

# Intensity of Event, Resilience and Education as Factors in Posttraumatic Stress Symptomatology among Flood Victims

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**Abstract:-** This study was aimed at assessing intensity of event, resilience and education in posttraumatic stress disorder among flood victims. The objective of this research was to find out whether intensity of event, resilience, and education would significantly predict posttraumatic stress disorder among flood victims. Participants were 721 adults (men = 329, women = 292) aged 18 to 85 years who were drawn from communities in Ogbaru local government Area of Anambra State. Cross-sectional design was used for the study and hierarchical linear regression was used for data analysis. The Harvard trauma questionnaire and Resilience scale (RS-14) were used for data collection. The Result indicated that Physical intensity of event significantly predicted PTSD ( $\beta = 0.33, t = 9.59, p < .001$ ). Emotional intensity of event was not a significant predictor of PTSD ( $\beta = 0.07, t = 1.45$ ). Resilience significantly predicted PTSD ( $\beta = -0.14, t = -3.72, p < .001$ ). Educational level was also a significant negative predictor of PTSD. Exposure to traumatic event affects every individual both male and female irrespective of their educational status or socioeconomic background. Therefore the government should make sure that they monitor and inform the masses whenever there is danger of traumatic event so as to get them prepared to face the event when it occurs.

**Keywords:-** Posttraumatic Stress disorder, Intensity of Event, Resilience, Education.

## I. INTRODUCTION

Flood disaster is practically an annual event with its consequences on the affected individuals and country. Flood affects economy, ecosystem and human lives ((Pareh & Balamurugan, 2021). Estimates have shown that for the past 10years, flooding affected approximately 949 million people worldwide (Joseph & Edobor, 2022). The truth remains that majority of the countries affected by flood annually mostly tackle the physical needs of the affected individuals like housing, neglecting the psychological consequences of the after effect of the disaster. Actually, such natural disaster may have huge impact on the mental wellbeing of the victims and therefore, exploration of psychological effects on survivors is

important (Asim, Sathian, van Teijlingen, Mekkodathil, Babu, Rajesh, Kumar, Simkhada, & Banerjee, 2022). The 2012 flood disaster in Nigeria was the largest of its type, which destroyed a lot of assets both in the urban and rural areas and about 106 million people where affected (Federal Government of Nigeria (FGN) 2013; Raimi, Vivien, Odipe, & Owobi, 2018 in Gesto, & Haruna, 2021). Experiencing traumatic event like flooding is the most salient predictor of posttraumatic stress symptoms among humans. Posttraumatic stress disorder (PTSD) is a persistently severe mental disorder which is caused by individual's exposure to some unusual threatening or catastrophic stressful events (Guo, Yang, Li, Jiang, Guo, Liu, Huang, & Pan, 2019). Since its formal introduction into the DSM-III in 1980, posttraumatic stress disorder has been the most common psychiatric disorder to arise after persistence stress reactions (Bryant, 2019). The development of posttraumatic stress disorder in individuals is linked to a large number of factors. These include exposure to life threatening events such as a severe threat or a physical injury, a near-death experience, combat-related trauma, sexual assault, interpersonal conflicts, child abuse, or after a medical illness (Bryant, 2019; Mann & Marwaha, 2022). According to the Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM-5), the symptoms of PTSD include persistently re-experiencing the traumatic event, intrusive thoughts, nightmares, flashbacks, dissociation (detachment from oneself or reality), and intense negative emotional (sadness, guilt) and physiological reaction on being exposed to the traumatic reminder. Furthermore, problems with sleep and concentration, irritability, increased reactivity, increased startle response, hypervigilance, avoidance of traumatic triggers also occur (American Psychiatric Association (APA), 2013). There is also significant impairment in social, occupational, and other areas of functioning (Lok, Frijiling, & Zuiden, 2018).

Intensity of event may be a factor in determining posttraumatic symptoms among flood victims.

Van Der Kolk (1987) was of the view that the probability of the development of posttraumatic stress disorder increases with the intensity of the stressful event. Intensity of traumatic event means the greatness, the magnitude or the extremeness of

the traumatic event. Strelau and Zawadzki (2005) found that intensity of the traumatic event is the best predictor of the severity of posttraumatic stress disorder symptoms. The DSM-5 (American Psychiatric Association, 2013) specified that posttraumatic stress disorder's qualifying event must provoke intense fear, horror or helplessness. Research has also shown that higher impact trauma is more likely to precipitate a distressing response. Sauter and Franklin (1998) had earlier stated that the rate of prevalence of PTSD depends on the type or the degree of the traumatic event.

Another variable of interest in this research work is resilience. Resilience is the ability to cope with changes and challenges and to "bounce back" during difficult times (Bisji, Yakubu, Ogbale, James, Panmun, Ayele, Micheal, Afolabi, & Alhassan, 2021). Research (e.g. Day, 2015) has shown that the relationship between resilience and PTSD symptomatology with respect to trauma type remains unknown and as such, resilience remains an important area of inquiry among victims of trauma (Day, 2015).

Education may help to create awareness on the dangers and warning signs of flooding and also help affected persons to know the measures to take against flooding. It may act as element in mitigating against flood risks and also reduce vulnerability (Hoffman & Blecha, 2020; Tatebe & Mutch, 2015). Education is the process of facilitating the learning of knowledge, skills/competencies, values, beliefs and habits (Hoffman & Blecha, 2020). People are constantly learning in different environments. Education can take place in formalized institutions, as well as in non-formal or informal settings. Formal education or learning refers to classroom-based education normally delivered in a systematic way by trained teachers in a structured environment, such as a school, college or university (Hoffman & Blecha, 2020). This form of education is intentional and has specific pre-defined learning outcomes, which are transparently communicated to the learners. Generally, the better and more educated persons in the society normally seem to be wealthier, healthier and have longer life span than the less educated (Lutz & Samir, 2011). They seem to have a better life, live in places that are more developed than the less educated; they also seem to be more protected both psychologically and socially from the after effect of flood or other form of natural disaster. They seem to be more socially supported. They seem to enjoy life insurance and other avenues than the less educated (Frankenberg, Sikoki, Sumantri, Suriastini, & Thomas, 2013).

In a sample of 247 adolescents, Guangzhe, Xu, Liu, and Yuavuan, (2018) investigated the way in which resilience is related to posttraumatic stress disorder and more posttraumatic growth in Chinese adolescents after a tornado by considering the role of perceived social support. They found out that perceived social support partially mediated the relationship between resilience, PTSD severity and posttraumatic growth. In another study, Zavala, Waters, Arslan, Simpson, Nuñez del

Padro, and Gargurevich (2022) investigated role of posttraumatic stress symptoms, strength-based parenting and event exposure on posttraumatic growth in Peruvian flood survivors using 1077 adults. Their result indicated that flood survivors experienced both posttraumatic symptoms and posttraumatic growth. They found that event exposure facilitated posttraumatic growth; strength-based parenting influenced posttraumatic growth both directly and by its role in reducing posttraumatic stress symptoms. Again, they also found that higher level of strength-based parenting aided individuals in converting posttraumatic stress symptoms into posttraumatic growth. Maigari, Lubuola, Duwap, Moses, Tungchama, Davou, Armiya'u, and Gyang, (2021) assessed the prevalence of posttraumatic stress disorder among internally displaced youth exposed to Boko Haram terrorism in North-Eastern Nigeria and also assessed the socio-demographic factors associated with PTSD in this population. They used consecutive sampling technique to select eligible subjects undergoing a Citizenship and leadership training at Citizenship and Leadership training institute Jos, Plateau State. Their results showed that educational status ( $p=0.002$ ), marital status ( $p=0.001$ ) and income before displacement ( $p=0.010$ ) were the significant factors associated with PTSD.

Although there have been previous studies on flood disaster and its effect on mental health, there are still controversies on the contributions of the study variables. The present research therefore intends to clear those doubts and contribute to the existing literature and to our understanding of the relationship of intensity of event, resilience and education in posttraumatic stress disorder among flood victims.

Thus, the research questions are:

- Would intensity of event significantly predict PTSD among flood victims?
- Would resilience significantly predict PTSD among flood victims?
- Would education significantly predict PTSD among flood victims?

Therefore the purpose of this study is to:

- Investigate the relationship between intensity of event and PTSD among flood victims
- Determine if resilience is related to PTSD among flood victims
- investigate education in relation to PTSD among flood victims

#### ➤ *Research Hypotheses*

1. Intensity of event would significantly predict PTSD among flood victims
2. Resilience would significantly predict PTSD among flood victims
3. Education would significantly predict PTSD among flood victims

## II. METHODS

### ➤ *Participants*

Participants for this study were 721 adults drawn from three randomly selected communities in Ogbaru Local Government Area of Anambra State. The ages of the participants ranged from 18 to 85 years, with a mean age of 35.65 years (SD = 14.81 years). They consisted of 329 males and 392 females. By educational level, 2.4% had no formal education, 11.1% completed primary school, 54.6% completed secondary school and 31.9% had higher education in tertiary institutions. Various occupational groups were represented as follows: farmers (13.2%), civil servants (19.7%), artisans (27.9%), students (30.8%) while 8.5% did not indicate their occupation. Forty-nine per cent (49%) were married, 50.3% were single and 0.7% were widows/widowers. 51.0% of the participants had no child, 25.9% had 1-4 children while 23.0% had more than 4 children. All participants were of Igbo ethnic group.

### ➤ *Inclusion Criteria*

Only persons who were 18 years of age and above, both literates and illiterates were selected for participation in the study. The DSM-IV-TR (American Psychiatric Association, 2000) stated the younger children find it hard to report symptoms of PTSD except by reports from observers like parents, teachers and other caregivers

### ➤ *Exclusion Criteria*

Persons below the age of 18 were excluded from the study

### ➤ *Instruments*

The instruments used to collect data for the study include: Harvard Trauma Questionnaire (HTQ) and Resilience Scale (RS-14).

The Harvard Trauma Questionnaire (Mollica, Mollica, Caspi-Yavin, Bollini, Truong, Tor, & Lavelle, et al., 1992), measures the intensity of traumatic events (part I) and the symptoms of posttraumatic stress disorder (part II) as described in the DSM-IV. Part I of HTQ consists of 17 items, which are scored on a 5-point response format of 1 (never), 2 (rarely), 3 (sometimes), 4 (often) and 5 (always). Examples of the traumatic events presented in the HTQ part I include: lack of shelter, serious injury, forced isolation/separation from others, unnatural death of family member/friend, etc. Inter-rater reliability was found to be .93 while internal consistency reliability (Cronbach's alpha) was .90 (Mollica, et al., 1992). The average individual item-total correlation was .56 with a range of .30 to .70 (Mollica, et al., 1992). In the present study, a pilot study was conducted using 79 flood victims in Ochuiche community in Ogbaru L.G.A. of Anambra state. Most of the items of the instrument had item total correlations of .30 and above, except items 7 (Brain washing), 13 (Unnatural death of family or friend), 14 (Murder of stranger or strangers) and 16 (Torture). These four items with very low total correlation were dropped from the final scale for the study. An internal

consistency reliability estimate (Cronbach's alpha) of .71 was obtained for the remaining 13 items.

Part II consists of 16 items. The items are scored on a 4-point Likert scale of 1 (not at all), 2 (a little) 3 (quite a bit) and 4 (extremely). It measures the three core symptom groups (intrusion, avoidance, and arousal) of posttraumatic stress disorder. The subscales are scored separately. Only scale items greater than or equal to 3 were counted toward a posttraumatic stress disorder diagnosis. A subclinical posttraumatic stress disorder diagnosis was warranted if either the avoidance or arousal criteria were missed by one symptom. The original Mollica, et al.'s (1992) study found good reliability and validity for the scale. HTQ has a good internal consistency, test-retest reliability, and concurrent validity (Mollica, et al., 1992). Inter-rater reliability for Part II was found to be .98 with internal consistency reliability (Cronbach's alpha) of .96. The average inter-item correlation was .65 with a range of .36 to .80. Alpha values on the 3 subscales were acceptable as well: .82 (Intrusion), .86 (Avoidance) and .86 (Arousal) (Mollica, et al., 1992). The alpha values for three scales reported by Elklit and Brink (2004) for the three scales of Part II were .84 (intrusion), .82 (avoidance), and .85 (arousal) and .95 (posttraumatic stress disorder total). In the present study, a pilot study was conducted using 79 flood victims in Ochuiche community in Ogbaru L.G.A. of Anambra State. An internal consistency reliability (Cronbach's alpha) of .71 was obtained.

The researchers also obtained the three-factor structure on the HTQ but the items that loaded on the factors were not exactly the same items that loaded on the three-factor-structure extracted by Mollica, et al. (1992). This seems to confirm the observation that there are inconsistencies in the factor structure of HTQ (Rasmussen, Smith, & Keller, 2007) and trauma researchers have used the total score of the HTQ (e.g., Oruca, Kapetanovic, Pojskic, Miley, Forstbauer, Mollica & Henderson, 2008). The present researcher adopted the approach of computing the total score as the posttraumatic stress disorder score. The DSM-IV-TR posttraumatic stress disorder score is calculated from the 16 items. The higher the scores on the DSM-IV-TR posttraumatic stress disorder items, the more likely it is that the respondent will have a posttraumatic stress disorder diagnosis (Mollica, McDonald, Massagli, & Silove, 2004).

The 14-item version of Resilience Scale (RS-14) was developed by Wagnild and Young (1993). The items of the RS-14 are scored on a 7-point response format ranging from 1 (strongly disagree) to 7 (strongly agree). Cronbach's  $\alpha$  reliability coefficients ranging from .91 to .93 across several studies was reported by Wagnild and Young (1993). The concurrent administration of RS-14 and some other measures by the developers revealed significant discriminant validity coefficients with life satisfaction ( $r = .37$ ) morale ( $r = .31$ ) depression ( $r = -.41$ ), self-reported health status ( $r = -.30$ ) and an adequate convergent validity with the 25-item Resilience

Scale ( $r = .97$ ) (Wagnild & Young, 1987). It has also shown moderate divergent and convergent validity coefficients ranging from .29 to 0.63 when correlated with the domains of health promoting lifestyle (Wagnild & Young, 1993).

In a study aimed at validating RS-14 in Nigeria, Abiola and Udofia (2011) reported a Cronbach’s  $\alpha$  coefficient of .81, a convergent validity of .97 with RS-25 as well as discriminant validity coefficients of -.28 with Depression subscale of Hospital Anxiety Depression Scale, HADS and -.26 with Anxiety subscale of HADS. Another study in Nigeria, Ifeagwazi, (Chukwuorji & Zacchaeus, 2014), obtained a Cronbach’s  $\alpha$  of .83 and a Spearman-Brown split-half reliability coefficient of .80. In the present study, a pilot study was conducted using 79 flood victims in Ochucho community in Ogbaru L.G.A. of Anambra State. An internal consistency reliability estimate (Cronbach’s alpha) of .84 was obtained. In terms of validity, the RS-14 seems to be made up of only one factor. The data could not fit into any multiple factors pattern with good fit when subjected to maximum likelihood factor analysis with Promax rotation. Reliability analysis shows that only four (29%) items had low item-total correlation (lower than .30).

The instruments for the study were translated into Igbo language for better understanding of the participants. The instruments were translated in the faculty of Linguistic in the University of Nigeria, Nsukka using forward and backward method of translation.

➤ *Procedure*

The researchers obtained letter of introduction from the department of psychology, University of Nigeria Nsukka. They visited the leaders of each community to formally introduce themselves. The study was a community based survey of posttraumatic stress disorder among flood victims in randomly selected communities in Ogbaru LGA of Anambra State. The researchers selected 3 towns from the LGA and selected 5 villages from each town through table of random numbers and 60 house-holds from each of the selected villages using systematic sampling. The selected communities were Atani, Akili-Ogidi and Akili-Ozizor. The researchers sought the permission of the traditional rulers in each of the towns and village chairman of each of the selected villages before distributing the questionnaire to the villagers. Each willing adult in the 900 house-holds was given a set of the study questionnaires for completion. Ten (10) trained research assistants helped in the distribution of the questionnaires. Those adults who could not read were assisted in completing the questionnaires. The research assistants and the researchers read out the questionnaires in Igbo language for those who could not read and marked their responses. The researchers distributed and collected the questionnaires on the spot to ensure high rate of return. 800 copies of the research questionnaire were distributed and all were returned. 721 were completed, and analyzed.

➤ *Design and statistics*

Cross-sectional design was used for the study and hierarchical multiple linear regression was used for data analysis.

**III. RESULTS**

**Table 1: Inter-correlations of posttraumatic stress disorder (PTSD), resilience and intensity of event**

| Variables                    | 1   | 2      | 3     | 4     | 5   |
|------------------------------|-----|--------|-------|-------|-----|
| Age                          |     |        |       |       |     |
| Resilience                   |     |        | .11*  |       |     |
| Physical intensity of event  |     | .06    | .07   |       |     |
| Emotional intensity of event |     | .06    | -.01  | .64** |     |
| PTSD                         | .06 | -.14** | .33** | .26** | .00 |

\*\* $p < .001$ ; \* $p < .01$

Table 1 shows that age was positively related to resilience ( $r = .11, p < .01$ ) but there was no significant relationship between age and any of the other variables. Resilience was not significantly related to physical intensity of event and emotional intensity of event but there was a negatively significant relationship between resilience and PTSD ( $r = -.14, p < .001$ ). Physical intensity of event had a positively significant association with emotional intensity of event ( $r = .64, p < .001$ ). Emotional intensity of event was significantly positively related to PTSD ( $r = .26, p < .001$ ).

**Table 2: Regression results of resilience, intensity of event and Education on self-report of PTSD**

| Step | Variable(s) | B    | B    | t     | R    | R <sup>2</sup> | AR <sup>2</sup> | R <sup>2</sup> Δ |
|------|-------------|------|------|-------|------|----------------|-----------------|------------------|
| 1    |             |      |      |       | 0.11 | 0.01           | 0.01            | 0.01             |
|      | Gender      | 0.76 | 0.07 | 1.76  |      |                |                 |                  |
|      | Age         | 0.05 | 0.13 | 2.14* |      |                |                 |                  |



|   |                              |       |       |         |      |      |      |      |
|---|------------------------------|-------|-------|---------|------|------|------|------|
|   | Marital status               | 2.02  | 0.18  | 1.06    |      |      |      |      |
|   | One to 4 children            | 0.86  | 0.07  | 0.45    |      |      |      |      |
|   | More than 4 children         | 1.10  | 0.08  | 0.54    |      |      |      |      |
| 2 |                              |       |       |         | 0.13 | 0.02 | 0.01 | 0.01 |
|   | Farmers                      | -0.77 | -0.5  | -0.93   |      |      |      |      |
|   | Artisans                     | -0.42 | -0.3  | -0.59   |      |      |      |      |
|   | Civil servants               | -1.23 | -0.07 | -1.73   |      |      |      |      |
|   | No employment                | -0.83 | -0.04 | -0.98   |      |      |      |      |
| 3 |                              |       |       |         | 0.20 | 0.04 | 0.02 | 0.02 |
|   | No formal education          | 4.92  | 0.13  | 3.18*   |      |      |      |      |
|   | Primary education            | 0.97  | 0.05  | 1.31    |      |      |      |      |
|   | Tertiary education           | -1.04 | -0.07 | -1.66   |      |      |      |      |
| 4 | Resilience                   | -0.06 | -0.14 | -3.72** | 0.24 | 0.06 | 0.04 | 0.02 |
| 5 | Physical intensity of event  | 0.33  | 0.33  | 9.59**  | 0.41 | 0.17 | 0.15 | 0.11 |
| 6 | Emotional intensity of event | 0.09  | 0.07  | 1.45    | 0.41 | 0.17 | 0.15 | 0.00 |

\*\*p < .01; \*p < .05. AR<sup>2</sup> = Adjusted R<sup>2</sup>; R<sup>2</sup>Δ = R<sup>2</sup> Change.

In the first step of the hierarchical linear regression analysis, a group of control variables (gender, age, marital status, one to four children and more than four children) were added in the regression model. Age was found to be a significant predictor of PTSD ( $\beta = 0.13, t = 2.14, p < 0.05$ ). All the variables in the model contributed 1% to the variance in PTSD ( $R = .11, R^2\Delta = 0.01$ ). The occupational groups which were included in the second step of the regression analysis as control variables also explained 1% of the variance in PTSD ( $R^2 = .13, R^2\Delta = 0.01$ ). Student was used as default in evaluating the variance of PTSD among the different occupation groups.

In the 3<sup>rd</sup> step of the regression analysis, Educational status explained 2% of the variance in PTSD ( $R = 0.20, R^2\Delta = 0.02$ ). Participants with secondary school education were used as default in evaluating the variance of PTSD among different educational levels.

In the 4<sup>th</sup> step of the regression analysis, it was found that resilience significantly predicted PTSD ( $\beta = -0.14, t = -3.72, p < .001$ ). It also contributed 2% to the explanation of the variance in PTSD ( $R = 0.24, R^2\Delta = 0.02$ ).

Physical intensity of event which was the predictor in step 5, significantly predicted PTSD ( $\beta = 0.33, t = 9.59, p < .001$ ). About 11% of the variance in PTSD was explained on account of physical intensity of the traumatic event. Emotional intensity of event was not a significant predictor of PTSD, in the 6<sup>th</sup> step of the regression ( $\beta = 0.07, t = 1.45, NS$ ). Significance in the relationship between emotional intensity of event and physical intensity of event (see Table 1), could cause one of them not to be significantly associated with PTSD in the result, not because the second variable is not actually significantly associated with PTSD but because the first variable being moderately correlated with the second variable would have explained a significant portion the variance of the second variable if it was entered first in the regression model.

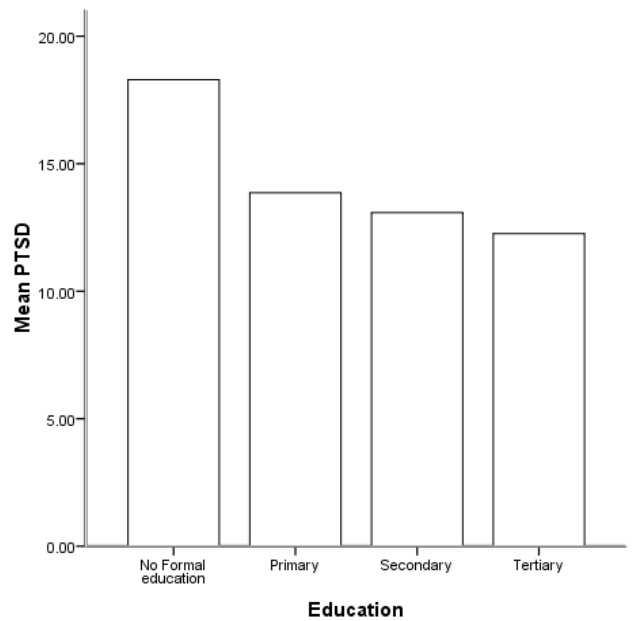


Fig 1: Mean PTSD of participants with different levels of education.

Those with no formal education reported the highest PTSD ( $M = 18.29, SD = 6.75$ ) followed by those with primary education ( $M = 13.86, SD = 5.93$ ) and those with secondary school education ( $M = 13.08, SD = 5.72$ ). The lowest mean PTSD was reported by those with tertiary education ( $M = 12.26, SD = 5.19$ ), thus the higher the education the lower PTSD.

#### IV. SUMMARY OF RESULTS

The Results of this study showed that Physical intensity of event significantly predicted PTSD ( $\beta = 0.33$ ,  $t = 9.59$ ,  $p < .001$ ). About 11% of the variance in PTSD was explained on account of physical intensity of the traumatic event.

Emotional intensity of event was not a significant predictor of PTSD ( $\beta = 0.07$ ,  $t = 1.45$ ).

Resilience significantly predicted PTSD ( $\beta = -0.14$ ,  $t = -3.72$ ,  $p < .001$ ). It also contributed 2% to the explanation of the variance in PTSD ( $R = 0.24$ ,  $R^2\Delta = 0.02$ ).

Educational level was a significant predictor of PTSD.

#### V. DISCUSSIONS

The findings of this study showed that physical intensity of event significantly predicted posttraumatic stress disorder symptoms. Thus the first hypothesis which stated that intensity of event would significantly predict posttraumatic stress disorder was supported. This supports the findings of previous researchers on intensity of exposure to traumatic events and posttraumatic stress disorder. Previous research found that PTSD was predicted by severe traumatic events and other factors. For example, Sabin, Lopez Cardozo, Nackeru and Varese (2003) reported that lack of food, witnessing a massacre, being wounded, and experiencing other traumatic events like witnessing the disappearance of family members, being close to death were associated with symptoms of posttraumatic stress disorder. Other studies (Pérez-Olmos, Fernández-Piñeres, & Rodado-Fuentes, 2005; Norris, Murphy, Baker, & Perilla, 2004) had reported some vulnerability factors whose intensity may predispose victims of disasters to posttraumatic stress disorder.

Result also showed that resilience significantly predicted posttraumatic stress disorder. Thus the second hypothesis which stated that resilience would significantly predict posttraumatic stress disorder among flood victims was supported. This finding is consistent with previous studies demonstrating the positive nature of resilience in traumatized individuals (Masten & Tellegen, 2012; Suarez, 2013), that people who showed more resilience had more adaptive capacity when faced with traumatic events. Day (2015) also found that individuals reporting average resilience displayed fewer PTSD symptoms than youth reporting below average resilience. 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. Individuals who exhibit high resilient are more likely to come out of traumatic events remaining strong (Day, 2015). Bogopolskaya, (2019) stated that individuals with higher levels of resilience are less likely to be feel “shattered” by traumatic event.

Educational level was also found in this study to significantly predict posttraumatic stress symptoms. This finding is in consonance with the finding Maigari et al. (2018) that low levels of education and income, which are components of low socioeconomic status, were significantly associated with PTSD. Asim et al. (2022) also found an association between selected PTSD symptoms and various demographic factors, such as age, gender, marital status and education levels. In the present study, the lowest mean posttraumatic stress disorder was reported by those with tertiary education while the highest is reported by those with no formal education. This shows that the higher the education the lower posttraumatic stress disorder. Othman, Dahlan, Borhani, and Rusdi (2016) also had similar finding. Frankenberg et al. (2013) found that increase in education was associated with less suffering after the traumatic event. They also found that protective effects of education are likely a reflection of greater accumulated financial resources and possibly social resources available to the better educated in times of need. It is also possible that those who have invested more in education make better choices in times of adversity.

#### VI. LIMITATIONS OF THE STUDY

The findings of this study should be carefully interpreted. Caution should be applied in the interpretation because the study has its limitations. One of the limitations of this study is sample size. The present study is based only on data gathered in 3 towns in Ogbaru local government area of Anambra state, Nigeria. The result therefore must be taken with caution and consideration when comparing to other countries or other ethnic groups in Nigeria putting cultural differences into account. Again the socioeconomic status of the participants was not included in the research which may significantly influence a person's adaptation during traumatic experience.

#### VII. SUMMARY AND CONCLUSION

The present study investigated intensity of event, resilience and education in posttraumatic stress symptomatology among flood victims. Seven hundred and twenty one persons, comprising 329 males and 392 females participated in the study. Result showed that physical intensity of event significantly predicted posttraumatic stress disorder while emotional intensity of event was not a significant predictor of PTSD symptoms. It was also found that resilience significantly predicted PTSD symptoms. Education significantly predicted PTSD symptoms.

##### ➤ *Data availability Statement*

The data that support the findings of this study are available from the corresponding author (G. C. E.) upon reasonable request

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