollution (UNICEF, 2019). This event underscored the vulnerabilities of children in densely populated urban areas, where systemic poverty and weak infrastructure exacerbate the impacts of such crises (Norris et al., 2008). The peculiarity of the Kiteezi disaster lies in its urban context, which contrasts with the predominantly rural disasters previously documented in Uganda. This study highlights the urgent need to understand child resilience and recovery within this unique urban context, providing a foundation for tailored interventions to address the distinct challenges posed by man-made environmental disasters in rapidly urbanizing regions (Aldrich, 2012).

Resilience refers to the capacity of children to adapt and maintain or regain functional well-being despite experiencing significant adversity. It emphasizes the ability to withstand and navigate through challenges while developing adaptive strategies that promote growth and well-being. In contrast, recovery is defined as the process through which children return to a state of stability and functionality following the disruption caused by a disaster. This concept primarily focuses on regaining pre-disaster conditions and addressing the immediate impacts of the event to restore normalcy (Bonanno et al., 2010). These distinctions highlight the broader scope of resilience, which can encompass recovery while extending beyond it to include long-term adaptability and thriving.

Disaster resilience among children has become a focal point in recent years, with scholars exploring the factors that contribute to or hinder recovery in young populations affected by crises. Studies by Peek and Fothergill (2008) emphasize that children's resilience is highly context-dependent and shaped by family support systems, community resources, and policy interventions that ensure psychological and physical health. The Kiteezi landfill disaster, characterized by a sudden collapse and subsequent health crisis, exemplifies the challenges faced by child survivors in resource-limited settings. Previous research (Masten & Obradović, 2008) has highlighted that such environmental disasters can disrupt the developmental trajectories of affected children, posing lasting challenges to their mental health and academic performance.

Research on environmental disasters in low-income urban areas has found that building resilience must address both immediate survival needs and long-term psychosocial recovery (Norris et al., 2008). In Kiteezi, for instance, children faced not only physical displacement but also psychological impacts, including trauma, fear, and anxiety, which could impact their growth into adulthood (Kyambade & Namatovu, 2025a). Bonanno et al. (2010) and Kyambade and Namatovu (2025b) showed that post-disaster resilience among children relies heavily on the availability of mental health resources and community-driven support systems. However, in Uganda, there is limited infrastructure to provide such resources, particularly in under-resourced regions, such as Kiteezi, where children remain exposed to ongoing environmental hazards. Moreover, research by Aldrich (2012) suggests that community cohesion is essential for successful recovery, as social networks often determine access to resources and support during crises. Children from tightly knit communities are more likely to receive help from extended family members, neighbors, and local organizations. Conversely, in communities such as Kiteezi, where displacement and poverty weaken social bonds, children may struggle to find necessary support for recovery, underscoring the need for policy-driven interventions.

While disaster resilience has garnered significant scholarly attention, much of the existing research focuses on natural disasters and their impacts on children in high-income countries (Peek & Fothergill, 2008; Masten & Obradović, 2008). Studies examining man-made environmental disasters, particularly in low-income urban contexts, remain scarce. Furthermore, research in these settings often prioritizes macro-level analyses of community recovery and infrastructure development, neglecting the lived experiences and recovery mechanisms of child survivors. This creates a critical gap in understanding how socio-ecological factors such as family dynamics, community support, and systemic inequalities, shape resilience among children in resource-limited environments (Norris et al., 2008; Bonanno et al., 2010). Specifically, the Kiteezi landfill disaster represents a unique case where the interplay of environmental hazards, poverty, and weak social infrastructure has compounded the vulnerabilities of children, yet there is limited empirical data on how these children navigate recovery. Addressing this gap, the present study incorporates the perspectives of child survivors to provide a nuanced understanding of resilience and recovery in the context of environmental disasters in Uganda, offering new insights into child-centered resilience-building strategies (Aldrich, 2012; UNICEF, 2019).

To examine the Kiteezi landfill disaster, this study builds on previous findings by incorporating the perspectives of child survivors to understand their resilience mechanisms. Through a holistic analysis of their recovery journey, this research aims to highlight not only the challenges they face but also the resources and strategies that could foster resilience. In doing so, it provides insight into how governmental and non-governmental organizations can support child-centered recovery in Uganda and other low-income settings facing environmental challenges. This study explores the resilience and recovery journey of child survivors of the Kiteezi Landfill Disaster in Uganda, shedding light on their unique struggles and the broader socio-ecological factors that influence their recovery. By understanding their experiences, this study aims to contribute to resilience-building frameworks that support children's well-being following environmental crises.

The study seeks to answer the following questions:

1. What resilience strategies do child survivors of the Kiteezi landfill disaster employ in their recovery journey?
2. How do socio-ecological factors influence the resilience and recovery of these children?
3. What policy gaps exist in supporting child resilience and recovery in the context of urban environmental disasters in Uganda?

By addressing these questions, this research aims to contribute to the development of targeted policies and community-based interventions that address the unique challenges faced by child survivors of environmental disasters, ultimately informing policy and practice in similar contexts.

Literature review

Disasters such as hurricanes, wars, earthquakes, and epidemics significantly impact children, particularly those aged 0–18 years, who often experience more severe symptoms following these traumatic events (Coly et al., 2024; Durmaz & Suiçmez, 2024; Kyambade & Namatovu, 2025a). Natural disasters are known to affect children in three primary ways: they harm physical health, lead to mental health challenges, and disrupt education by displacing families, destroying schools, and forcing children into labor to support their families during crises (Kousky, 2016; Vanaken & Danckaerts, 2018). For instance, injuries from disasters can vary from soft tissue damage to severe musculoskeletal injuries, further exacerbating the vulnerabilities of affected children (Kılıç, 2020; Kyambade et al., 2024a). In the aftermath of the 2004 tsunami in Thailand, a staggering 57.3% of children exhibited symptoms of Post-Traumatic Stress Disorder just six weeks post-disaster (Aral, 2023). Factors such as infrastructure deterioration and environmental changes, often following disasters, constrain children's access to essential resources like clean water, food, and healthcare services, heightening their susceptibility to infectious diseases (Topluoglu et al., 2023).

Children's emotional well-being is also at risk, as illustrated by the long-term consequences following the Black summer bushfires of 2019/2020, which adversely affected child development (Eagland et al., 2024). The nutritional health of children is impaired during disasters, resulting in increased morbidity and mortality due to malnutrition, communicable diseases, and mental health challenges (Adeoya et al., 2022; Osofsky et al., 2015). Resilience has emerged as a vital concept in understanding how children cope with adversity. Originating in the 1970s, resilience refers to the ability to adapt effectively to challenges that threaten survival and development (Goldstein & Brooks, 2023). In contexts of poverty, armed conflict, and environmental hazards, resilience allows children to cope and recover (Crandon et al., 2022). Masten and Barnes (2018) highlight the importance of exposure, adaptive needs, and supportive relationships in fostering resilience among children.

Developing resilience through education has also been emphasized, with a focus on integrating disaster preparedness into school curricula (Seddighi et al., 2022). However, there remain significant gaps in promoting resilience in schools, particularly in under-resourced settings. Evidence-based training for coping with disasters is critical, as demonstrated by initiatives that utilize public communication campaigns and digital resources to prepare children for emotional challenges (Raccanello et al., 2020; Wisner et al., 2018).

In the recovery process after a disaster, re-establishing connections with caregivers is essential for children (Kousky, 2016). Research indicates that children should be recognized as active participants in

recovery, as their perspectives can inform effective rebuilding strategies (Freeman et al., 2015). Initiatives like the Flood Manifestos for Change illustrate how children can advocate for their rights and needs in the aftermath of disasters, challenging their status as victims (Mort et al., 2018). Programs like the Louisiana Spirit Hurricane Recovery Program demonstrate the importance of culturally appropriate mental health services for children, addressing immediate needs while preventing long-term psychological issues (Brymer et al., 2019).

In the context of environmental justice, children are among the most vulnerable to the impacts of disasters, which compromise their right to a safe and healthy environment (Pennea et al., 2021). As children become more aware of their rights, they actively engage in discussions on climate change and advocate for solutions to environmental issues (Hickman et al., 2021). Gounder and Tan (2024) stress the need for a socioecological approach to address disparities in environmental justice, particularly by empowering children and communities to collaborate in advocating for their needs. Studies highlighting socioeconomic disparities in access to green spaces in schools further emphasize the importance of equitable resource distribution (Van Velzen & Helbich, 2023). In Uganda, where children are often disproportionately affected by environmental disasters, addressing these inequalities is crucial for promoting resilience and ensuring that every child has access to a safe and supportive environment for recovery and growth.

Theory

The Ecological Systems Theory, developed by Urie Bronfenbrenner, is particularly relevant to understanding the dynamics of disaster impact on children, their resilience, recovery processes, and environmental justice. This theory posits that human development is influenced by various nested systems of relationships, ranging from immediate environments like family and school (micro) to broader societal influences (macro) (Bronfenbrenner, 1979). In the context of disasters, these systems interact to shape children's experiences and recovery, emphasizing the role of familial support, community resources, and governmental policies (Masten & Barnes, 2018). Furthermore, the theory highlights the importance of examining environmental justice, as systemic inequalities can significantly affect children's access to resources for recovery and their overall well-being (Pennea et al., 2021; Gounder & Tan, 2024). By applying Ecological Systems Theory to the Ugandan context, researchers can gain insights into how local community dynamics and broader environmental issues collectively impact children's rights and resilience in the face of disasters.

Methodology

The Kiteezi landfill is situated in the nearly 1,000-person Wakiso District. Because settlements are situated on hillsides, they are susceptible to damage from landslides that have occurred frequently in the area this year (2024). This area is heavily populated, increasing the risk of landslides. Children who were displaced by landslides and lived in the Kiteezi dump were included in this study. Months after the tragedy, respondents were able to provide precise and thorough descriptions of the incident, and psychiatric symptoms were noticeable. The community and local researchers worked together to construct the study. To complete the interview guide, find participants, and set up interviews, we collaborated with our community liaison and kiteezi leaders. The ethical importance of community partnerships in global health initiatives is becoming more widely recognized (Reynolds & Sariola, 2018, Burrows et al., 2021). The success of this project was largely due to cooperation and participation, which produced a more complex and well-thought-out initiative that focused on the Kiteezi dump community's experiences.

In August 2024, a devastating landslide struck the Kiteezi landfill in Uganda, marking a new tragedy for the community already grappling with the impacts of previous disasters. This latest event was triggered by heavy rainfall, which caused a large section of the landfill to collapse. Tragically, the landslide resulted in the deaths of at least 23 individuals and left approximately 150 families displaced (Nafula, 2024). Rescue efforts were hampered by the unstable conditions at the site, and many residents reported missing persons among their community. The Kiteezi landfill, situated in a densely populated area, continues to pose significant risks to its residents, particularly children, who are vulnerable to the trauma and instability caused by such recurring disasters. This incident underscores the urgent need for comprehensive disaster management strategies and community support to mitigate the ongoing risks faced by the Kiteezi community.

Participants

We used convenience sampling because the lives of refugees and displaced children are often unstable. According to Fussell et al. (2014), convenience sampling has proven to be a successful technique for attracting migrants for whom there is no population registry or full sample frame. Kiteezi leaders were the first to attract participants (Kyambade et al., 2024b). We used a method called snowball sampling, in which interview subjects were invited to suggest other children who would be interested in taking part. The respondents' exposure to the Kiteezi landfill collapsed in 2024, and their experience with the ensuing displacement, which is defined as having to leave one's house for at least a week, was the main requirement for inclusion. We made an effort to include individuals in our recruitment who exhibited a variety of socio-demographics and experienced varying lengths of displacement and re-habitation patterns (moving to other locations, building new homes in their original villages, or returning to their original homes) as shown in Table 1. In-depth interviews of Sixty minutes were conducted. For phenomenological research, there is no standard sample size; recommendations vary from one to 10 interviews (Starks & Trinidad 2007) to 5–25 interviews (Cresswell, 1998). Therefore, 20 participants were included in this study. Since minors may not have the authority to decide whether to participate in the study, some respondents were 18 years old at the time of the landslide, while others who were below the age sought consent from their guardians to participate in our study. After consulting with our colleagues in the area, we decided not to offer any incentives to participate. The choice of 20 participants was guided by the need to obtain a rich and diverse dataset while maintaining the flexibility inherent in qualitative research methodologies. According to Starks and Trinidad (2007) and Creswell (1998), phenomenological studies can effectively utilize sample sizes ranging from one to 25 participants, allowing for the exploration of complex experiences and emotions related to the traumatic events faced by children affected by the Kiteezi landfill landslide. A sample size of 20 is robust enough to capture varying perspectives, ensuring representation across different socio-demographic backgrounds, lengths of displacement, and rehabilitation patterns. This study was approved by the Committee on Research Ethics of the Faculty of Management and the Institutional Review Board of Makerere University School with number MUBS-REC-2024-138. To safeguard the mental well-being of respondents, we implemented several measures. Informed consent was obtained from all participants prior to their involvement in the study. For minors, consent was secured from their guardians, and assent was obtained from the minors themselves, ensuring that their willingness to participate was respected. Participants were provided with detailed explanations of the study's purpose, procedures, and their rights, including the right to withdraw at any time without consequences. Consent was obtained in written form to document agreement and compliance with ethical standards. Additionally, we collaborated with community leaders and mental health professionals to develop an interview guide with sensitive questioning techniques aimed at minimizing emotional distress. Participants were encouraged to skip any questions that triggered discomfort and were assured that psychological support services would be available if signs of distress emerged during or after the interviews (Kyambade et al., 2024c). These measures were implemented to uphold ethical principles and prioritize the participants' well-being and recovery.

Participants in the study were of varying ages at the time of the landslide. Those below 18 years sought consent from their guardians, while those 18 years and above provided their own consent. The sample had a near-balanced representation of male and female participants, ensuring gender diversity.

Table 1. Socio-demographic details of the participants.

Characteristic	Category	Number of Participants (n)	Percentage (%)
Age at time of landslide	18 years and above	6	30
	Below 18 years	14	70
Gender	Male	9	45
	Female	11	55
Length of displacement	Less than 6 weeks	7	35
	6–12 weeks	8	40
	More than 12 weeks	5	25
Rehabilitation pattern	Returned to original homes	7	35
	Built new homes in original villages	6	30
	Moved to other locations	7	35

Source: Author's Own Work.

Additionally, the participants experienced varying durations of displacement due to the landslide, highlighting the differences in their recovery timelines. The rehabilitation patterns among the participants were also diverse, reflecting different coping strategies post-disaster. Some returned to their original homes, others built new homes in their original villages, while some relocated to other locations.

Data collection

Interviews were conducted to gather data from August 2024. Our research team conducted the interviews in English. We respected respondents' requests regarding the location of the interviews; most were held in the homes of the respondents, while a few asked for more convenient locations, such as their places of employment. We conducted interviews in private settings, because some of our queries were delicate. We conducted interviews and started conversations regarding the three primary phenomena (child recovery and resilience) using a semi-structured interview guide (Kyambade et al., 2024c). As is customary, the interview guide was utilized to help structure the discussion and highlight different experience levels, but it was not strictly followed (Josselson, 2013). Inquiring further and seeking more information, interviewers pressed participants to participate in the study and allowed their audio to be recorded. The research helper transcribed the interviews in English.

Data analysis

We employed thematic analysis to examine the data collected from the interviews, which allowed us to systematically identify and interpret key themes related to the recovery and resilience of children following the landslide disaster. This method was chosen for its suitability in capturing the complexities of participants' lived experiences and its flexibility in accommodating the rich, qualitative data we obtained.

The data analysis was guided by phenomenological approaches to explore and comprehend how children experienced the landslide disaster and the significance of these experiences (Wertz, 2005). This methodology was deemed suitable for the study as it is designed to capture the essence of participants' lived experiences, which aligns with the study's aim of understanding resilience and recovery among child survivors. Phenomenology allows for in-depth exploration of participants' subjective experiences, making it particularly effective for studies focused on psychological and emotional phenomena.

The analytical process followed established protocols for phenomenological analysis (Malterud, 2012; Sells et al., 2004), which included systematic steps to ensure rigor and validity. First, a comprehensive reading of the transcripts was conducted to gain a 'total impression' of the data as a whole (Malterud, 2012). This initial step was crucial for identifying overarching patterns and immersing the research team in the context of participants' narratives. The choice of this method was appropriate as it facilitated a holistic understanding of the data, an essential component of phenomenological inquiry.

Next, we prepared a one-page summary of each transcript using statements and words that encapsulated the participants' essential interpretations of the events in relation to the research questions (Malterud, 2012; Sells et al., 2004). This approach, often referred to as 'systematic text condensation', was particularly suitable for producing themes that are both contextually relevant and grounded in the data (Malterud, 2012). This step provided a structured way to distill the essence of the participants' experiences, ensuring that critical elements were not overlooked.

Following the individual transcript summaries, we employed creative variation to identify key themes and synthesized disparate ideas into a single coherent narrative. This analytic step enabled us to move from individual experiences to a broader understanding of shared themes, making the process both systematic and interpretive. The absence of a priori hypotheses further ensured that themes and narrative structures emerged organically from the data, aligning with the inductive nature of phenomenology.

To ensure clarity and authenticity, illustrative quotations from the interviews were selected to support the key themes and presented in the Results section. This step enhanced the transparency of the analysis and provided concrete evidence for the themes identified. Moreover, divergent data were incorporated into the analysis, leading to a more refined overall framework through an iterative process (Giorgi, 2009). This iterative approach allowed us to critically examine and adjust our interpretations, ensuring that the findings captured the complexity and central nature of the phenomenon under investigation.

By adhering to these rigorous analytical procedures, the study provides a trustworthy and nuanced understanding of the resilience and recovery processes of child survivors of the landslide disaster.

Findings

Results of in-depth interviews, the survivors had a lot in common when it came to coping with the aftermath of the Kiteezi Landfill Disaster: they did not have someone they could confide in to share their experiences and feelings; they kept their stories to themselves; they still felt trauma, horror, and sadness; and they all continued to accept the tragedy as God's will. Who and how they receive help have a significant impact on how far they can go in life. Numerous answers revealed divergent perspectives about the future. While some people are lost, bewildered, and unemployed, others are incredibly hopeful and still think that they have a place in society. The survivors also described the various forms of assistance they provided. While some feel alone and alienated, others still have parents, siblings, and/or close family members who can support them through everything.

Managing the catastrophe

The survivors' responses to and triumphs over the challenges presented by the Kiteezi Landfill Disaster are described in the following section. They struggled and were reluctant to express their emotions and experiences. Despite their improved ability to cope with trauma, they nevertheless experience intense sadness when they think back about the events. According to the findings, they consistently return to God and find solace in their faith.

Unwilling to communicate emotions and experiences

One person clarified that she had told certain people about her experiences but not in great detail. She claimed that it was uncommon for her to be open up to the interviewer and share her experiences. She went on to say that this was the first time she had expressed many of her emotions. After sharing her tales, she felt happier. She claimed that she was typically a private person who did not express her emotions to others in an open manner. She found it challenging to express her emotions and stories throughout the interview.

Well, I guess I want to share it with people, but I have trouble coming up with the right words, describing them in detail, and giving a clear explanation.

Her mother, father, and sibling perished during the Kiteezi Landfill Disaster, leaving her with just one brother. It is interesting to note that she keeps sorrow and anxiety from her brother. She clarified that she prefers to keep her sentiments constant because sharing them is difficult for her, and she finds it difficult to believe that people will listen to her.

According to another female participant, she only confides in a small group of people she trusts, and frequently shares her feelings with her close pals. Even if she feels compelled to share, she does not do so unless she is very certain that she can trust another person.

The people closest to me are my close buddies. I could talk about some things but not everything. One individual, nevertheless, with whom I can discuss everything. I couldn't handle all those emotions on my own. One somebody I could rely on. I would speak with that individual if I had an issue. (R11)

The male participants were more private about their emotions. They informed the researchers that they had chosen not to share because they were unsure of how and with whom to do so. The respondents clarified the following:

Sharing with other people? Oh, no! Everything is kept private by me. No, I don't wish to express my emotions to anybody. I wonder. In what way may I share? It would be best if I kept it private.

One respondent, who lived alone at the time of the study and had lost all his family, stated that while he still remembered everything, he wished to put the pain behind him. He still weeps in private when he thinks back on what transpired, but he makes every effort to keep his emotions intact.

I don't want to recall the incident. I don't want anyone to know my story. I can still clearly recall every detail. I don't want those recollections to be heard by anybody else. I cried every night for a few months following the Kiteezi Landfill Disaster, but I never did so during the day. During the day, I was occupied playing. I resided at a relative's residence. I wept in private. Nobody ought to be aware. (R05)

According to the respondent, he had never provided any detailed explanation. Even while staying at his uncle's house and sharing a room with his cousins, he cried. He sobbed quietly in a secluded room whenever he felt low. He only expressed his thoughts on his uncle's family once upon his initial arrival at home. Instead of talking about the actual Kiteezi Landfill Disaster, he would tell tales about his younger brother, who also perished as a result.

My two cousins and I shared a room at Kitetika, a nearby village. I kept it a secret. Telling tales? No, I didn't do it. My family simply inquired as to how it happened once I arrived at Kitetika. Simply said, I'll tell them about my younger brother whenever I tell stories. He and I used to go everywhere and do everything together, and I was constantly with him. (R08)

Tragedy and sadness

The participants remained depressed. They struggle to overcome their despair and dread that the same things may occur again. The majority of participants found that while grief is significantly more difficult to control, fear is easy to comprehend and deal with. The respondent informed the researchers that while her fear of the earthquake decreased, she still felt depressed.

Yes, there was a sense of fear at the time, but it has since subsided. I'm no longer terrified, God willing. I feel normal, so I just stay at home in the event of a landfill disaster. I remained inside the house by myself yesterday when the government came to re-transfer the landfill. I am therefore less concerned about a landfill catastrophe presently. (R07)

Respondent 11 stopped interacting with friends and other people. She spent much of her time in her own room, which was the only place where she felt safe. She remained to herself and limited her social life because she was labeled crazy or insane by others in the community.

People believed I was sleeping because I entered the chamber, which was interpreted as a place of freedom of expression. I was even called crazy at one point. They claimed that I was insane since all I did was go to school, come home, tidy the house, and then lock myself in my room. Just that! (R11)

At the time, Respondent 07 described her feelings as 'broken', meaning she was unable to accept the loss. She had never lived with her father before, and her mother's loss was intolerable, making it more difficult. She was in denial of her mother's passing and was only able to come to terms with it two months later; at this time, she eventually gave up searching for her.

I was shattered. Since my father had been away at work, I had never really lived with him; instead, I lived with my mother, my younger sister, and my grandmother. I was therefore unable to accept this loss. I was still quite young. Every morning when I woke up, I would call out to my mother, asking, "Where is mama, where is mama?" Despite being informed that my mother had passed away, I continued to search for her. In sixth grade, I began to come to terms with the idea that my mother was no longer living with us. (R07)

Tears still fall into grief. One respondent, who is now living alone, claimed that anytime she thinks about her mother, she will start crying. The sadness was heightened throughout these hospital stays because this courageous girl had breast cancer and had undergone three surgeries to treat it.

I was able to come to terms with my mother's passing when I returned to school. I gave up trying to find her. Well, I'm still really depressed, and I still am. Now I live alone, alone. I made the decision to live alone after my father remarried. Every time I think of my mother, especially when I'm ill, I cry. (R04)

Although the respondent is not particularly concerned about the landfill disaster and has never been terrified of a rubbish tragedy, he is nonetheless worried that a Kiteezi Landfill Disaster may occur again. He still experiences sadness, particularly when struggling. The respondent reported that he kept having flashbacks of the last time he spent with his mother. He continued to feel bad about not saving his mother.

All of my family members were carried away by the water, including myself, but I managed to grip my mother's hands. My mom and I were separated after I noticed a large log was going to strike her hand, so I took my hands off of hers. I could only grip her hair, but it was slick, and I could feel her slowly slipping out of my grasp. She was sick at the moment, so if I held her hands tighter...If I were to hold her... (R03)

God's will

Despite living alone, two respondents who lost both parents and all their siblings claimed that what had happened was a test and God's plan. There was no grounds for them to be angry with God.

This is a test from God. We agree to it. (R07)

God put us to the test. We must not be angry with God. (R03)

According to another respondent, she dismisses her anger toward God. She believes that wisdom exists in the challenge that God has given them. After the catastrophe, she believed that she had truly improved as a person. She went on to say that God is in charge of everything, and that he knows what is best for humans. The respondent stressed that we should not voice grievances to God.

Perhaps rage is a natural emotion in all people, but I always ignore it. Perhaps God sent us a test, but we're not sure. Regardless, God will undoubtedly grant us happiness in the end. All of that has wisdom in it. Therefore, I accept it as is. If God provided this or tested me, then yeah, I did get more resilient, therefore it's like that. (R05)

The respondent ultimately found peace after struggling to accept her mother's death. She claimed that her belief that her mother died as a martyr and would thus be allowed entry into heaven by God is what has strengthened her. Seeing her classmates with their mothers makes her sad. She finds it easier to accept, though knowing that her mother has a happy ending.

They claimed that martyrs were those who perished in the fires, those who perished in the sea, and those who lost their lives in defense of their faith. When I learned that my mother was a martyr, I knew that she would not be punished in her grave; God would assist her, and that we would all rise at the end of time. She receives assistance in her burial and is not subject to any penalties. (R01)

The respondent believes that everything happens for a reason because of God. Everything always includes lessons learned. She believes that she has improved as a person. She believes that this was the lesson to be gained from the catastrophe and is now more self-reliant and appreciative.

Numerous lessons are to be learned. Allah took my mother, for instance. It contains knowledge. I became aware that I was an evil, mischievous child. I was obstinate and didn't listen to my parents. My father was not the only relative to tell me that I was obstinate. We still have the ideal, whole family, so perhaps I wouldn't listen if my mother were still here. Whatever I want, they will provide it to me. (R07)

The advancement of their lives

The manner in which survivors have advanced their lives is described in the following section. While some are uncertain and less inclined to fight, others display confidence in their future.

Hope and advancement

Respondent claimed that the catastrophe helped her grow as a person. She grew more self-reliant and was no longer a pampered child. After her parents perished during the Kiteezi Landfill Disaster, she relocated to other homes and grew up with her distant relatives. She has developed a strong individual. She clarified that she was enrolled in college but regrettably left due to personal and financial difficulties.

I wouldn't act in this manner. I used to be a pampered, unyielding individual, a youngster who might disobey their parents, and someone who did not pay attention. Perhaps I would still be like that, pampered, hmmm... still possessing negative traits that I can't seem to get rid of, if I still had parents. I don't have anyone I can rely on like I used to because I don't have any parents anymore. Thus, I had to make a positive shift. Yes, I still want to be a teacher. I currently instruct from home. (R03)

One respondent lost a brother, two sisters, and his mother. Prior to the Kiteezi Landfill Disaster, his father had passed away. Since he is currently pursuing his doctorate in Switzerland, he has survived with his other sibling, who has made him extremely proud. He is currently the student representative of the university's student body on his campus, because he wanted to demonstrate that a disaster orphan may still succeed. He claimed that his brother had given him the guidance he needed to accomplish this in order to attend college. He became aware that many of his acquaintances had failed to complete high school. He considered himself fortunate to have been sent to school where he could concentrate and learn.

In my situation, though, my brother was to blame. He sent me to school on purpose. He wanted me to concentrate on my studies, and because he was busy working, there were adults watching over me. (R02)

The respondent offered an intriguing perspective on how she grew to become the person she is now. She faced a wide range of challenges. She had to spend a considerable amount of time in the hospital for surgery to treat her brain injuries after suffering severe injuries during the Kiteezi Landfill Disaster. She had a tense connection with her new stepmother after her father remarried. In addition, she underwent three prior surgeries for breast cancer. Nevertheless, she remained hopeful about her life. Her father disapproved of her plan to pursue higher education because he believed that she lacked the necessary skills and was unable to provide for her financially. Nevertheless, and is currently in the final semester of her study. She aspires to become a writer and a teacher. She struggled to fulfill her dream, saying, 'I will be able to do it with God's will'. I assured my father that I would not give up, and that I would continue walking until I reached the end of the road.

Scepticism and perplexity

The respondent was quite negative about his chances of ever landing a good job. Since he was quite young. He completed high school, but like some of the other interviewees, he had difficulty finding employment in Kiteezi Village. He cleans homes and washes people's clothing as a laborer, earning 10,000 Ugandan shillings (3 dollars) every day.

I completed my high school education. Finding a job is difficult. I clean people's homes for a Somali employer. I have previous work experience. Even before the Kiteezi Landfill Disaster, I was employed. I started by gathering trash and doing any job I could. (R04)

The respondent feels pressured to achieve the same level of success as his father does. He lost all his family members during the Kiteezi Landfill Disaster. He worked as a day laborer on a golf course rehabilitation project and his father was a public servant.

I aspire to be a public servant like my father. However, it isn't feasible. I only completed high school, hmm. Why am I unable to emulate him? I am completely incompetent. Finding a job is not simple. I exclusively do golf course maintenance as a vendor. (R08)

The respondent was unsure of his future. He merely received an elementary school diploma. His family enrolled him in an Islamic religious school to learn how to read the Qur'an following the Kiteezi Landfill Disaster. There are no official schools there. He is currently employed as a waiter at hotels.

My family sent me to school two weeks after the Kiteezi Landfill Disaster. It was not an elementary school or a school; all you learned was how to read the Qur'an. Thus, primary school was my final educational experience. I stopped going to school. Oh well, I just studied by reading the Qur'an. I sell tea at a hotel where I work. I have to work in order to eat. (R08)

The respondent clarified that he had no plans or dreams for the future. He accepts whatever comes his way and works to maintain his position. He did not always have enough money to eat. Respondent and Respondent share food and assist one another.

Well, I don't have a dream or a plan. Whatever is in front of me, I accept it. We share meals if I have some. On sometimes, we purchase a single plate of rice for the two of us. We divided the meal. We prepare and share quick noodles. (R08)

Building resilience

We learned from the story that receiving support from friends, family, and the community was one of the most crucial things that helped the survivor overcome hardship. Not all survivors thought they had received enough help. Two respondents who had lost both parents had a tight relationship. The villages in which they resided were the same. They consider themselves fortunate to have the neighborhood's residents' backing.

Everyone in my community, particularly those in the vicinity of my home, is still related. They were helpful to me. (R10)

Since neither of us has a close family, we help one another. We hang out together. I occasionally spend the night at his place, and vice versa. (R13)

Both close and distant families cared for the majority of the disaster orphans. While some relocated to neighboring districts, others remained in the community. Although it was still primarily in the district of Wakiso. After completing his second term in high school, the respondent returned to Kiteezi village, although he had previously moved to a nearby hamlet.

I was taken up by my family in Kampala, where I remained until I completed my high school education. When I was done, I came back to this community. (R08)

The respondent continued to reside in the same village at the cousin's family. Two months after the Kiteezi Landfill Disaster, he returned home.

After two months in my cousin's place, I made the decision to relocate here by myself. I regret that I was mischievous and ended up becoming a burden. (R07)

Following the Kiteezi Landfill Disaster, the respondent was in very poor health. She was in a coma and had spent some time in the hospital. Numerous family members supported her. Visits from her relatives greatly assisted the respondents. She remained with her father once she returned to the village until he married again, at which point she made the decision to live alone. She occasionally saw her aunt and other family members.

I was really sick. After the accident, I spent a considerable amount of time in the hospital. I was unconscious. After my illness, I woke up and contacted my mom. I inquired about her whereabouts. They informed me of her absence. They informed me that she had passed away once I was well enough. I was sobbing because I was unable to accept it. However, a lot of families came and helped me. They were also quite helpful. I suppose they provided me a reprieve, because I didn't always remember my mother's passing. After that, I moved back to the village to live with my father. I wasn't always around them because my dad had gotten married again. I occasionally visited my mom's younger sister, my aunt. I occasionally spent time with my older cousins. I visited my relatives' houses one after the other. I continued to move. I then made the decision to live alone in this house. (R07)

After his mother had passed away, the respondent thought it was fortunate that his father had not remarried. He felt that several widows from the Kiteezi Landfill Disaster ignored their children because of their remarriage. His father would not do so, and he added.

Perhaps he believes that since he is still able to be happy without a wife, there is no reason for him to look for someone to replace our mother. Even though he could have remarried, Dad chooses not to. Many men remarried after their wives perished in the Kiteezi Landfill Disaster. However, occasionally the children are overlooked, or perhaps they will receive proper care and be happier. (R05)

The respondent clarified that both foreign assistance workers and the ladies in the neighborhood provided him with a lot of support.

Women will come and comfort me if I cry. They were aware that I had lost my mother. My family, the community, the aid workers, and the people from Kampala Relief helped me be strong and healed my scars. (R07)

They sent two respondents to the school. According to the respondent, he had many friends and felt supported. One respondent believed that having friends facilitated school life.

Well, because living in the village was difficult. We did everything together at school. It was therefore easier. (R04)

After four months of attending school, I went back to the village and have been living alone ever since. (R08)

Discussion

These findings shed light on the profound and multifaceted impact of the Kiteezi Landfill Disaster on survivors' emotional, psychological, and social lives. Many survivors expressed that they still carried the weight of sadness, horror, and trauma from the disaster. This aligns with existing studies that demonstrate that post-disaster trauma is often deep-seated, and survivors may exhibit prolonged distress and difficulty in sharing their feelings (Bonanno et al., 2010; Norris et al., 2008). Despite the time that has elapsed since the tragedy, survivors continue to struggle with processing their experiences, frequently opting to remain silent and internalizing their pain, rather than openly sharing their struggles. This reluctance aligns with social inhibition theories, which suggest that individuals in collectivistic societies may feel pressure to suppress emotions as a coping mechanism, especially when trust in support systems is limited (Hobfoll et al., 2007).

Survivors who had some family members or close friends to confide in showed signs of emotional relief, affirming the findings of Aldrich (2012) that social support significantly aids disaster survivors in managing trauma. However, the study reveals a stark divide in coping responses: some survivors express optimism about their future and aim to contribute to society, while others feel lost and uncertain. This variance underscores the importance of perceived control and social support, as highlighted in resilience literature, which posits that individuals with a stronger social network and control over their environment tend to recover more positively (Benight & Bandura, 2004).

Another significant theme in the findings was the survivors' reliance on faith and religious beliefs as coping mechanisms. The data showed that survivors viewed the disaster as a test or destiny of God, which they accepted as part of their spiritual journey. This spiritual outlook was corroborated by Pargament and Raiya (2007), who found that faith can provide a powerful framework for making sense of traumatic experiences. Religious coping often plays a crucial role in alleviating the burden of grief and fear, especially in communities in which religious beliefs are integral to cultural identity (Koenig et al., 2001).

Furthermore, the findings showed that trauma symptoms persist among survivors, particularly feelings of sadness and isolation, as they navigate their lives in the aftermath. Survivors frequently report feeling haunted by their memories, including flashbacks of tragic events, which resonates with trauma theory, suggesting that intense memories can resurface long after the initial trauma (American Psychological Association, 2013). Some survivors avoided discussing their experiences even with close family members, as they feared judgment or misinterpretation, indicating the need for trauma-informed care approaches in disaster recovery processes.

The progression of survivors' lives reflects their differing levels of resilience and adaptation. For some, the disaster served as a catalyst for personal growth and independence, as they now focus on goals, such as education and career advancement (Kyambade et al., 2024d). This echoes Masten's (2001) resilience theory, which argues that individuals can exhibit significant developmental strength in the face of adversity. However, the findings also reveal feelings of pessimism and confusion among those who struggle to find meaningful employment or education. Limited socioeconomic opportunities are a well-documented barrier to post-disaster recovery, where survivors face compounded challenges that make reintegration difficult (Peek & Fothergill, 2008).

Finally, the data highlight the critical role of community and family support. Survivors who felt supported by neighbors or extended families managed more emotionally than those who felt isolated. Family support was especially crucial for younger survivors, some of whom expressed gratitude for being raised by their extended relatives. This finding is consistent with studies that emphasize the importance of social support in trauma recovery, which can mitigate feelings of loneliness and hopelessness (Kaniasty & Norris, 2009). However, disparities in support received by survivors underscore the need for formal support systems to fill these gaps, as informal networks may not always be reliable or sufficient.

The results of this study highlight significant policy gaps in the response to disasters like the Kiteezi Landfill Disaster, particularly regarding the emotional and psychological needs of survivors. Despite the documented importance of social support and community networks, existing policies often overlook the necessity for structured mental health services and trauma-informed care tailored to the unique cultural

contexts of affected populations. This lack of attention to emotional and psychological recovery can exacerbate feelings of isolation and hopelessness among survivors, as seen in the ongoing trauma symptoms expressed in the findings. Furthermore, the reliance on informal support systems, which may not be consistently reliable, underscores the need for formalized support structures to ensure comprehensive care. The findings suggest that policies must prioritize the integration of mental health services, community engagement, and resilience-building programs into disaster recovery efforts, ensuring that survivors have access to the resources necessary for their holistic recovery and reintegration into society. By addressing these gaps, policymakers can better support the long-term healing and resilience of disaster-affected communities.

This study emphasizes the importance of a complex approach to disaster recovery that addresses survivors' emotional, spiritual, and social needs. Both community support and structured interventions are essential to help survivors not only survive, but also regain a sense of purpose and optimism for their future.

Conclusion

This study reveals that survivors of the Kiteezi Landfill Disaster face enduring psychological, emotional, and social challenges, underscoring the complexities of post-disaster recovery. Many survivors continue to struggle with trauma, marked by sadness, isolation, and recurring memories of tragedy. Their reliance on internalized coping mechanisms, including faith and family support, highlights the significance of culturally sensitive interventions that consider survivors' spiritual and social contexts. However, the findings also demonstrate that not all survivors have equal access to support systems, resulting in varied recovery experiences and disparities in resilience and adaptation. While some survivors have shown resilience by focusing on future goals and personal growth, others remain trapped by a lack of socioeconomic opportunities, which amplifies the importance of holistic support systems in post-disaster recovery. Community-based support, trauma-informed care, and accessible educational and employment opportunities are essential to facilitate comprehensive recovery. This approach will not only aid survivors in healing from their past but also empower them to rebuild their lives with renewed purpose and optimism. Future policies and interventions should prioritize both the immediate psychological needs of survivors and their long-term social integration, fostering resilience and enhancing the quality of life for disaster-affected communities.

While this study provides valuable insights into the experiences of child survivors of the Kiteezi landfill disaster, its findings are subject to certain limitations. The small sample size and use of convenience and snowball sampling may affect generalizability, and reliance on retrospective accounts raises the possibility of recall bias. Additionally, the study's focus on children's perspectives may overlook insights from other key stakeholders involved in the recovery process. Despite these limitations, the findings offer a critical foundation for further research and policy interventions aimed at supporting vulnerable children in similar contexts.

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No potential conflict of interest was reported by the author(s).

Ethics approval and consent to participate

Ethical review and approval were obtained from the Makerere University School Research Board for this study.

Informed consent

Informed consent was obtained from all the participants in writing.

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About the authors

Mahadih Kyambade: is a distinguished Academician and Lecturer in the Department of Leadership and Governance, at Makerere University Business School. Pursuing a PhD in Responsible Leadership, holds degrees of Master of Science in Leadership and Governance, Bachelor of Leadership and Governance and Bachelors of Laws of Makerere University. His research focuses on themes related to Leadership, Governance, Psychological Safety, Environmental Management, Climate Change, Gender Diversity, Higher Education and Policy. Email: mahadkyambade@gmail.com

Luke Sewante: is an Assistant Lecturer in the Department of Leadership and Governance, Faculty of Management at Makerere University Business School currently on a PhD programme of Makerere University focusing on Green governance. He earned his Master of science in Leadership and Governance from Makerere University (focusing on Diversity Management); Bachelor of Leadership and Governance from the same University; Practitioner in Leadership and Governance with anproven Professional and Ethical track record. His Research interests are in the areas of Leadership, Governance, Ethics, Workforce Diversity and Green Governance. His e-mail contact is lsewantee@mubs.ac.ug

Afulah Namatovu: is a renowned Academician in the field of Information Management. She's a Lecturer in the Department of Applied Computing & IT, Makerere University Business School. Holds a Bachelor's degree in Information and Information Management of Makerere University. Her research focuses on Office Management, IT, Leadership and Gender issues in Organizations. Email: anamatovu@mubs.ac.ug

ORCID

Mahadih Kyambade  <http://orcid.org/0009-0006-0257-9601>

Afulah Namatovu  <http://orcid.org/0009-0001-5799-3950>

Data availability statement

The data presented in this study are available upon request from the corresponding author.

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