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## The Effect of Post-Flood Trauma on the Sleep Quality of Elderly People in Teupin Banja Village, Muara Batu District, North Aceh Regency

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### Abstract

Floods are natural disasters that can have significant psychological impacts, especially on vulnerable groups such as the elderly. This study aims to determine the effect of post-flood trauma on the sleep quality of elderly people in Teupin Banja Village, Muara Batu District, North Aceh Regency. The research method used an analytical design with a cross-sectional approach with 32 elderly respondents. The results showed that the majority of respondents experienced moderate-to-severe trauma (62.5%) and poor sleep quality (65.6%). Statistical tests using Fisher's Exact test showed a p-value of 0.027 ( $p < 0.05$ ). This demonstrates a significant influence between post-flood trauma and sleep quality in the elderly. Elderly people with moderate-to-severe trauma tended to experience poorer sleep quality than those with mild trauma.

**Keywords:** Trauma, Post-Flood, Sleep Quality, Elderly.

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### INTRODUCTION

The development of digital technology has brought fundamental changes to marketing practices across various business sectors, including Micro, Small, and Medium Enterprises (MSMEs). This transformation affects not only how business actors market their products but also changes consumer behavior in seeking information, obtaining recommendations, and making purchasing decisions. Social media and internet-based advertising have now become the primary means for consumers to interact with brands and build perceptions of a product. In this context, MSME actors are required to optimize digital promotion strategies to remain competitive and relevant in an increasingly dynamic market (Kotler & Keller, 2016).

Geographically, the North Aceh region is frequently affected by annual floods due to river overflows and high rainfall intensity, which creates constant anxiety for local residents. For the elderly, the threat of sudden rising water creates a sense of helplessness due to their limited mobility to save themselves and their belongings. The traumatic experience of facing water currents and emergency evacuation processes can leave long-term memories, triggering significant post-traumatic stress responses (PTSD).

The psychological impact of this disaster is often overlooked compared to the physical recovery of buildings, even though mental conditions significantly affect the body's biological rhythms. Stress and trauma cause the body to remain in a state of high alertness (hyperarousal), which physiologically inhibits the transition to a peaceful sleep. In the elderly, this nervous system disruption becomes more complex because the natural aging process already alters their sleep structure, making it lighter and more easily disturbed.

Sleep quality is a vital indicator of elderly health because it is during the sleep phase that cell recovery and emotional stabilization occur. When sleep quality is chronically disrupted by shadows of trauma, the elderly will experience extreme fatigue, decreased immunity, and cognitive impairment. Therefore, understanding the level of post-flood trauma is key to identifying the root cause of their low quality of life post-disaster.

In Teupin Banja Village, social interaction and family support play a crucial role in the lives of the elderly. However, when a village is hit by a flood, these support sources often weaken as other family members are also busy dealing with the economic and physical impacts of the disaster. This

causes the elderly to feel isolated in their fears, which ultimately exacerbates the level of trauma they feel at night when trying to rest.

The importance of this research lies in the need for empirical data to develop mental health intervention programs for the elderly in disaster-prone areas. By proving a significant influence between trauma and sleep quality, public health authorities can design recovery strategies that focus not only on logistical aid but also on trauma management. This step is expected to minimize the risk of long-term health complications for the elderly population in Teupin Banja Village.

## RESEARCH METHODS

This research is an analytical study using univariate and bivariate analysis approaches. The population in this study was elderly people in Teupin Banja Village, with a sample size of 32 respondents. The research instrument was used to measure the level of post-flood trauma and sleep quality of the elderly. Bivariate data analysis was performed using the Fisher Exact test to examine the relationship or influence between variables.

## RESULTS AND DISCUSSION

Characteristics	Frequency (n)	Percentage (%)
<b>Age</b>		
60–69 years	18	56,3
70–79 years	10	31,3
≥ 80 years	4	12,5
<b>Gender</b>		
Male	14	43,8
Female	18	56,3
<b>Education</b>		
No school	11	34,4
SD	13	40,6
SMP/SMA	8	25,0
<b>Residential Status</b>		
Lives with family	26	81,3
Lives alone	6	18,8
Univariate Analysis		
Distribution of Post-Flood Trauma Levels in the Elderly		
Trauma Level	Frequency (n)	Percentage (%)
Minor Trauma	12	37,5
Moderate–Severe Trauma	20	62,5
<b>Total</b>	32	100

Distribution of Sleep Quality in the Elderly

Sleep Quality	Frequency (n)	Percentage (%)
Good	11	34,4
Poor	21	65,6
<b>Total</b>	<b>32</b>	<b>100</b>

Bivariate Analysis

The Effect of Post-Flood Trauma on Sleep Quality in the Elderly

Trauma Level	Sleep Quality				Total		p-value
	Good sleep		Bad Sleep				
	F	%	F	%	F	%	
Minor Trauma	7	58.3	20	41.7	12	100	<b>0,027</b>
Moderate–Severe Trauma	4	20	32	80	20	100	
<b>Total</b>	<b>11</b>	<b>34.4</b>	<b>21</b>	<b>100</b>	<b>65.6</b>	<b>100</b>	

Based on the results of the bivariate analysis using the Fisher Exact test, a p value of 0.027 ( $p < 0.05$ ) was obtained, indicating a significant effect of post-flood trauma on the sleep quality of elderly people in Teupin Banja Village, Muara Batu District, North Aceh Regency. Elderly people with moderate to severe post-flood trauma tend to have poor sleep quality compared to those with mild trauma.

**DISCUSSION**

This study reveals that flood disasters in Teupin Banja Village have a significant psychological impact on the elderly. Based on the univariate analysis, the majority of respondents (62.5%) experienced moderate-to-severe trauma. This aligns with the geographical conditions of North Aceh, which faces annual flooding. Trauma in the elderly is triggered by feelings of helplessness due to physical limitations during emergency evacuations, leaving deep emotional scars.

Regarding sleep quality, 65.6% of respondents were reported to have poor sleep quality. This low quality is not only caused by natural degenerative factors associated with aging but is also exacerbated by post-disaster psychological conditions. Based on the statistical analysis using the *Fisher's Exact Test*, a *p-value* of 0.027 was obtained. Since  $p < 0.05$ , the null hypothesis is rejected, indicating a significant influence of post-flood trauma on the sleep quality of the elderly in Teupin Banja Village.

Physiologically, elderly individuals with moderate-to-severe trauma tend to be in a state of hyperarousal (excessive alertness). Traumatic memories of rushing water or the sound of heavy rain trigger anxiety, which inhibits melatonin secretion and increases cortisol levels. Consequently, the elderly face difficulties initiating sleep (sleep latency) and experience frequent nighttime awakenings. This finding is supported by the fact that those with minor trauma have a higher chance of maintaining good sleep quality (58.3%) compared to those with severe trauma (only 20%).

Social support, while high—as 81.3% of respondents live with family—may not be fully effective during a communal disaster. When a flood strikes, family members also face economic and physical pressures, often causing the specific emotional needs of the elderly to be overlooked. Therefore, health interventions must look beyond logistics and focus on trauma healing to improve the quality of life for the elderly in disaster-prone areas.

## CONCLUSIONS

Based on the research findings regarding the effect of post-flood trauma on the sleep quality of the elderly in Teupin Banja Village, Muara Batu District, North Aceh Regency, it can be concluded that: Trauma Levels: The majority of the elderly experienced moderate-to-severe trauma (62.5%) resulting from their experiences during flood disasters. Sleep Quality: Most of the elderly respondents suffer from poor sleep quality (65.6%), characterized by significant rest disturbances at night. Significant Influence: There is a statistically significant correlation between post-flood trauma and sleep quality, with a p-value = 0.027. Higher levels of perceived trauma directly correlate with poorer sleep quality in the elderly population.

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