



The Role of Social Media and Information Technology in Emergency Mitigation to Increase the Knowledge of Coastal Communities

Sonata Togatorop¹, Tinawati Nainggolan², Septi³, Pretty⁴

^{1,2,3,4}Sekolah Tinggi Ilmu Kesehatan Nauli Husada Sibolga

ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received Apr 05, 2025 Revised Apr 22, 2025 Accepted May 30, 2025</p> <hr/> <p>Keywords:</p> <p>Social media, Disaster Mitigation, Knowledge, Information Technology, Coastal Communities.</p>	<p>This study aims to analyze the role of social media and information technology in increasing public knowledge about emergency mitigation in the coastal area of Pasir Lapangan Village in 2025. The study used a quantitative method with a one-group pretest-posttest design. A sample of 200 respondents was selected using a cluster sampling technique. Data were collected through questionnaires before and after an educational intervention through social media. The results showed that before the intervention, most respondents had a low level of knowledge (44%), while after the intervention it increased to a good category (59%). The results of the statistical test showed a p-value = 0.001 (<0.05), which means there is a significant effect of social media use on increasing public knowledge. The conclusion of this study is that social media is effective as a means of emergency mitigation education and can increase coastal community preparedness for disasters.</p>

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Corresponding Author:

Sonata Togatorop,
Prodi S1 Keperawatan,
STIKes Nauli Husada,
Jl. Kader Manik No. 02, Kelurahan Aek Muara Pinang, Kecamatan Sibolga Selatan, Kota Sibolga
Email: sonata_elina@yahoo.co.id

1. Introduction

A disaster is an event that can cause environmental damage, loss of life, and disruption to the health service system. (Jusuf, 2012), (Khibibah et al., 2023) Disaster mitigation is a crucial step in reducing the risks and impacts they cause. Advances in information technology, particularly social media, offer significant opportunities for the rapid and widespread dissemination of disaster information. Social media platforms such as WhatsApp, Instagram, and Facebook enable interactive and easily understood educational delivery. (Rofiyanti, Agustina, & Firzah, 2024), (Bakhriansyah, Anhar, & Noor, 2025) Previous research has shown that social media plays a significant role in increasing public disaster preparedness and knowledge. However, in coastal areas, access to information and digital literacy remain limited. Based on this, this study aims to analyze the influence of social media on improving emergency mitigation knowledge in coastal communities. (MUTIARASARI, 2025), (IKA, 2024).

2. Methods

This study used a quantitative design with a pre-experimental one-group pretest-posttest approach. The adult population in Pasir Lapangan Village was sampled: 200 respondents. Sampling technique: Cluster sampling. Instrument: Questionnaire. Intervention: Education through social media (WhatsApp,

Instagram, Facebook).(Novita, 2025),(Irawatie & Indarjo, 2024)The data collected in this study consists of: Primary Data: Data obtained directly from respondents through questionnaires and observations. This data includes the knowledge scores of the community in the coastal area of Pasir Lapangan Village before (pretest) and after (posttest) they were given educational information through social media.(Muhsanah, 2024),(Anwar, 2020). Secondary Data: Supporting data obtained from existing sources, such as population data from Pasir Lapangan Village, disaster documents from BPBD, and literature related to the role of information technology in mitigation.(Badharudin, 2018),(Wati, 2018).

3. Results and Discussion

Table 1Distribution of Respondents by Gender

No	Gender	Frequency	Percentage
1.	Man	82	41%
2.	Woman	118	59%
	Total	200	100%

It is known that the majority of respondents were female, as many as 118 people (59%), while 82 people (41%) were male.

Table 2.Distribution of Respondents Based on Education

No	Education	Frequency	Percentage
1.	Elementary School	42	21%
2.	JUNIOR HIGH SCHOOL	58	29%
3.	SENIOR HIGH SCHOOL	74	37%
4.	College	26	13%
	Total	200	100%

It is known that the majority of respondents have a high school education, namely 74 people (37%).

Table 2.Distribution of Respondents Based on Occupation

No	Work	Frequency	Percentage
1.	Fisherman	64	32%
2.	Farmer	36	18%
3.	Housewife	62	31%
4.	Self-employed	38	19%
	Total	200	100%

Most of the respondents worked as fishermen, as many as 64 people (32%).

Table 3.Pretest Results of Emergency Mitigation Knowledge Level

No	Level of Knowledge	Frequency	Percentage
1.	Good	40	20%
2.	Enough	72	36%
3.	Not enough	88	44%
	Total	200	100%

Based on the table above, it is known that the pretest results show that the majority of respondents had a low level of knowledge, namely 88 people (44%) regarding emergency mitigation before being given education via social media.(Metri, 2022),(Rahmadita, 2019).

Table 4. Posttest Results of Emergency Mitigation Knowledge Level

No	Level of Knowledge	Frequency	Percentage
1.	Good	118	59%
2.	Enough	62	31%
3.	Not enough	20	10%
	Total	200	100%

Based on the table, it is known that after being given emergency mitigation education via social media, there was an increase in the level of respondents' knowledge, where the majority of respondents were in the good category, as many as 118 people (59%). (Mahardika, Rismawan, & Adiana, 2023).

Table 5. Analysis of the Influence of Social Media on Emergency Mitigation Knowledge

No	Variables	Mean	p-value
1.	Pretest	56.4	
2.	Posttest	78.9	0.001

4. Conclusions

The level of public knowledge before education was still low. There was a significant increase after education through social media. Government: Utilizing social media as a means of disaster education. Community: Using social media wisely for health and disaster information. Further researchers: Developing other variables such as attitudes and behavior.

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