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IDENTIFICATION OF POST-TRAUMIC STRESS DISORDER IN CHILDREN AFTER THE FLOOD DISASTER IN SOUTHEAST ACEH DISTRICT

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Abstract

Flood disasters have a significant impact on human life, both physically and psychologically. Children are a vulnerable group at higher risk during and after a disaster. The most common psychological effect after a disaster is Post Traumatic Stress Disorder (PTSD). The purpose of this study was to detect PTSD early in children who were victims of flood disasters. This study used a quantitative design with a *cross-sectional* approach . A total of 61 child flood victims were involved in the study. The study was conducted in Southeast Aceh Regency, one of the worst flood locations in Aceh Province in 2025. The instrument used was the PTSD Checklist for DSM-5 (PCL-5), which consists of 20 questions. The results showed that 39.3% of children experienced PTSD, while 60.7% did not experience PTSD. The incidence of PTSD increased from one week after the disaster, characterized by symptoms of re-experiencing the traumatic experience, avoidance, negative changes in mood and cognition, and hyperarousal. Age, gender, and level of exposure also risk factors influence the emergence of PTSD in children. It is recommended that health workers provide immediate treatment to child victims of disasters.

Keywords: flood; post-traumatic stress disorder; pediatric nursing; disaster management; nursing care.

INTRODUCTION

Indonesia is a tropical country with two seasons: the dry season and the rainy season (Fauziyah et al., 2021). The National Disaster Management Agency (BNPB) reports that climate and topographic conditions can trigger various hydrometeorological disasters such as floods, landslides, forest fires, tornadoes, and droughts (BNPB, 2017; Ayuningtyas, Windiarti, Hadi, Fasrini, & Barinda, 2021). The majority of disasters in Indonesia from 2011 to 2016 were dominated by hydrometeorological disasters, around 90%, with floods being the most frequent, with an average of 30%. Meanwhile, tornadoes accounted for 28%, landslides 22%, drought 5%, and forest and land fires 3% (BAPPENAS, 2017; Ichsan, 2022).

According to the Indonesian Disaster Information Data released by the National Disaster Management Agency (BNPB) (2019), in the last five years, the highest number of flood incidents occurred in 2017 with around 980 incidents. From 2018 to February 2019, the number of flood incidents increased to around 1,379 incidents. Pertiwi & Kurniawan (2017) added that South Sulawesi is one of the areas with a high flood-prone category in the mapping of flood-prone areas in Indonesia. Therefore, nurses' preparedness and understanding of their role in dealing with disasters is very important, especially in terms of response, recovery, evaluation, and continuing education (Martono, Satino, Nursalam, Efendi, & Bushy, 2019).

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Floods have a significant impact on human life, both physically and psychologically. The most common psychological disorder found in natural disasters is Post-Traumatic Stress Disorder (PTSD) (Golitaleb, Mazaheri, Bonyadi, & Sahebi, 2022; Asim et al., 2019). PTSD is a form of anxiety disorder that develops after a person experiences a devastating event, life-threatening abuse, or a situation that leaves them feeling helpless (Miao, Chen, Wei, Tao, & Lu, 2018; Bryant, 2019). Children are particularly vulnerable to PTSD during disasters (Kolaitis, 2017; Scheeringa, Zeanah, & Cohen, 2011).

The incidence and symptoms of PTSD in children vary depending on the type of traumatic event, the severity and duration of the exposure, and demographic variables such as age, gender, and ethnicity (Li et al., 2020). Research by Pangau, Kanine, & Wowiling (2014) reported that children experiencing PTSD were aged 9–10 years, with a 58.5% female predominance compared to males.

Indonesian Government Regulation Number 21 of 2008 concerning disaster management emphasizes that children are a vulnerable group requiring priority in rescue, evacuation, security, health services, and psychosocial support. Parents, as the closest family members, play a crucial role in caring for children experiencing trauma. Their response to trauma will impact their recovery process. Adaptive parental coping strategies can be an effective way to help children overcome trauma (Wise & Delahanty, 2017; Ben-Ari et al., 2021; Wilcoxon, Meiser-Stedman, & Burgess, 2021).

However, children experiencing PTSD will exhibit symptoms that can impact the entire family. Parents may experience stress, diminishing their ability to function as parents. Furthermore, research on PTSD in children in Indonesia is still limited. This study aims to explore this issue to prevent further impacts of PTSD in disaster areas. Changes in parental function can result in unmet family needs and increase stress levels for other family members. Therefore, health workers need to be more responsive in early identification of physical and psychological problems experienced by children to mitigate the impact of disasters. The results of this study are expected to provide a broader perspective in developing comprehensive care for children in flood-prone areas.

RESEARCH METHODS

This study applies a quantitative design with a *cross-sectional* approach . The study was conducted in Southeast Aceh Regency, which is one of the worst flood locations in Aceh Province in 2025. The population of this study were children living in Southeast Aceh Regency. To obtain the desired sample, the author set inclusion criteria, namely children who were flood victims in Kuning I Village, flood victims from grades 4 to 6 who can write and read. While the exclusion criteria were not present during the study and respondents who did not complete the questionnaire. A total of 61 children were evaluated after being selected using a *purposive sampling* technique .

Researchers assessed PTSD using the DSM-5 Checklist (PCL-5) questionnaire, which consists of four symptoms: re-experiencing, avoidance, negative alteration in mood cognition, and hyperarousal. It consists of 20 questions to assess PTSD (Weathers et al., 2013). The questionnaire has been translated and modified into Indonesian with a Content Validity Index (CVI) of 1 and a Cronbach's alpha of 0.875 (Arnika, 2017). Other researchers in Indonesia used

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this instrument to retest its validity and reliability with 356 respondents and obtained an r ≥ 0.113 and a Cronbach's alpha of 0.672 (Nasri, Seniwati, & Erfina, 2020).

All researchers conducted data collection and were assisted by one research assistant. Prior to data collection, the research team and the research assistants conducted a consensus meeting regarding the questionnaire content and how to complete it. Data were analyzed using SPSS version 24. Data were presented using univariate analysis, including frequency distributions and statistical descriptions to demonstrate respondent characteristics and PTSD incidence. Ethical approval was obtained before the study began.

RESULTS AND DISCUSSION

This study shows that the average age of children is between 9 and 13 years. There are 55.7% girls and 44.3% boys. Most respondents (59.0%) began to feel PTSD symptoms one month after the disaster. Exposure to symptoms experienced by children occurred at most twice, which is around 50.8%. The number of respondents who experienced PTSD was 27 children (44.3%), while those who did not experience PTSD were 34 children (55.7%). There are four symptoms of PTSD, namely *re-experiencing* , *avoidance* , *negative alteration in mood cognition* , and *hyperarousal* . Respondents who experienced PTSD were most dominated by re-experiencing symptoms, experienced by 56 children (91.8%), while respondents who did not experience PTSD experienced more hyperarousal, which was 41.0%.

Based on age, PTSD was most commonly experienced at age 11, at 57.1%. Based on gender, the majority of girls experienced PTSD (48.4%), compared to boys. Based on the timing of PTSD symptoms, approximately 47.8% of respondents with PTSD experienced symptoms two months after the flood. The majority of respondents (approximately 70.0%) with PTSD experienced symptoms three times after the flood.

Table 1. Respondent Characteristics

Variables	Characteristics	n	%
Age	9 years	12	19,7
	10 years	15	24,6
	11 years old	14	23,0
	12 years old	19	31,1
	13 years old	1	1,6
Gender	Man	27	44,3
	Woman	34	55,7
When PTSD appears	1 week after the disaster	36	59,0
	2 weeks after the disaster	25	41,0
Frequency of exposure	1 time	11	18,0
	2 times	31	50,8
	3 times	14	23,0
	4 times	5	8,2

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Table 2. PTSD incidence

PTSD incidence	n	%
Experiencing PTSD	27	44,3
Not experiencing PTSD	34	55,7

Table 3. PTSD Incidence Based on Symptoms

Symptoms of PTSD	Experiencing PTSD (n/%)	Not Experiencing PTSD (n/%)
Re-experiencing	56 (91,8%)	5 (8,2%)
Avoidance	45 (73,8%)	16 (26,2%)
Negative alteration in mood cognition	42 (68,9%)	19 (31,1%)
Hyperarousal	36 (59,0%)	25 (41,0%)

Table 4. Respondent Characteristics Based on PTSD Incidence

Variables	Characteristics	Total	Experiencing PTSD n/%	Not Experiencing PTSD n/%
Age	9 years	12	5 (41,7%)	7 (58,3%)
	10 years	15	6 (40,0%)	9 (60,0%)
	11 years old	14	8 (57,1%)	6 (42,9%)
	12 years old	19	8 (42,1%)	11 (57,9%)
	13 years old	1	0 (0%)	1 (100%)
Gender	Man	27	11 (40,7%)	16 (59,3%)
	Woman	34	16 (48,4%)	18 (51,6%)
Time of PTSD Onset	1 month	36	15 (41,7%)	21 (58,3%)
	2 months	25	12 (48,0%)	13 (52,0%)
Exposure Frequency	1 time	11	4 (36,4%)	7 (63,6%)
	2 times	31	12 (38,7%)	19 (61,3%)
	3 times	14	10 (71,4%)	4 (28,6%)
	4 times	5	1 (20,0%)	4 (80,0%)

Discussion

The study results showed that the average age of children was 9–13 years, and PTSD was most commonly identified at age 11, at 57.1%. This finding is supported by Kar et al. (2007), who stated that children aged 11 to 13 years had experienced PTSD, and children with an average age of 10.5 years were included in the vulnerable group for PTSD. However, other studies have reported that PTSD can also be found in younger children (less than 6 years) with similar variations in prevalence rates as in older children, adolescents, and adults (Woolgar et al., 2021). Previously, it was believed that children lacked the emotional regulation and neural circuitry that could act as protective factors against the risk of psychopathology resulting from adverse environmental experiences (McLaughlin & Lambert, 2017).

The incidence of PTSD by gender shows that girls have a higher rate of PTSD, at 48.4%, compared to boys. This finding aligns with research by Alisic et al. (2014), which showed that girls are the group most likely to experience PTSD. There are differences in brain structure

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between boys and girls in the insula, which functions for emotion and empathy. In boys with PTSD symptoms, the insula structure was found to have a larger volume and surface area, while in girls with PTSD symptoms it was found to have a smaller volume and surface area (Klabunde et al., 2017). Other researchers also stated that puberty in girls significantly increases the risk of PTSD (Marshall, 2016).

Based on the onset of symptoms, most respondents began experiencing PTSD one month after the disaster. However, among those who experienced PTSD, approximately 47.8% did not experience symptoms until two months after the flood. Other research on PTSD in children reports that the time required to establish a PTSD diagnosis ranges from one to three months after the traumatic event (Ophuis et al., 2018). The National Institute of Mental Health (NIMH) states that after a traumatic event, a person may experience PTSD, feel detached from the experience, or feel as if they were merely observing the event (NIMH, 2020). PTSD arises from traumatic experiences that cause deep anxiety and worry (Carvajal, 2018).

PTSD symptoms in this study consisted of *re-experiencing* , *avoidance* , *negative alterations in mood and cognition* , and *hyperarousal* . The majority of respondents (91.8%) experienced re-experiencing symptoms, which outperformed other symptoms. This finding aligns with Mahfuzhah et al. (2021) who stated that *re-experiencing* symptoms were the most common trauma among adolescent victims of flash floods. However, other studies have shown that *hyperarousal* was the most common PTSD symptom, while *re-experiencing* was the least common symptom among traffic accident victims (Bahris et al., 2020).

These results indicate that respondents sometimes recognize and re-experience traumatic events that resurface in their memories. This is particularly true for child flood victims. In PTSD, traumatic memories remain, and certain stimuli can trigger a person to recall the traumatic event. *Traumatic reminders* are events after a disaster that can trigger a child or adolescent to relive and experience the trauma as if it were happening again.

CONCLUSION

The results of this study concluded that PTSD in children was most commonly identified at age 11, with a rate of 57.1%, and girls had a higher rate of PTSD (48.4%) than boys. The majority of participants began experiencing PTSD symptoms one month after the disaster, with the most common type of symptom being re-experiencing at 91.8%, followed by avoidance, negative alterations in mood and cognition, and hyperarousal.

This study recommends immediate psychological treatment for child disaster victims to prevent prolonged trauma. Furthermore, a more in-depth exploration of the role of parents in coping with the impact of traumatic events on children is needed.

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