



Relationship between Resilience and Gender on Post Traumatic Stress Disorder (Ptd) among Flood Victims in Awe Local Government Area, Nasarawa State, Nigeria

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Abstract

Original Research Article

Flooding has become one of the most devastating natural disasters in Nigeria, often resulting in severe psychological consequences among affected populations. This study investigated the relationship between resilience and gender on posttraumatic stress disorder (PTSD) among flood victims in Awe Local Government Area of Nasarawa State, Nigeria. A cross-sectional survey design was adopted, involving 379 flood victims randomly selected from eight flood-affected communities. Data were collected using the 14-item Resilience Scale (RS-14) and the Harvard Trauma Questionnaire (HTQ), both of which demonstrated satisfactory reliability. Pearson Product Moment Correlation and independent samples t-test were employed to test the hypotheses at the 0.05 level of significance. The findings revealed a significant moderate negative relationship between resilience and PTSD ($r = -.463$, $p < .05$), indicating that higher resilience was associated with lower levels of posttraumatic stress symptoms among flood victims. However, although male participants reported slightly higher mean PTSD scores than females, the observed gender difference was not statistically significant, $t(378) = 0.842$, $p > .05$. The study concludes that resilience serves as a significant protective factor against PTSD among flood survivors, whereas gender does not significantly influence PTSD in the study population. It is recommended that resilience-building interventions and psychological first aid be integrated into disaster management programmes to enhance the psychological recovery of flood victims in disaster-prone communities.

Keywords: Flood victims, Resilience, Gender, Posttraumatic Stress Disorder, PTSD, Nasarawa State, Nigeria.

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Introduction

Climate change has emerged as one of the greatest global challenges of the twenty-first century, contributing to the increasing frequency and severity of natural disasters across the world. Rising global temperatures, irregular rainfall patterns, and extreme weather events have

significantly increased the occurrence of floods, particularly in developing countries where infrastructure and disaster preparedness remain inadequate (Sharpe & Davison, 2022). Across the globe, societies continue to grapple with both natural and human-induced disasters, but flooding has become one of the most widespread



and destructive environmental hazards. In sub-Saharan Africa, where livelihoods depend largely on agriculture and climate-sensitive economic activities, the consequences of flooding extend beyond physical destruction to include profound social, economic, and psychological impacts.

Flooding has become the most common seasonal natural disaster in many countries, including Nigeria, causing enormous destruction to lives, property, agricultural land, and infrastructure (Odufuwa, Adedeji, Oladesu, & Bongwa, 2012). Global statistics indicate that natural disasters affected approximately 106 million people in 2012 alone, with floods accounting for the largest proportion of affected populations (Ferris, Petz, & Stark, 2013). Furthermore, between 2010 and 2022, an estimated 949 million people experienced flooding worldwide, the majority of whom resided in countries with medium levels of human development (International Federation of Red Cross Societies [IFRC], 2010).

In Nigeria, severe flooding has become increasingly associated with climate change and environmental degradation. The devastating floods experienced in 2022, for instance, were attributed to unusually heavy rainfall linked to climate change as well as the release of excess water from the Lagdo Dam in Cameroon, illustrating how transboundary environmental events can intensify local disasters (Leadership, 2022). Although much attention has traditionally focused on the economic losses, destruction of infrastructure, and fatalities associated with flooding, increasing scholarly interest has shifted towards understanding its long-term psychological consequences.

Beyond the immediate devastation caused by flooding, survivors often experience enduring psychological difficulties that persist long after the physical effects of the disaster have subsided. The destruction of homes, displacement from communities, loss of livelihoods, death of loved ones, and disruption of social support systems expose survivors to severe emotional distress and mental health problems. Among the most common psychological consequences are depression, anxiety disorders, substance misuse,

and particularly Posttraumatic Stress Disorder (PTSD), which has emerged as one of the most debilitating mental health conditions associated with disaster exposure (American Psychiatric Association, 2013; Neria et al., 2008). PTSD develops following exposure to actual or threatened death, serious injury, or other traumatic events and is characterised by persistent intrusive memories, flashbacks, avoidance of trauma-related reminders, emotional numbing, negative alterations in cognition and mood, and heightened physiological arousal that persist for more than one month after the traumatic experience (American Psychiatric Association, 2013).

Earlier classifications also recognised PTSD as an anxiety disorder within the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1980), while the International Classification of Diseases (ICD-10) classified it as a stress-related and somatoform disorder (World Health Organization, 1992). PTSD may arise following exposure to various traumatic events such as war, violent assault, kidnapping, torture, terrorist attacks, severe road traffic accidents, or witnessing injury and death, including traumatic experiences encountered during flooding disasters (Javidi & Yadollahie, 2012).

Research demonstrates that PTSD constitutes one of the most significant mental health outcomes among flood survivors worldwide. Meta-analytic evidence indicates an overall PTSD prevalence of approximately 29.48% among flood victims, although prevalence rates vary considerably across geographical regions, ranging from 9.2% in China to 52% in Indonesia and 70.93% among flood-affected populations in India (Golitaleb et al., 2022). The burden appears even greater in sub-Saharan Africa, where mental health services remain underdeveloped and disaster response efforts often focus primarily on physical survival. A systematic review of internally displaced populations in Africa reported PTSD prevalence rates ranging from 12% in Central Sudan to 86% in Nigeria, with the majority of studies reporting prevalence above 50% (Joint Data Center, 2023).

These findings underscore the substantial

psychological burden experienced by disaster-affected populations across the continent. In Nigeria, the 2022 floods displaced more than 361,000 residents across eight local government areas of Nasarawa State, including Awe, Doma, and Lafia, creating conditions that substantially increased the risk of widespread psychological trauma. Despite this enormous humanitarian crisis, mental health interventions remained largely absent from emergency response efforts, leaving many survivors without adequate psychosocial support (Punch, 2022).

Although exposure to flooding constitutes a significant risk factor for PTSD, not all survivors develop chronic psychological disorders, suggesting that certain protective factors buffer individuals against the adverse effects of traumatic experiences. Among these protective factors, resilience has received considerable attention within contemporary trauma research. Resilience refers to the ability to adapt successfully to adversity, recover from stressful experiences, and maintain or regain psychological wellbeing despite exposure to significant hardship (Connor & Davidson, 2003).

Various scholars have conceptualised resilience from slightly different perspectives while emphasising its protective function. Clay, Knibbs, and Joseph (2009) described resilience as the capacity to continue functioning normally despite adversity, whereas Scales, Benson, Leffert, and Blyth (2000) defined it as the ability to overcome negative experiences and return rapidly to pre-trauma levels of functioning. Similarly, Tipson (2013) argued that humanity's longstanding ability to cope with natural disasters reflects the enduring capacity referred to as resilience. Bonanno (2008) further defined resilience as the ability of psychologically healthy adults to maintain stable emotional and physical functioning despite exposure to highly disruptive or life-threatening events. Other scholars view resilience as maintaining equilibrium under unfavourable circumstances (Hornby, 2000; Shalev & Errera, 2008), successfully adapting to stressful conditions while preserving psychological wellbeing, and demonstrating positive qualities such as creativity, humour, initiative, independence, and

insight in the face of adversity.

Interestingly, Clay et al. (2009) suggested that highly resilient individuals may recover from trauma with relatively little emotional distress and consequently may experience less posttraumatic growth, a proposition also discussed by Levine, Laufer, Stein, Hamama-Raz, and Solomon (2009). Collectively, these perspectives indicate that resilience functions as an important psychological resource capable of reducing vulnerability to PTSD following disaster exposure.

In addition to resilience, gender has consistently emerged as a significant demographic factor influencing vulnerability to PTSD among disaster survivors. A growing body of empirical evidence indicates that women are considerably more likely than men to develop PTSD following exposure to natural disasters. Recent meta-analytic findings revealed that women are approximately 85% more likely to meet diagnostic criteria for PTSD after natural hazards, with odds ratios of 1.85 during the first year following disasters and 1.83 beyond the first year, suggesting that this increased vulnerability persists over time rather than representing only an immediate stress reaction (Nolting et al., 2025). Several interacting mechanisms have been proposed to explain this gender disparity. Women often experience greater exposure to disaster-related stressors because of their traditional caregiving responsibilities, dependence on household resources, and greater involvement in informal economic activities, making property destruction and displacement particularly devastating to their livelihoods (Bradshaw, 2004). Within the Nigerian context, entrenched patriarchal social structures further increase women's vulnerability through limited access to disaster relief resources, reduced participation in community recovery decision-making, and heightened exposure to gender-based violence within displacement camps (AICHR, 2018).

Additionally, evidence from the 2011 Great East Japan Earthquake and Tsunami demonstrated that deterioration in women's social support networks accounted for approximately 21% of the observed gender difference in posttraumatic

stress symptoms, highlighting the importance of disrupted social relationships in explaining women's heightened psychological vulnerability following disasters (Sasaki et al., 2021). These findings underscore the need to consider both resilience and gender when examining PTSD among flood survivors, particularly within disaster-prone settings where psychosocial interventions remain limited.

Statement of the Problem

The absence of baseline mental health data for flood-affected communities in Nasarawa State, including Awe Local Government Area, further complicates efforts to assess the true scope of psychological impact and to design evidence-based interventions. Existing research from other African contexts provides concerning indicators: a study of flood survivors in Ghana found that females and younger participants were significantly more vulnerable to psychological distress when exposed to flooding, with loss of economic assets, disruption to household businesses, and damage to personal properties serving as key predictors of distress (Abass et al., 2022). Similarly, research following the 2022 Durban floods in South Africa found that 38.2% of low-income women exhibited above-clinical levels of PTSD symptoms post-flood, representing a 19.1% increase from pre-flood rates, with women affected by poverty, food insecurity, and prior trauma history at greatest risk for adverse mental health outcomes (Nothling et al., 2024). These findings underscore the urgent need for context-specific research in Nigerian flood-affected communities to inform targeted mental health responses.

Given the substantial evidence documenting elevated PTSD risk among flood victims, the protective potential of resilience, and the consistent finding of gender-based disparities in post-disaster mental health outcomes, this study aims to investigate the influence of resilience and gender on PTSD among flood victims in Awe Local Government Area of Nasarawa State, Nigeria.

Objectives of the Study

This study will therefore achieve the following objectives

- i. To investigate the relationship between resilience and posttraumatic stress disorder among flood victims in Awe Local Government Nasarawa State
- ii. To determine the Gender differences on Posttraumatic stress disorder among flood victims in Awe Local Government Nasarawa State.

Conceptual Framework

Resilience

The United Nations office for Disaster Risk Reduction has defined resilience as “the ability of a system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structure and functions” (UNISDR, 2009). According to the European Commission resilience is “the ability of an individual, household, community, country or region to withstand, adapt and to quickly recover from stresses and shocks” Furthermore, (EC ECHO, 2016). Resilience is the process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands.

The concept applies to resilience, social ecological system resilience and disaster resilience ecological, which is the response of ecological systems to shocks, response of social shocks, and response of sociological systems to structures/relationships to disasters or natural hazards respectively. There are however usually overlaps in the perspectives of these concepts (Brown & Williams, 2015). Ecological resilience focuses on continuous functioning of a system even with disturbances (Adger, 2000). Socio resilience is the ability of systems to adapt to ecological constant changes (Davoudi 2012).

There are at least six principles of resilient systems. First is the homeostasis principle, which holds that the system is maintained through feedbacks between its components (Walker and Salt, 2006). These feedbacks signal changes, drive responses, and enable learning. Resilience is enhanced when feedbacks are transmitted effectively. The second principle is the omnivory principle, which holds that external shocks are mitigated by the diversification of resources and the diversification of the means by which resources are delivered (Barnet, 2001). Thus, the more diverse the resources and the more diverse the means of delivery, the less likely it is that the supply of vital items will falter. In this way, a crisis of supply in one place does not trigger a crisis in other overly-dependent places. The third principle is the high flux principle, which holds that the faster the rate of movement of resources through the system, the more resources will be available at any given time to help cope with perturbation, and hence, the more resilient the system (Barnet, 2001 citation).

The fourth principle is the flatness principle, which refers to the number of hierarchical levels relative to the base in an organization, and holds that the greater the number of participants higher in the system (i.e., the top-heavier), the less resilient a system (WRI, 2008; Barnet, 2001). Overly hierarchical systems are less flexible and hence less able to cope with surprise and adjust behavior. The fifth principle is the buffering principle, which refers to the surplus or slackness in the system, and holds that a system which has a capacity in excess of its needs can draw on this capacity in times of need, and so is more resilient (Barnet, 2001). Finally there is the redundancy principle, which holds that a degree of overlapping function and redundancy in a system permits the system to change by allowing vital functions to continue while formerly redundant elements take on new functions (WRI, 2008). Redundancy also allows for interchangeability when one part fails to perform.

From the perspective of the study of natural disasters, a number of strategies enable systems to both absorb and recover from sudden changes, and to learn from and adapt to changed

conditions. In addition to designing slackness, redundancy, and speed of supply into social systems (i.e., the buffering, redundancy, and high flux principles, respectively) and decentralizing decision making (i.e., the flatness principle), other strategies which enhance resilience to disasters include: mobility, including ability to relocate temporarily or permanently; diversification of supply of food, fiber and income (i.e., the omnivory principle); mobilizing social networks and systems of redistribution (i.e., the whole insures the parts); alleviation of absolute poverty; learning from past events and changing practices; transmission of knowledge across space and time; experimentation and innovation; and sustainable intensification of resource use (Barnett, 2001).

Posttraumatic Stress Disorder

Barlow and Durand (2002) defined posttraumatic stress disorder as an anxiety problem that occurs after a person experiences a life-threatening event that makes him or her feel extremely frightened and vulnerable. Such events include war, crime, rape, abuse, accidents, natural disasters like flood and earthquakes, and other potentially deadly and dangerous circumstances. However, the traumatic event doesn't have to happen to the person directly for PTSD to develop. A person might develop the disorder after witnessing someone else in a life-threatening situation, or even after hearing about someone else tragedy. According to them, posttraumatic Stress Disorder was called different names as early as the American civil war, when combat veterans were referred to as suffering from "soldier's heart". In World War I symptoms that were generally consistent with this syndrome were referred to as "combat fatigue". Soldiers who developed such symptoms in World War II were said to be suffering from "gross stress reaction," and disorder many troops in Vietnam who had called PTSD were assessed as having "Post-Vietnam syndrome". Posttraumatic stress disorder has also been called "battle fatigue" and "shell shock".

In line with APA (2013), defined posttraumatic stress disorder as a psychiatric condition that occurs after witnessing or experiencing an event that is traumatic to which one responds with intense fear, apprehension or horror. Similarly, the latest version of diagnostic and statistical manual of mental disorders. APA describes PTSD as a “trauma stress –related” disorder resulting from exposure or witnessing of a potentially traumatic event such as actual or threatened death, exposure to accidents, natural disasters, combat events, etc., with symptom clusters of re-experiencing, avoidance, hyperarousal, negative alteration in cognition and mood. This definition clearly suggests that having experience of war trauma could increase PTSD vulnerability. This raises a serious concern on our military organization and its personnel considering the level of combat exposure they have had in recent times. The recent engagement of the Nigerian armed forces with the Boko Haram insurgents have produced residual combat stress that could result in PTSD. Many of these personnel were exposed to potentially traumatic combat experiences such as watching the death of their colleagues, exposure to high improvised explosives, harsh weather, hostile incoming fire, mass burial of colleagues among others. This coupled with frequent stay and long duration of deployment could add significantly to the psychological distress symptoms suffered by Nigerian armed forces. For instance, in previous studies among the population, Abel, Dagona and Omoruri, (2018) identified posttraumatic stress disorder as one of the major psychological wounds of war that have inflicted military personnel who participated in Operation Lafia Dole in North East Nigeria

Empirical Review

Empirical evidence related to the constructs under study in Nigeria were discussed in this study under the following headings: Gender and Posttraumatic Stress Disorder, Resilience and Posttraumatic Stress Disorder and Distress disclosure and Posttraumatic Stress Disorder

Gender and Posttraumatic Stress Disorder

Gender refers to the social attributes and opportunities associated with being male and female, the relationships between women and men and girls and boys, and the relations between women and between men. These attributes, opportunities and relationships are socially constructed and learned through the socialization processes.

Day (2013) conducted a study to examine the relationship between posttraumatic stress disorder -related symptoms and the resilience factors of adaptability, daily activities, functional communication, leadership, and social skills among diverse adolescents exposed to trauma. A studied resilience and trauma in maltreated youth using 55 youths aged 12-17 years from Department of Family Services (DFS) related sites in the Las Vegas area referred for a psychological evaluation within 60 days following removal from the primary caregiver. Participants included adolescents in DFS custody who were in a foster home or with a family member. Youths who had been exposed to physical abuse, sexual abuse, or neglect, or reported witnessing a traumatic event happen to another person.

The instruments used in the study include the Children’s posttraumatic stress disorder Inventory (CPTSD-I), Behaviour Assessment System for Children – 2 Parent Rating Scales (BASC-2 PRS), and Resiliency Scale for Children and Adolescents (RSCA). Multiple regression was used to analyse the relationship between specific posttraumatic stress disorder symptoms, ethnicity, BASC-2 PRS and RSCA Resiliency Subscales. It was found that social skills resilience factors did not significantly relate to any specific symptom of posttraumatic stress disorder. Leadership skills, however, predicted arousal. This supports the 38 findings of Heller, Larrieu, D’Imperio and Boris (1999) that social skills relate closely to the development of resilience in children. Specifically, social skills increase the possibility for positive friendship experiences and social support networks, which increases psychological wellbeing (Demir, Jaafar, Bilyk&Ariff, 2012). Since resilience could be regarded as a

psychological capital, increased friendship experiences may in turn reduce the risk for disorders such as posttraumatic stress disorder.

Suarez, (2013) also examined the relationship between resilience, post-traumatic responses, exposure to violence during the conflict and current life stress on 151 Quechua women participants in the aftermath of political violence in Peru (1980-2000). Purposive and convenience sampling strategies were used for recruitment in Ayacucho, the area most exposed to violence. The study instruments were translated to Quechua and Spanish and cross-culturally validated. Data was analyzed using hierarchical regression analysis. A locally informed trauma questionnaire of local idioms of distress was also included in the analysis. Sixty percent of women ($n = 91$) were recruited from Ayacucho city and the rest from three rural villages; the mean age was 45 years old. Despite high levels of exposure to violence, only 9.3% of the sample presented a level of symptoms that indicated possible PTSD. Resilience did not contribute to the overall variance of post-traumatic stress related symptoms, which was predicted by past exposure to violence, current life stress, age, and schooling ($R^2 = .421$). Resilience contributed instead to the variance of avoidance symptoms ($\beta = -.198$, $t = -2.595$, $p = 0.01$) while not for re-experiencing or arousal symptoms.

Theoretical Framework

Resilience Model

Kumpfer's Resilience Model emphasises that resilience is not simply an individual trait but a dynamic process resulting from continuous interaction between individuals and their environments. According to Kumpfer (1999), resilience refers to the capacity, process, and outcome of successfully adapting to adversity, maintaining competence despite significant risks, and recovering effectively from traumatic experiences. The model integrates both process and outcome perspectives and identifies six interrelated constructs that explain resilient adaptation. The first construct, stressors or challenges, consists of adverse events that disrupt an individual's normal functioning and

activate the resilience process. However, the impact of these stressors depends largely on the individual's cognitive appraisal and perception of the situation (Kumpfer, 1999).

The second construct, the external environmental context, includes protective and risk factors within the family, school, peer group, community, and culture that either facilitate or hinder resilience. Third, person-environment interaction describes the reciprocal relationship through which individuals actively interpret and respond to environmental demands while seeking supportive resources. The fourth construct, internal self-characteristics, comprises cognitive, emotional, behavioural, social, physical, and spiritual strengths that enhance effective coping. The fifth construct, resilience processes, refers to adaptive coping strategies developed through repeated exposure to life challenges, enabling resilient reintegration following adversity (Richardson, Neiger, Jensen, & Kumpfer, 1990).

Finally, positive outcomes represent successful adaptation and achievement of developmental tasks, which subsequently strengthen the individual's ability to cope with future stressors. Overall, Kumpfer's model provides a comprehensive ecological framework by demonstrating that resilience emerges through the interaction of environmental resources, personal strengths, adaptive coping processes, and positive developmental outcomes, making it highly relevant for understanding resilience among individuals experiencing significant adversity such as flood victims (Kumpfer, 1999).

Cognitive model of Posttraumatic Stress Disorder develops by Ehlers and Clark's(2000)

The Cognitive Model of Posttraumatic Stress Disorder (PTSD) developed by Ehlers and Clark (2000) proposes that persistent posttraumatic stress arises because individuals continue to perceive a sense of current threat even though the traumatic event has already passed. This ongoing threat results primarily from two interacting processes: negative appraisals of the trauma and the way the traumatic memory is encoded and

stored. According to the model, individuals develop maladaptive interpretations of the traumatic event, their emotional reactions, and its consequences, leading to beliefs such as being permanently damaged, vulnerable, or responsible for the trauma (Ehlers & Clark, 2000).

These negative appraisals often extend beyond the event itself and promote maladaptive coping strategies, including avoidance, rumination, selective attention to danger, and misinterpretation of everyday situations. Such responses maintain PTSD symptoms and intensify anxiety, depression, emotional numbing, and feelings of permanent personal change (Ehlers & Clark, 2000; Elwood, Mott, Williams, Lohr, & Schroeder, 2009). Ehlers and Clark also introduced the concept of mental defeat, which describes a psychological state in which individuals perceive themselves as powerless and unable to influence the outcome of traumatic events.

This perception increases beliefs of helplessness, vulnerability, and personal inadequacy, particularly among those with previous experiences of trauma or helplessness. Furthermore, the model suggests that traumatic memories are poorly elaborated, inadequately integrated into autobiographical memory, and lack proper temporal and contextual organisation. Consequently, memories are easily triggered by trauma-related cues, producing intrusive recollections and re-experiencing symptoms. The authors further distinguished between data-driven processing, which focuses on sensory experiences during trauma, and conceptual processing, which emphasises meaning and contextual understanding. Greater reliance on data-driven processing reduces proper memory integration and increases vulnerability to persistent PTSD symptoms (Ehlers & Clark, 2000).

Research Methodology

This study adopted a survey design. A survey design is one among the survey research methods that involves using different groups of people who differ in the variable of interest but share

other characteristics, such as socioeconomic status, educational background and ethnicity.

The target population will be persons affected by Flood in three communities of Awe Local Government Area. NASEMA'S statistics estimated the total of 1,457 (NASEMA 2022).

The sample size for this study was determined using Raosoft Sample Size Calculator (online platform) using the vitams figure of 116,080 with 5% margin of error, 95 % confidence level and response distribution of 50%. 377 flood victims were selected for the study.

Three hundred and seventy nine (379) Participants were recruited through random sampling technique, in which forty five (45) victims from each affected community were randomly selected from the population of the victims of the seven (7) communities affected with the inclusion of one major affected community (LayinTunga) where sixty four (64) victims of the flood were also selected from the registered of NASEMA of the affected communities which brought the total participants to three hundred and seventy nine (379).

Data collection was relying on two standardized self-report instruments to ensure reliable and validated measurement. The Resilience Scale (RS-14), developed by Wagnild and Young (1993), is a 14-item self-report measure designed to assess an individual's capacity to adapt positively in the face of adversity. Responses are rated on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating greater resilience. The instrument has demonstrated excellent psychometric properties, with Cronbach's alpha coefficients ranging from .91 to .93, strong convergent validity with the original 25-item Resilience Scale ($r = .97$), and satisfactory discriminant validity with measures of depression, anxiety, life satisfaction, and health status (Wagnild & Young, 1993).

Nigerian validation studies also reported good internal consistency, with Cronbach's alpha values of .81 (Abiola & Udofia, 2011) and .83 (Ifeagwazi, Chukwuorji, & Zacchaeus, 2014). In the pilot study involving 79 flood victims from Ochuche Community, Ogbaru Local

Government Area of Anambra State, and the instrument yielded a Cronbach's alpha of .84, confirming its reliability. Furthermore, factor analysis supported a predominantly unidimensional structure, and the questionnaire was translated into the Igbo language using the forward-backward translation procedure to enhance participants' comprehension.

The Harvard Trauma Questionnaire (HTQ), developed by Mollica et al. (1992), assesses exposure to traumatic events and symptoms of posttraumatic stress disorder (PTSD). Part I contains 17 items rated on a five-point scale ranging from 1 (never) to 5 (always) and measures the intensity of traumatic experiences. The HTQ has demonstrated high reliability, with inter-rater reliability coefficients of .93 for Part I and .98 for Part II, while internal consistency coefficients range from .90 to .96 (Mollica et al., 1992). Nigerian validation studies also reported satisfactory reliability for the intrusion, avoidance, arousal, and total PTSD scales (Elklit & Brink, 2004).

In the present pilot study, the HTQ produced a Cronbach's alpha of .71. Although factor analysis revealed a three-factor structure that differed from the original model, the researcher adopted the recommended practice of computing the total PTSD score, as previous studies have reported inconsistencies in the HTQ's factor structure across different populations (Rasmussen, Smith, & Keller, 2007). Higher

total scores indicate a greater likelihood of meeting the diagnostic criteria for PTSD (Mollica, McDonald, Massagli, & Silove, 2004).

The researcher obtained a letter of introduction from the Department of Psychology Nasarawa State University, Keffi to obtain permission from appropriate village authorities to conduct the research and present it to 379 Victims of 2022 Flood in Awe LGA. Thereafter, informed consent has been obtained from the victims, following that which questionnaire was administered.

Results

The data for this study was analyzed using frequencies and percentages to test the demographic characteristics of the participants. Inferential statistics were further used to test the formulated hypotheses.

Hypothesis one

Hypothesis one stated that resilience will significantly have a relationship with post-traumatic stress disorder (PTSD) among flood victims in Awe Local Government Area (LGA) of Nasarawa State. The hypothesis was tested using Pearson Product Moment Correlation (PPMC).

Table 4.1: Relationship between resilience and PTSD among flood victims.

Resilience & PTSD	R	Df	Sig	p
Resilience	-.463*	378	.013	<.05

Dependent Variable: PTSD; Sig @ < .05

The table presents the results of the Pearson Product Moment Correlation (PPMC) analysis conducted to examine the relationship between resilience and posttraumatic stress disorder (PTSD) among flood victims in Awe Local

Government Area of Nasarawa State. The findings revealed a moderate negative and statistically significant relationship between resilience and PTSD ($r = -.463$, $df = 378$, $p = .013$, $p < .05$). The negative correlation indicates

that as the level of resilience increases, the level of posttraumatic stress disorder decreases among the flood victims. Conversely, individuals with lower resilience are more likely to experience higher levels of PTSD symptoms. Since the probability value ($p = .013$) is less than the 0.05 level of significance, the relationship is statistically significant. Therefore, the hypothesis stating that resilience would significantly relate to posttraumatic stress disorder among flood victims in Awe Local Government Area was accepted. The finding suggests that resilience serves as a protective

psychological factor against the development of PTSD, implying that interventions aimed at strengthening resilience may contribute to reducing posttraumatic stress symptoms among individuals affected by flooding.

Hypothesis Two

The second hypothesis stated that gender will differ in PTSD among flood victims in Awe LGA of Nasarawa State. The hypothesis was tested using t-test for independent samples.

Summary of Independent Sample T-test of gender in PTSD among flood victims

Gender & PTSD	N	M	SD	Df	t	Sig	p
Male	168	2.24	5.02	378	.842	.102	> .05
Female	211	1.79	3.20				

Dependent variable: PTSD; Sig @ .05

The table presents the results of the independent samples t-test conducted to examine whether gender differences exist in posttraumatic stress disorder (PTSD) among flood victims in Awe Local Government Area of Nasarawa State. A total of 379 participants were included in the analysis, comprising 168 males and 211 females. The results show that male participants recorded a slightly higher mean PTSD score ($M = 2.24$, $SD = 5.02$) than female participants ($M = 1.79$, $SD = 3.20$). However, the independent samples t-test revealed that this observed difference was not statistically significant, $t(378) = 0.842$, $p = .102$, which is greater than the conventional significance level of .05 ($p > .05$). This finding indicates that there was no significant difference in PTSD symptoms between male and female flood victims in the study area. Therefore, the alternative hypothesis stated was not confirmed, implying that gender did not significantly influence the level of posttraumatic stress disorder experienced by flood victims in Awe Local Government Area of Nasarawa State.

Although males exhibited a marginally higher mean PTSD score than females, the difference was too small to be considered statistically meaningful and may have occurred by chance.

Discussion of findings

The present study examined the relationship between resilience and gender on post-traumatic stress disorder among flood victims in Awe LGA of Nasarawa State. The characteristics are explained thus: Gender (Male; $N = 168$, 44.33%; Female; $N = 211$, 55.67%).

Hypothesis one stated that resilience will significantly have a relationship with post-traumatic stress disorder (PTSD) among flood victims in Awe Local Government Area (LGA) of Nasarawa State. The hypothesis was tested using Pearson Product Moment Correlation (PPMC). The Results showed that resilience significantly predicted posttraumatic stress disorder. Thus, the first hypothesis which was stated that resilience will significantly predict

posttraumatic stress disorder among flood victims was supported. This finding supported the finding of previous studies (e.g., Masten & Tellegen, 2012; Suarez, 2013), that people who showed more resilience had more adaptive capacity when faced with traumatic events. Connor, Davidson and Lee (2003) had previously found that resilience was associated with more positive outcomes in terms of current physical and mental health status and fewer posttraumatic stress disorder symptoms. The results suggest that although the relationship between trauma and psychological distress is complex, resilience is strongly associated with positive outcomes in the aftermath of traumatic experiences. Highly resilient individuals are more likely to come

The result of the hypothesis 2 indicated the relationship between gender differences in PTSD. The findings revealed that women are reported to be diagnosed with PTSD twice than men after the flood in Awe local Government of Nasarawa state.

The findings of this study revealed that there was no statistically significant gender difference in posttraumatic stress disorder (PTSD) among flood victims in Awe Local Government Area of Nasarawa State, although male participants recorded a slightly higher mean PTSD score than their female counterparts. This suggests that exposure to flooding may affect both males and females in relatively similar ways, and that gender alone may not be a sufficient determinant of PTSD among flood victims within the study context. The absence of a significant gender difference may be attributed to the fact that both men and women experienced comparable levels of disaster exposure, displacement, and loss of livelihood, thereby increasing their vulnerability to psychological distress irrespective of gender.

These findings also show that the prevalence of PTSD in males is slightly higher and this has contradicted the work of Arch (1993), Zinkhan & Karande (1990). Bern, sen & Rusin 2007 Badri, Crutzen & Vanden Borne (2013). (Haskell, et al.2010, (Kokras & Dack, 2014) Horris et al. 2012, Taylor, et al. 2018. Also, the above studies further contradicted the findings which revealed that females expressed more

help-seeking behaviour and experience more fear than men.

However, the finding contradicts several previous studies that reported significantly higher PTSD prevalence among females following traumatic events. For instance, Tolin and Foa (2006) concluded from a meta-analysis that women are more likely than men to develop PTSD following exposure to trauma. Similarly, Nöthling et al. (2024) found significantly higher levels of PTSD symptoms among low-income women affected by the 2022 Durban floods.

Conclusion

Result showed that resilience significantly predicted posttraumatic stress disorder. There is Gender differences between Male and female on Posttraumatic stress disorder among flood victims in Awe Local Government Nasarawa State. However strict monitoring and information from the government agency concerning occurrence of traumatic event is needed to prepare the minds of the masses and recognition of the symptoms and treatment of posttraumatic stress disorder should be affected if need be.

Recommendations

Based on the research findings presented the following recommendations have been forwarded to the government and development partners especially who want to see the sustainable growth of any societies in Nigeria.

The government should decentralize the disaster fund in which will be closer to people. This is due to the fact that, the state governments provide day care to people instead of the farther federal government. Also, this will enable to shift of the branch of the NASAEMA to the hands of local authority. Shifting from disaster management to risk management approach. This will help to avoid spending a lot of money to relieve the affected societies and then later on the victims suffer for long time to regain. This has shown that, disaster

management in Nigeria focuses on relief aids. Therefore, the risk management will help to provide early warning by taking the predictable measures.

Clinical Psychologist should be incorporated in disaster management team to give Psychological First Aids and train victims on resilience skills for proper adjustment.

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