



From Floods to Trauma: Examining the Link Between Individual Traits and PTSD in Kalibaru, Banyuwangi

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ABSTRACT

The flood disaster has an impact on the community, namely damaged buildings, loss of life, and psychological impacts such as fear, anxiety, sadness, and despair. The purpose of this study was to determine the relationship between individual characteristics and Post Traumatic Stress Disorder (PTSD) in victims of flash floods in Krajan and Tegal Pakis Hamlets, Kalibaru District, Banyuwangi. This study was conducted using a cross-sectional research design with respondents, namely victims of flash floods in Krajan and Tegal Pakis Hamlets, Kalibaru District, Banyuwangi, with a sample of 181 using a purposive sampling technique. This study showed that most respondents were in the adult age category, with a percentage of 47.5% of the total respondents. Most respondents were female, with a percentage of 62.4%; most had a high school education, and most were homemakers. The most marital status was married, and most respondents experienced trauma due to losses experienced due to the disaster. Based on the analysis conducted using Spearman, a relationship was found between individual characteristics and the level of PTSD in respondents on the variables of age and gender. However, other variables such as education, occupation, marital status, and injuries experienced did not have a significant relationship with PTSD in respondents.

Keywords: Floods, Trauma: Examining, Post Traumatic Stress Disorder, PTSD

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I. INTRODUCTION

Flood disasters frequently occur in Indonesia, primarily due to high rainfall and geographical factors such as low-lying land that is prone to water accumulation (Lumban-Gaol et al., 2024). One of the most significant flood events took place in 2022 in Kalibaru District, Banyuwangi

City, where intense rainfall led to the overflow of the Yas River, causing severe flooding in residential areas. The floodwaters reached a depth of 20-50 cm, affecting approximately 275 families (Ministry of Health of the Republic of Indonesia, 2022). Natural disasters like floods not only cause physical destruction

but also have profound effects on the well-being of affected communities.

The impacts of the flood in Kalibaru were extensive and multifaceted. First, the environmental consequences included damage to buildings, houses, and critical infrastructure such as bridges. Second, there were significant physical impacts, including casualties, injuries, and missing persons. Lastly, the disaster had severe psychological effects, leading to fear, anxiety, sadness, guilt, and feelings of hopelessness (Mazzarelli et al., 2021). These emotional and psychological responses can be deeply traumatic, and in severe cases, may lead to Post-Traumatic Stress Disorder (PTSD). The greater the trauma experienced, the higher the likelihood of developing PTSD.

The flash flood disaster in Kalibaru occurred due to the combination of extremely high rainfall and the inability of the Yas River to contain the excessive water flow. As a result, the river overflowed, flooding residential areas and causing extensive damage. The affected residents experienced not only immediate dangers such as drowning and injuries but also long-term psychological distress. The aftermath of the flood left many victims struggling with mental health issues, particularly PTSD, which can have lasting

effects on their daily lives and overall well-being.

Addressing PTSD in flood victims requires a comprehensive approach that considers various influencing factors. Research indicates that PTSD is influenced by traumatic experiences, behavioral responses, and individual characteristics (Puechlong et al., 2020). Among these, individual characteristics play a crucial role in determining how a person copes with trauma (Mattson et al., 2020). PTSD is an anxiety disorder that arises after experiencing a life-threatening event (Birk et al., 2019). One of the key factors influencing PTSD is individual personality traits, including age, which affects cognitive function and emotional resilience (Yehuda & Flory, 2007). Older individuals may have a greater ability to process traumatic experiences due to accumulated knowledge and experience.

This study aims to explore the relationship between individual characteristics and PTSD in victims of flash floods in Krajan and Tegal Pakis Hamlets, Kalibaru District, Banyuwangi. Understanding this relationship can help develop better intervention strategies to support affected individuals and mitigate the long-term psychological impact of such disasters. Based on this background, the research problem can be formulated as

follows: What is the relationship between individual characteristics and Post-Traumatic Stress Disorder (PTSD) in flash flood victims in Krajan and Tegal Pakis Hamlets, Kalibaru District, Banyuwangi.

2. METHODS

This research was conducted in Krajan and Tegal Pakis Hamlets, Kalibaru District, Banyuwangi Regency from June to July 2024. This research design uses descriptive analytical with a Cross-Sectional approach. The research population used in this study was the community in Kalibaru Wetan District, especially in Krajan and Tegalpakis

Hamlets with a sample size of 181 respondents. The sampling technique in this study was the purposive sampling technique. Data collection was carried out by visiting the residences of the respondents who were used as samples from house to house. Data collection consisted of primary data, namely individual characteristics and Post Traumatic Stress Disorder (PTSD), while secondary data was in the form of a preliminary study. The tests carried out in this study were validity tests and reliability tests. Data analysis was carried out using univariate analysis and bivariate analysis.

3. RESULTS

Table 1. Respondent Characteristics According to Age, Gender, Education, Occupation, Marital Status, Losses Experienced, Injuries in victims of flash floods in Krajan and Tegal Pakis Hamlets, Kalibaru District, Banyuwangi (N=181)

Characteristics	Frequency	Percentage (%)
Age		
Adolescent	30	16,6
Adult	86	47,5
Early elderly	65	35,9
Gender		
Male	68	37,6
Female	113	62,4
Education		
Primary	3	1,7
Junior high	10	5,5
High school	147	81,2
University	21	11,6
Occupation		
Unemployed	58	32,0
Civil servant	21	11,6
Self-employed	21	11,6
Farmer	49	27,1
Trader	32	17,7

Characteristics	Frequency	Percentage (%)
Marital status		
Married	167	92,3
Single-handed	1	6
Widow/Widower	13	7,2
Losses experienced		
Property	155	155
Livestock	26	26
Injuries		
Minor injuries	17	9,4
No injuries	164	90,6

Based on Table 1, the results obtained from 181 respondents can be seen that the age category of the most significant respondents is the adolescent age category of 30 people (16.6%), adults of 86 people (47.5%), and elderly 65 people (35.9%). In the gender variable, it can be seen that of the total respondents, 62.4% were female (113 people), and 37.6% were male (68 people). In the Education variable, it is known that most respondents have a final educational background of high school, namely 81.2%, college as much as 11.6%, junior high school as much as 5.5%, and elementary school as much as 1.7%. In the employment variable, it can be seen that the majority of respondents are unemployed or homemakers, as many as 58

people (32.0%), second, people work as farmers as many as 49 people (27.1%), third, traders as many as 32 people (17.7%), fourth, self-employed as many as 23 people (12.7%) and the last one works as a civil servant as many as 21 people (11.6%). In the marital status variable, the study's results showed that most of the respondents who participated were married, with a percentage of 92.3%. The loss variable showed that 85.6% of respondents experienced losses in the form of property, while the other 26% experienced losses in the form of livestock. In the injury variable, the study's results showed that 9.4% of respondents experienced moderate injuries due to the disaster they experienced.

Table 2. Post Traumatic Stress Disorder (PTSD) in victims of flash flood disasters in Krajan and Tegal Pakis Hamlets, Kalibaru District, Banyuwangi (N=181)

Post Traumatic Stress Disorder (PTSD)	Frequency	Percentage (%)
Medium	114	63,0
Low	67	37
High	0	0

Based on Table 2, show that as many as 114 people (63%) had moderate PTSD scores, while as many as 67 people (37%)

had low PTSD scores from a total of 118 respondents.

Table 3. Relationship between Characteristics and Post Traumatic Stress Disorder (PTSD)

Characteristics	Post Traumatic Stress Disorder (PTSD)		Interpretation
	P-value	Correlation	
Age	0,015	-0,181	There is a negative relationship
Gender	0,002	0,252	There is a positive relationship
Education	0,155	0,106	There is no relationship
Occupation	0,339	0,218	There is no relationship
Marital status	0,650	0,116	There is no relationship
Losses experienced	0,635	0,071	There is no relationship
Injury	0,758	0,023	There is no relationship

Table 3 shows a significant relationship between the age sub-variable and the level of PTSD with a p-value of 0.015 and a correlation coefficient (r) value of -0.181, which indicates that the relationship is negative with a very weak correlation strength. In the gender sub-variable, there is a significant relationship between the gender sub-variable and the level of PTSD, with a p-value of 0.002 and a correlation coefficient (r) value of 0.252, which indicates that the relationship is positive with a very weak correlation strength. In the education, employment, marital status, and injury sub-variables, there is no relationship with the level of PTSD.

4. DISCUSSION

Characteristics of Individual Flash Flood Victims

Based on age characteristics, it can be seen from the data that respondents are over 30 years old, which is included in the productive age. According to the researcher's assumption, elderly adults or productive age are very susceptible to PTSD because being hit by a disaster such as a flood will hinder work and social life. This will impact the individual's economy, causing prolonged stress. According to gender, the largest gender is women, where women are more emotional. Women tend to reflect and think about the impact of the disaster for a long time, so they have to recover from the problem; in contrast to more logical men, after a disaster, men will be calmer and immediately find solutions to existing problems. Based on education, the people of Krajan Hamlet and Tegal Pakis Hamlet have an average education of high school, this is quite good so that it can

make residents who have been affected by the flood disaster better understand the prohibition of residents' habits that cause natural losses, such as throwing garbage in the river because these habits cause losses to themselves. Based on the type of work, from the data obtained in Krajan Hamlet and Tagal Pakis Hamlet, the majority of respondents do not work or work as housewives. This causes respondents to lack information about disaster management, and ignorance about disasters increases stress levels. Based on marital status, in the people of Krajan and Tegal Pakis Hamlets, some respondents are already married. Married people will be better at coping mechanisms; they will discuss and strengthen each other with their partners and look for solutions to survive the existing conditions so that there is no prolonged stress. Based on the losses experienced, some residents who experience property losses will experience severe stressors because they work for years to collect property; after the disaster, the property they collected is lost or damaged by water, which causes many residents to experience trauma due to flooding. Based on the injuries obtained, residents affected by the disaster did not experience injuries, this makes residents feel safe and more alert after the disaster.

Post Traumatic Stress Disorder (PTSD)

The results of the study conducted by researchers showed that the majority of PTSD levels of flood disaster victims in Krajan Hamlet and Tegal Pakis Hamlet experienced moderate PTSD. According to the researcher's assumption, most respondents had received information about disaster management, and the government facilitated the damage experienced by victims. However, the community still feels anxious about flooding again in the coming year. According to research from (Khan & Iqbal, 2023), PTSD symptoms are in the moderate category. It shows that flood survivors often experience PTSD symptoms. Other subjects are in the high category, which shows that the research subjects very often or often experience psychological symptoms. PTSD is a psychological barrier for a person, a severe condition that makes them helpless, as a response to experiencing a stressful or traumatic event. Symptoms shown by a person such as seeing a mountain moving or almost collapsing, not wanting to see or pass the traumatic scene because they will remember the traumatic event they experienced, experiencing sleep disorders such as often dreaming about traumatic events, when in public transportation the vibrations that occur in the vehicle as if

experiencing an earthquake, and many others (Haladin et al., 2021). Flood victims often experience psychological barriers because they experience many changes, such as having to re-adapt to a new community environment. Losing family members and property is also a cause of individuals experiencing psychological barriers. To deal with life's pressures after experiencing a flood disaster (Walker-Springett et al., 2017).

The Relationship between Individual Characteristics with Post Traumatic Stress Disorder (PTSD) in Flood Disaster Victims

Based on the analysis conducted to see the relationship between age and PTSD using the Contingency Correlation test, the p-value was 0.015. This value indicates that there is a significant relationship between age and the incidence of PTSD in the flood disaster victim community in Krajan and Tegal Pakis Hamlets, Kalibaru District. Based on the analysis conducted to see the relationship between age and PTSD using the Contingency Correlation test, the p-value was 0.015. This value indicates that there is a significant relationship between age and the incidence of PTSD in the flood disaster victim community in Krajan and Tegal Pakis Hamlets, Kalibaru District. Based on the analysis conducted to see the

relationship between education type and PTSD using the Spearman test, the p-value was 0.155. This value indicates that there is no significant relationship between Education and the incidence of PTSD in the flood disaster victims in Krajan and Tegal Pakis Hamlets, Kalibaru District. Based on the analysis conducted to see the relationship between type of work and PTSD using the Spearman test, the p-value result was 0.339. This value indicates that there is no significant relationship between the type of work and the incidence of PTSD in the flood disaster victims in Krajan and Tegal Pakis Hamlets, Kalibaru District. Based on the analysis conducted to see the relationship between type of marital status and PTSD using the Spearman test, the p-value result was 0.650. This value indicates that there is no significant relationship between marital status and the incidence of PTSD in the flood disaster victims in Krajan and Tegal Pakis Hamlets, Kalibaru District. Based on the analysis conducted to see the relationship between Losses experienced and PTSD using the Spearman test, the p-value result was 0.635. This value indicates that there is no significant relationship between Losses experienced and the incidence of PTSD in the flood disaster victims in Krajan and Tegal Pakis Hamlets, Kalibaru District. Based on the analysis conducted to see the relationship

between Injuries and PTSD using the Spearman test, the p-value was obtained as 0.758. This value indicates that there is no significant relationship between Injuries and PTSD incidents in the flood disaster victims in Krajan and Tegal Pakis Hamlets, Kalibaru District.

5. CONCLUSION

Based on the results of the research that has been conducted, it can be concluded that the characteristics of respondents who were victims of the flood disaster, include the adult age group as many as 86 people (47.5%), female gender as many as 92 people (49.2%), education predominantly high school as many as 147 people (81.2%), the most jobs are unemployed/homemakers 60 people (33.1%), the most marital status is married 167 people (92.3%), the most losses experienced are property 155 people (155%), the average patient did not experience injuries 164 people (90.6%). The results of the study on the Post Traumatic Stress Disorder (PTSD) variable in flood disaster victims in Krajan and Tegal Pakis Hamlets showed that most respondents experienced moderate PTSD levels as many as 114 people (63.0%). There is a relationship between age and post-traumatic stress disorder (PTSD) with a p-value of 0.039 and a correlation value of r

0.154; this value indicates a positive or unidirectional relationship, which means that a person's age can affect a person's PTSD level. This is the same as gender, where there is a relationship between gender and PTSD levels, including a p-value of 0.001 and a correlation value of r 0.154; this value proves that there is a relationship between a person's gender and PTSD levels.

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AUTHOR CONTRIBUTIONS

Substantial contribution to conception, data collection, analysis, writing manuscript and revision: Yeni Maulina

CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

DATA AVAILABILITY STATEMENT

The data are not publicly available due to privacy or ethical restrictions.

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