Examining Age-Based Differences in the Traumatic Experiences of Long-Term Flood Victims in Nigeria

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ABSTRACT

This study explores the relationship between age and the severity of traumatic problems experienced by long-term flood victims in Nigeria using a statistical ANOVA (Analysis of Variance) approach. Data were collected from affected individuals across different age groups to assess variations in mental and emotional trauma. The findings reveal statistically significant age-based differences in trauma levels, with younger and older age groups exhibiting higher vulnerability to long-term emotional distress. These results underscore the need for age-sensitive mental health interventions in post-disaster recovery programmes in Nigeria. The study contributes to disaster management policy and programmes by highlighting the importance of demographic factors in trauma assessment and support planning to policymakers in the country. This study employed a one-way Analysis of Variance (ANOVA) to examine the statistical differences in traumatic problems experienced among six age groups (Below 19, 20–29, 30–39, 40–49, 50–59, and >60 years) of long-term flood victims in Maiduguri. Data was collected using structured questionnaires as a tool and administered to 369 flood survivors across three major flood-affected areas in Borno state. The ANOVA test revealed statistically significant differences in trauma scores among age groups (Sig = 0.000), less than (p = 0.005), indicating that some participants experienced significantly higher trauma levels compared to other participants. Age significantly influences the level of traumatic problems among flood victims in Nigeria. Younger adults, particularly those between 20 and 40, exhibited greater vulnerability, suggesting a need for age-targeted mental health intervention management for post-flood victims in the country.

Keywords: Age difference, Trauma experience, Flood victim, Intervention management, Nigeria

INTRODUCTION

Floods rank among the most common disasters in terms of their effects on people and the economy (Jonkman et al., 2024). Outside the immediate destruction of infrastructure and displacement of people, floods often have long-term emotional consequences, including stress, anxiety, depression, and post-traumatic stress disorder (PTSD) (Sönmez & Hocaoğlu, 2023). These mental health challenges can persist long after the physical environment has been restored, affecting survivors' quality of life, work productivity, and social relationships (Mao & Agyapong, 2021).

Flood disasters have become a recurring challenge in Nigeria, displacing thousands and causing long-term psychosocial distress (Onuoha et al., 2024). Flood disasters represent one of the most frequent and devastating natural hazards affecting communities in the country (Mfon et al., 2022). While the physical and economic consequences are often documented, the emotional impacts, particularly trauma, remain underexplored across different age groups. Following a flood, affected people may struggle with chronic illnesses, respiratory issues, and other conditions, which frequently affect some groups more than others (Flores et al., 2024). While numerous studies have explored the economic and physical health impacts of floods, relatively little research has been done to understand the psychological trauma among different demographic groups, especially in developing countries such as Nigeria (Sekoni et al., 2021).

However, age is a critical factor that influences how individuals perceive, process, and recover from traumatic experiences (Bryngeirsdottir & Halldorsdottir, 2022). Similarly, according to a study, societal resistance to the effects of floods and respondents' age have a statistically significant relationship, meaning that as respondents' ages rise, so does the evaluation of their level of flood resistance (Cvetković & Ivković, 2022). Furthermore, age is a potential moderator in trauma response due to varying resilience, life experience, and social support systems (Zalta et al., 2021). Moreover, young adults are more vulnerable due to responsibilities such as employment, family care, and social integration. Despite having the highest level of need, teenagers and young adults have the least access to prompt, high-quality specialised mental health care, according to a study by McGorry et al. (2022). Although older adults possess greater coping mechanisms developed through life experiences. This statement aligns with a scholarly statement that older people have more coping mechanisms due to their past life experiences; some older persons modified their coping mechanisms and improved their ability to deal with loneliness (Switsers et al., 2025). Likewise, the elderly also face higher physical vulnerabilities and social isolation, which could exacerbate emotional distress. According to a study, both loneliness and suicidal conduct are common among teenagers and the elderly, who are also more vulnerable to viewing life as stressful and intolerable (Panagiota & Vaitsa, 2021).

This study focuses on examining the age-related differences in trauma experiences among long-term flood victims in Maiduguri. By conducting a one-way Analysis of Variance (ANOVA), we aim to statistically determine whether trauma levels significantly vary across six different age categories comprising: below 19 years, 20–29, 30–39, 40–49, 50–59, and 60 years and above. Understanding these differences is essential for tailoring mental health intervention management that is age-fitting, targeted, and effective in disaster recovery planning.

METHOD

A cross-sectional, quantitative study design was employed. The focus was on analysing trauma levels using ANOVA across age categories. A total of 369 respondents were randomly selected from three areas severely affected by floods in Maiduguri. Respondents were classified into six age groups: below 109 years, 20–29, 30–39, 40–49, 50–59, and greater than 60 years post-flood respondents. An adapted validated questionnaire on PTSD symptoms was used as the standardised instrument for trauma symptoms, and demographic data of respondents, including age, were also collected. A one-way ANOVA was conducted to assess whether a statistically significant difference exists among long-term Maiduguri flood victims or whether it exists in mean trauma scores among the six age groups of the respondents or not.

RESULTS

Table 1. For instance, the descriptive mean score for all different age respondents to the variable “I am constantly feeling useless” shows that respondents below 19 years were (M = 5.28), with (SD = 0.818), the highest among all age groups, signifying that the level of trauma is significantly higher than other groups. Respondents aged 40-49 had the lowest mean score of (M = 4.49) with (SD = 1.076), indicating lower levels of trauma experienced by middle-aged adults. While young adults and those with 30-39 years and 50-59 years showed relatively higher average scores, meaning that they had relatively higher trauma experiences than the age group 40-49 years, which showed a low mean score with a high SD value, signifying a diverse response pattern within that age bracket of the respondents. However, respondents aged 60 years and above reported a mean score of (M = 4.84), with (SD = 0.834), signifying a moderate level of experienced emotional distress. Although their mean is lower than that of younger age groups, it is higher than the 40–49 age group, demonstrating that older adults still experience the trauma to a notable extent in the post-flood period. The finding of this result corresponds with a scholarly statement that PTSD and change disorder symptoms were more prevalent in older persons (Law et al., 2025).

However, the variable “I no longer appreciate what I used to do”. From the respondents’ responses of the different age group of Below 19 (M = 4.74, SD = 1.273), 20 to 29 (M = 4.68, SD = 1.063), 30 to 39 (M = 5.12, SD = 0.869), 40 to 49 (M = 4.51, SD = 1.230), 50 to 59 (M = 5.31, SD = 0.996), and >60 years (M = 4.32, SD = 0.478) shows the age groups of young adults 30-39 and middle adults 50-59 show high trauma differences compared to the other age groups. This result coincides with a study stating that variations in the severity of

injuries between younger and older people could affect the comparison of trauma outcomes (Shewiyo et al., 2025).

In contrast, the older adults 60 years and above and the young adults 20-29 exhibit high trauma experiences compared with the other age group as the result revealed from the respondents' responses to the variable “I feel cut off from everyone around me” Below 19 (M = 4.98, SD = 1.201), 20 to 29 (M = 5.15, SD = 0.714), 30 to 39 (M = 4.95, SD = 1.038), 40 to 49 (M = 4.05, SD = 1.069), 50 to 59 (M = 4.12, SD = 1.113), and >60 years (M = 5.16, SD = 0.834). This result indicates that older adults across the age groups had a high trauma level and is in line with research showing that older adults 65 and older face physical and emotional difficulties that can impact their readiness, coping skills, and ability to react and recover from a hazard occurrence (Bukvic et al., 2018).

However, respondents’ responses to the traumatic variables “My feelings are absolutely numbed” shows that young adults below 19-29 and middle adults 50-59 had a high rate of post-flood traumatic problems compared with the other age groups, as indicated by the results, below 19 (M = 5.38, SD = 1.078), 20 to 29 (M = 5.38, SD = 0.553), 30 to 39 (M = 4.96, SD = 0.979), 40 to 49 (M = 3.73, SD = 0.482), 50 to 59 (M = 5.13, SD = 0.945), and >60 years (M = 4.74, SD = 01.147). This finding is consistent with the statement that though PTSD can impact people of any age, teenagers appear to be more susceptible to psychological damage following a tragedy because they are not as socially and mentally equipped as adults to handle stress (Mathew et al., 2021).

Furthermore, the respondents responses to the variable “I snap at people without cause” Below 19 (M = 4.25, SD = 1.254), 20 to 29 (M = 5.21, SD = 0.753), 30 to 39 (M = 5.05, SD = 1.038), 40 to 49 (M = 4.21, SD = 1.109), 50 to 59 (M = 5.41, SD = 0.777), and >60 years (M = 5.21, SD = 0.855), the age bracket from 20-39, 50-59, and the older adults 60 years and above exhibited a high level of traumatic problems compared with the other age groups. This finding is consistent with a study revealing that flood effects are more stressful on elderly people and children; both categories of this age need more time than others to come back to everyday life (Mathew et al., 2023).

Moreover, young adults and middle-aged adult respondents from age 20-39, and middle-aged adults 50-59 had revealed a higher trauma problem long after floods than the other age groups as the analysis of the result showed “I have been making irresponsible judgments recently” Below 19 (M = 4.66, SD = 1.270), 20 to 29 (M = 5.14, SD = 0.984), 30 to 39 (M = 5.27, SD = 0.794), 40 to 49 (M = 4.11, SD = 0.764), 50 to 59 (M = 5.12, SD = 1.140), and >60 years (M = 4.21, SD = 0.855). Also, this group of responses shows the same responses as the immediately preceding responses. The result revealed that young people aged 20-39 and middle-aged people 50-59 had high trauma issues compared with the other age categories as shown in their responses to the variable “I am constantly on edge, expecting something horrible to happen” Below 19 (M= 4.21, SD = 1.246), 20 to 29 (M = 5.12, SD = 1.124), 30 to 39 (M = 5.05, SD = 0.820), 40 to 49 (M = 4.38, SD = 1.007), 50 to 59 (M = 5.34, SD = 0.725), and >60 years (M = 4.79, SD = 1.182). These results coincide with a researcher who reported that younger disaster victims and middle-aged adults were found to have higher levels of PTSD symptoms than older adults (Kongshøj & Berntsen, 2022).

Nevertheless, this category showed that respondents at the age of 60 and above had no or very little trauma experience compared to the middled-aged adults which exhibit high trauma level across the six age groups analised “I jump at the slightest noise” Below 19 (M = 4.49, SD = 0.993), 20 to 29 (M = 5.18, SD = 1.189), 30 to 39 (M = 4.56, SD = 1.043), 40 to 49 (M = 4.68, SD = 0.895), 50 to 59 (M = 5.01, SD = 1.058), and >60 years (M = 3.58, SD = 0.769). This result agrees with a statement reported that after floods, females and younger age groups were indicated to be more likely to express mental health problems, including expected PTSD symptoms, compared to males and older age groups (Mao et al., 2022).

In terms of a lack of concentration for an extended period because of the trauma issue, middle age adults 30-39, 50-59, and those greater than 60 years that is the older adults had higher traumatic problems that the three other age categories as shown from their responses “I have difficulty concentrating for lengthy periods” Below 19 (M = 4.42, SD = 1.278), 20 to 29 (M = 4.95, SD = 1.158), 30 to 39 (M = 5.35, SD = 0.647), 40 to 49 (M = 4.37, SD = 1.261), 50 to 59 (M = 5.37, SD = 0.486), and >60 years (M = 5.05, SD = 1.129). This result is also consistent with research that mentioned PTSD, anxiety, and depression are also prevalent among young adults

and older people; however, sleep issues seem to be less prevalent among the most stressed older people (Friis et al., 2023).

The responses of respondents reported that they could not sleep well at night, showing the middle-aged 30-39, 50-59, and above 60 years with the highest sleeping issue compared to the other age groups as indicated "I have difficulty sleeping well at night" Below 19 (M = 4.40, SD = 1.291), 20 to 29 (M = 4.76, SD = 1.232), 30 to 39 (M = 5.15, SD = 0.881), 40 to 49 (M = 4.44, SD = 1.215), 50 to 59 (M = 5.15, SD = 0.697), and >60 years (M = 5.74, SD = 0.452). This result is consistent with research that reports a variety of characteristics, including gender, age stages, religion, health, sickness, location, socioeconomic situation, and ethnicity, that affect the experiences of older people (Popescu, 2023).

Generally, this study revealed that high SD values mean that responses of the Maiduguri flood victims vary a lot, whereas low SD values mean responses of the respondents are consistent. Both the variations and the consistency can be found between groups and within groups across the measured variables as identified.

Table 1. Descriptive analysis on trauma experiences based on age among Maiduguri flood victims

Descriptive		**N**	**Mean**	**Std. Deviation**
I am constantly feeling useless	Below 19	53	5.28	.818
	20 to 29	91	4.91	.950
	30 to 39	75	5.12	.464
	40 to 49	63	4.49	1.076
	50 to 59	68	5.09	1.156
	>60 years	19	4.84	.834
	Total	369	4.96	.945

Table 2. A one-way Analysis of Variance (ANOVA) was conducted to examine age-related differences in traumatic symptom problems among long-term flood victims. The analysis included six different age groups: Below 19 years, 20–29, 30–39, 40–49, 50–59, and greater than 60 years. The results showed that for all ten tested variables representing different traumatic symptom extents, the ANOVA generated a statistically significant difference in the result (Sig = 0.000) for each variable. Indicating that the p-values are less than (p = 0.005). This indicates that there are significant differences in the mean traumatic symptom scores among the various age groups responses of the respondents of Maiduguri flood victims includes "I am constantly feeling useless", "I no longer appreciate what I used to do", "I feel cut off from everyone around me", "My feelings are absolutely numbed", "I snap at people without cause", "I have been making irresponsible judgments recently", "I am constantly on edge, expecting something horrible to happen", "I jump at the slightest noise", "I have difficulty concentrating for lengthy periods". "I have difficulty sleeping well at night", which was tested across the six age groups of below 19 years, 20-29, 30-39, 40-49, 50-59, and greater than 60 years, Maiduguri flood respondents.

DISCUSSION

The statistically significant differences in trauma symptoms across age groups underscore the complexity of post-flood psychological recovery in Nigeria. While the ANOVA results confirm age as a significant determinant of trauma severity, a more critical comparison with both local and global literature highlights nuanced socio-cultural and developmental interpretations. In the Nigerian context, young adults (20–39 years), who displayed elevated trauma levels, often bear the socioeconomic burden of family responsibilities and job insecurity. This aligns with existing literature, such as Kunnuji et al. (2024)found that economic stress amplifies trauma symptoms among younger Nigerians following disasters. Globally, studies from post-Katrina

and Southeast Asian flood zones similarly reported that young adults experience heightened distress due to disrupted life plans and limited access to mental health services (McKinzie & Clay-Warner, 2021; Miller et al., 2025).

Moreover, the consistent significance difference across all ten variables tested was consistent with many previous studies, such as a study revealed that, like other disasters, the prevalence of Post-Traumatic Stress disorder (PTSD) following floods is significant among all age categories, with children, teenagers, and healthcare professionals being the most impacted (Golitaleb et al., 2022). This suggests that age plays a critical role in the expression of trauma-related symptoms among long-term Maiduguri flood victims. The variation in traumatic symptoms among the age groups implies that certain age brackets may be more vulnerable and resilient to the long-term emotional impacts of flood disasters. These findings align with prior research that shows age can influence trauma perception, coping strategies, and emotional resilience, indicating that older adults may experience compounded distress due to age-related vulnerabilities such as poor health or social isolation (Song et al., 2025).

In contrast, older adults (>60 years), though often perceived as resilient due to life experience, demonstrated moderate to high trauma levels, particularly related to emotional numbness and sleep disturbances. This dual vulnerability, psychological and physiological, is consistent with global ageing literature, which shows that social isolation, mobility challenges, and weakened coping systems exacerbate trauma in elderly populations (Muamba, 2024). Interestingly, middle-aged adults (40–49 years) consistently reported lower trauma scores, which can be attributed to their accumulated life experiences and greater emotional stability, a trend also observed in Japanese post-tsunami studies (Yu-Han, 2024). However, caution must be applied, as socio-cultural expectations suppress trauma reporting in this age group, especially among men, due to stigma around mental health.

Equally, due to deteriorating health and financial constraints, the elderly may be more susceptible to injury, death, and physical and emotional loss during disasters (Keser et al., 2024). Similarly, according to a study, older persons in catastrophe situations have few social capital and fewer networks than the younger ones (Breen et al., 2024). Moreover, the elderly are disproportionately impacted by obstacles accessing health care services, such as limited mobility, hearing or vision impairment, or reliance on family members or caregivers or a stigma (van Boetzelaer et al., 2025). Additionally, those who were elderly and intellectually challenged were most vulnerable, and one person complained about not receiving assistance for their condition (Jodie Bailie et al., 2020). In contrast, a study reported that respondents in both the Rational Emotive Behaviour Therapy and control groups were similarly distributed across age ranges, with no significant age differences observed (Ede et al., 2022).

Although younger groups might struggle with economic or developmental disruptions. According to a study, many extreme events show that younger people are more likely to survive catastrophic disasters because they are more physically fit, which makes them less likely to engage in preventive behaviours or take steps to strengthen their resilience (Cvetković & Ivković, 2022). However, young adults from 18–30 years and older individuals from 60 years and above, apprehend generational differences in the experiences and perceptions (Ullah et al., 2025).

Given that the Sig-value was < .005 across all variables, the evidence strongly supports the rejection of the null hypothesis that there is no statistically significant difference in traumatic symptom severity across different age groups of Maiduguri flood victims and supports the alternative hypothesis that there is a statistically significant age difference in trauma experiences among Maiduguri flood victims. This suggests the need for age-specific emotional and mental health intervention management in post-disaster trauma recovery programmes in Nigeria. Further, it is critical that older adults have appropriate coping mechanisms to lessen the emotional toll that stressful events take on them and to adjust to them for better emotional well-being (Bondarchuk et al., 2023).

Similarly, more attention must be paid to the consequences for practice and policy. The study proposes that policymakers in Nigeria include age-based targeted intervention management in disaster management policy, particularly for younger persons, and recognises the necessity of age-targeted mental health intervention

management. Flood-affected populations' anxiety and behavioural symptoms will be addressed by incorporating Trauma-Focused Cognitive Behavioural Therapy (TF-CBT) into community clinics and educational institutions. On the other hand, caregiver support networks and mobile outreach initiatives will help older people maintain good sleep hygiene and lessen feelings of loneliness. As a result, age-segmented trauma screening needs to be a routine component of Nigeria's post-disaster response by NGOs and local governments. Such initiatives will be more effective and attract more international support if they are in line with international frameworks like the WHO's Mental Health Gap Action Programme (mhGAP).

Table 2. Analysis of Variance on trauma experiences based on age among Maiduguri flood victims

ANOVA		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
I am constantly feeling useless	Between Groups	22.828	5	4.566	5.421	.000
	Within Groups	305.714	363	.842		
	Total	328.542	368			
I no longer appreciate what I used to do	Between Groups	35.849	5	7.170	6.405	.000
	Within Groups	406.346	363	1.119		
	Total	442.195	368			
I feel cut off from everyone around me	Between Groups	81.334	5	16.267	16.087	.000
	Within Groups	367.056	363	1.011		
	Total	448.390	368			
My feelings are absolutely numbed	Between Groups	123.662	5	24.732	34.964	.000
	Within Groups	256.777	363	.707		
	Total	380.439	368			
I snap at people without cause	Between Groups	83.103	5	16.621	17.612	.000
	Within Groups	342.577	363	.944		
	Total	425.680	368			
I have been making irresponsible judgments recently	Between Groups	69.621	5	13.924	14.273	.000
	Within Groups	354.135	363	.976		
	Total	423.756	368			
I am constantly on edge, expecting something horrible to happen	Between Groups	61.604	5	12.321	12.173	.000
	Within Groups	367.410	363	1.012		
	Total	429.014	368			
I jump at the slightest noise	Between Groups	53.869	5	10.774	9.922	.000
	Within Groups	394.180	363	1.086		
	Total	448.049	368			
I have difficulty concentrating for lengthy periods	Between Groups	60.500	5	12.100	11.746	.000
	Within Groups	373.939	363	1.030		
	Total	434.439	368			
I have difficulty sleeping well at night	Between Groups	49.581	5	9.916	8.811	.000
	Within Groups	408.516	363	1.125		
	Total	458.098	368			

CONCLUSION

In conclusion, the study contributes significantly to understanding age-related trauma responses among flood victims in Nigeria. However, policy-oriented intervention management tailored to the diverse needs of different age groups of flood-affected communities in Nigeria is recommended. Future Research should be more in-depth qualitative studies that will help explore why certain age groups experience higher trauma symptoms than others, and community planning for post-flood recovery programmes should incorporate age-sensitive approaches to mental rehabilitation of flood-affected individuals in Nigeria.

Ethical Considerations

This study was conducted in accordance with the ethical standards of the University Tun Hussein Onn Malaysia Ethics Committees. Ethical approval was obtained from the University Tun Hussein Onn Malaysia, Ethics Committee, and approval was obtained. Informed consent was obtained from all individual participants included in the study.

Conflict Of Interest

The study has no potential conflicts of interest.

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