

The Role of Media for Communication During the Disaster

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Riwayat Artikel

Diterima pada 2 Maret 2023

Revisi 1 pada 14 Maret 2023

Revisi 2 pada 16 Maret 2023

Disetujui pada 17 Maret 2023

Abstract

Purpose: This paper aims to describe the role of media in communication during the disaster.

Research methodology: This paper is a narrative literature review. The articles were taken from Science Direct and Google Scholar. The articles were selected based on the title, abstract, and full-text screening.

Results: Results revealed that the roles of media are essential such as making people understand the types of disaster risk, providing information and solution for managing risks, engaging people power, disseminating information, hosting a discussion between government and people, also creating a sharing idea platform, and communicating emotions. Media language and communication type must be well prepared to disseminate the right information at the precise time. In conclusion, the media's role is essential in disseminating information, solutions, and emotions among people during a disaster. Therefore, the language and communication type must be carefully selected to deliver precise information at the right time.

Contribution: Social and disaster management

Limitations: The specific media should be determined in a research to compare the role of each media equally.

Keywords: *Communication, Disaster, Media*

How to cite: Yuliana, Y. (2022). The Role of Media for Communication During the Disaster. *Jurnal Studi Ilmu Sosial dan Politik*, 3(1), 1-7.

1. Introduction

Many countries in the world have been hit by natural disasters in the last few decades. Disasters cause damages to lives and infrastructures. Disaster is a condition that causes dysfunction, disruption, and dislocation. A natural disaster usually has an extent boundary (Simon et al., 2015). This condition affects the human resources and affected regions. The nature and reason for a disaster are sometimes unexplained. Therefore, all countries and organizations must work in collaboration to manage the disaster, including the use of social media (Domalewska, 2019; Simon et al., 2015). The types of disasters are various, such as earthquakes, floods, tsunami, etc. There have been small, medium, and large-scale disasters. Some examples of disasters that happened in Indonesia are tsunami in Aceh and Nias in 2004, the earthquake in Yogyakarta (2006), West Sumatra (2009), and Lombok (2018), also Mount Merapi Eruption in 2010. Experiences have shown that the recovery period after a disaster must be carried out comprehensively. It needs collaboration and active participation from local and central government, also the regional and local stakeholders. Recovery strategy requires special policies in the field (Cerase et al., 2019; Fauzi & Marhamah, 2020; Hadi, 2019; Nuriman et al., 2022).

Social media does not have any geographical boundaries. It is interactive. Therefore, the response will be faster than printed media. Mount Merapi and the Covid-19 pandemic are the examples of the media usage during disaster. Coordination and fund raising activities can be delivered by social media (Widyastuti, 2021). In the post-disaster period, there should be three main assessments. Those assessments are the identification of the needs during early recovery, the damage (including loss) calculation, and disaster risk reduction strategy. The rehabilitation of infrastructure, socio-cultural, and economic recovery should be implemented also. That rehabilitation and assessment need good communication through suitable media (Hadi, 2019; Kapoor et al., 2018). Identification of rehabilitation

and reconstruction strategy needs good communication. The long term process is sustainable and it needs rebuilding efforts. A better and safer environment needs to be built soon. Contribution from private and government partners is needed to implement the recovery process faster (Hadi, 2019). The nature of the disaster is unpredictable, therefore the role of media for communication during the disaster must be maximized. Effective communication is critical in daily life, especially during a disaster. Media as a tool for communication must provide clear information without any ambiguity. During a disaster, face-to-face communication is difficult to be done, therefore the media's role is essential (Emmy et al., 2016).

There were opportunities and challenges in using social media for communication during the disaster. The structures of information during the disaster are almost the same, i.e. the use of social media in delivering the news and information. The impact of social media depends on the type of disaster. Risk communication shows different impacts on the types of disasters. Social media can be used to disseminate information in natural and man-made disasters (Emmy et al., 2016). Social media is preferable due to interaction and exchange of information among users. Users can share links of information with their friends in real time. Therefore, social media can be used as a special tool for organizing and mobilizing populations based on the up-to-date conditions. Social media facilitates connections among the public, government, and victims. The connectivity is very crucial during the disaster and recovery period because it will increase reassurance and support for populations (Simon et al., 2015). There are structural differences in social media networks based on the type of disaster. Emotional function is embedded in the communication during the disasters. Furthermore, the leaders' opinion often interferes the communication. Therefore, the communication must be kept as far as possible. The network also plays an essential role in information transmission. The low-speed internet connectivity can delay information transmission and cause distorted news. Social media is also prone to attacks from hackers. On the other side, better connectivity will give a faster information transmission.

Social media has some roles in the emergency conditions because it is used as a component of crisis action. However, the given information should not be overloaded. When a bulk of the information is given, people are prone to misinformation risk. Public activities related to disaster are search and rescue, victim evacuation, first aid help, and online support. Social media is a place where the citizen can disseminate and access information on one platform. The social media that is famous since the early phase is Facebook and Twitter. However, there are many platforms now. Public, governments, and non-government are using social media as a tool for communication during disaster and post-disaster recovery. Social media is considered a new channel to communicate and share information. Users can share any thoughts, give likes, follow other users/groups, and join groups. A hashtag is used to give special information and make information searching easier (Simon et al., 2015).

Social relations theory is related to the improvement of risk communication. It also makes the information structure better and reduces the risk of information. The goal of communication during a disaster is looking for a way to return to normal condition as soon as possible. It also provides accurate information, raises awareness, and enables timely response. Nevertheless, communication media and channels face challenges in delivering prompt and timely information. Delivering information to beneficiaries is difficult due to unavailable tools during the disaster. Therefore, using multiple media tools is essential to give information to many people as quickly as possible (Liu et al., 2020). Based on the many challenges that might happen during delivering information during a disaster, this paper aims to describe the role of the media in communication during a disaster.

2. Literature Review

In the age of information and communication technology, the role of digital communication channels has become very critical in delivering quick and prompt information. On the other hand, the dependency on the media has increased. Therefore, the quality of the media channel must be enhanced, especially during a disaster (Liu et al., 2020). Several roles of the media are information dissemination, education, and disaster management. The well-functioned media channels during the disaster are usually radio,

phone, television, newspaper, or social media. Those channels are the usual tools for information and messages dissemination to victims and society. Effective communication is essential during a disaster. The recovery process needs effective and quick communication (Liu et al., 2020; Yandra et al., 2017). Social media is an effective tool to deliver information. Current issues can be explained to the public through social media. There are several different types of social media. Those types can disseminate information strategically to avoid any worsening crisis (Liu et al., 2020). When the conventional type of communication is unavailable during the crisis period, there should be alternate media such as social networks (Simon et al., 2015).

Communication role is as the policy sharing information tool. It is also important in increasing the public discourse. The roles of authorities can be supported by communication through media. Media can be used for risk reduction communication. The situation in rebuilding the infrastructures during the recovery period is very complicated. It is a dynamic situation. Therefore, communication must be maintained in prompt and fast ways. The challenge is how to build effective communication and response. Effective communication requires the four W's and one H's, namely what, when, where, when, and how. Everything needs to be clear, especially about what the main information is, when the time for information delivery is, and other main characteristics of the messages. The types of communication tools are also important. Training of awareness and demonstration needs to be given (Liu et al., 2020).

The role of media is huge during disaster management. The community depends on the information very heavily, especially during the post-disaster period. Therefore, the media should inform the true news. Appropriate mass media should report accurate information to the community. The media content can influence society. The media should send the message effectively. However, choosing the right media can be a challenge. The ideal media should be cheap and effective. The target area should be reached based on the goal of the message. Printed and electronic media can be chosen (Yandra et al., 2017). Audio-visual media such as television is usually preferred by the public. The information that is delivered by audio-visual devices is easily understood and well heard. The positive side of television is it can be accessed by all regions of Indonesia. Almost every house has a television.

Television is also a tool for entertainment. It does not need any special literacy to enjoy the television program. Therefore, television is a good medium to deliver information during a disaster. It is different with radio and newspaper. Television uses images and sound to deliver information at simultaneous times. A large community can be reached by using television. The speed of information transfer is very fast. Therefore, most people prefer television to radio. However, during the disaster, the signal of the radio is usually better than the television in the remote area. Radio can transmit some disaster information such as early warning, education, events, and mitigation (Yandra et al., 2017). The phone might lose the signal during the disaster due to tower damages or overloaded communication during a hectic period (Simon et al., 2015). Field engineers and officials need to be familiar with giving prompt information through media during the disaster. Local government representatives are directly engaged in disseminating information to the community. Communication is usually facilitated through several channels, including mass media, namely television, newspapers, radio, digital media, and person-to-person communication (Liu et al., 2020).

3. Methodology

This is a narrative literature review. The articles were taken from Science Direct and Google Scholar. Science Direct and Google Scholar were chosen because the most updated articles were found in both websites. The articles were selected based on the title, abstract, and full-text screening. Inclusion criteria are research and review. Exclusion criteria are un peer-reviewed and unavailable full-text articles. Finally, there were 20 selected articles. The selected articles were summarized and narrated.

4. Result and discussion

Real cases of using media for communication are in the cases of Mount Merapi and the COVID-19 pandemic. The positive side of social media is social media does not have any geographical

boundaries. Giving information, coordination, and fund raising activities can be delivered by social media (Widyastuti, 2021). Media usage is increased during the COVID-19 pandemic and it needs media literacy to strengthened the capabilities of users (Amiri et al., 2022; Vesali et al., 2022). During the COVID-19 pandemic, 167 countries provided information based on the social media, apps, and portals (Ukwuoma et al., 2022).

The roles of media are essential such as making people understand the types of disaster risk, providing information and solution for managing risks, engaging people power, disseminating information, hosting a discussion between government and people, also creating a sharing idea platform, and communicating emotions. Media language and communication type must be well prepared to disseminate the right information at the precise time (Sharma et al., 2021). Mass media is a channel to share information related to human interest. On the other hand, disaster is a condition that needs urgent reports and information transfer. Media has essential roles for victims, government, and society to seek recent information regarding the emergency action needed. Mitigation and policies should be communicated via suitable media (Udo, 2022; Yandra et al., 2017). Online connection is preferable due to wide and global connection. There is no location limitation when using an online connection. After the disaster, the public will seek the news by using available channels such as emails, newspapers, television, the internet, or phone calls. The messages are better to be delivered in fast and simple ways to reduce the anxiety (Simon et al., 2015).

The use of media in disaster situation comprises of four steps. Those steps are initial information, reality checking, information dissemination, and a feedback loop (Cerase, 2018). Comprehensive communication needs specific strategies. Ample resources are required. The local and community levels are important to be prepared when sharing information. Timely information dissemination is critical for end-users. Quality assurance and credibility need to be ensured. Different channels of media and tools must deliver the same information to prevent further consequences and ambiguity. Nevertheless, any disparities in each level must be timely managed (Sharma et al., 2021).

The main barrier is the discrepancy between the information sources and beneficiaries' accessibility. Administrative information and grants should be disseminated through official channels. However, there might be representative disparity, because the beneficiaries could be in grief that they could not understand the whole information well. The level of education determines the acceptance of information. Different languages and cultures should be taken into consideration when delivering information. Information should be clear and concise. Uncoordinated stakeholders at several levels can result in uneven information. It will lead to conflicts. Clear information on time is essential to prevent conflicts. When the information is timely delivered, the construction will be faster deployed. Successful reconstruction depends on the process of information delivery. Therefore, the role of media is very important during a disaster. A comprehensive communication channel must be provided to ensure prompt and timely information management (Sharma et al., 2021).

Strategies and programs are essential components during the recovery period. A significant correlation is found between the effectiveness of communication and the reconstruction speed. Therefore, it is important to put communication and information as the main critical components during the disaster. Responsibilities should be taken by the stakeholders. Strategies and adequate resources must be allocated. Comprehensive communication programs should be developed based on the strategies. Sufficient resources need to be allocated to prevent delayed information dispatch. A suitable communication channel has a critical role in information dissemination. A large dissemination scale is attained through mass media such as radios and assistance groups. The type of information should be based on the level of education, needs, and accessibility. Therefore, various appropriate communication channels can be used. However, this practice sometimes is not efficient. The most effective channel is chosen based on the socio-economic, cultural, and linguistic status of beneficiaries (Sharma et al., 2021).

Monitoring, feedback, and evaluation are important things to be done in ensuring the quality of credible

information dissemination. This mechanism is very essential to keep the credibility of the information. Reviewing before sharing is also critical. A one-door policy must be implemented to ensure the same information for every level of society. The quality control process should be done by all representatives from whole levels of government. Feedback is needed from every level to prevent gap communication (Sharma et al., 2021). The government should collaborate with private sectors to create crisis management support and simplify the process needed in delivering the goods and resources to the victims. The disaster itself has caused stress because of the deviation of routine activities. Therefore, the procedures related to recovery should be made as simple as possible. The information and Communication Technologies technique usage can help to simplify the related procedures and actions. Organized mitigation is essential to reach the recovery state as soon as possible. The sharing of information and coordination are the important keys in disaster management. The organized actions include the management of staff, strategy, and collaboration among the organization and the social environment. The information management system is based on a structural command from up to bottom. The rapid response should be done based on the responsibilities and coordinated actions among organizations. The unified command is needed to ensure the same, unbiased, and unified information. Situational awareness should be developed to implement a comprehensive response during an emergency (Simon et al., 2015).

The principle of media usage during the post-disaster period should be based on the concept of persistence, simplicity, and recordable. Social media is preferable due to the simplicity in sharing and disseminating information. All users can share information. However, there should be coordinated activities to reduce information bias. Official sources of information should be provided as soon as possible after the disaster happens. Crowdsourcing can be used as one of the ways to connect the crowd to distribute problems and solutions regardless of the location and identity. The crowd can validate the information to ensure the right information delivery. Geo-location data can be combined with social media and crowdsourcing to identify the exact location of the victims. The city and country name, intersection, landmark, and highways are important data. The data are related to evacuation route, damage/injury report, and the availability of the resources. The spreading information mechanism can be started by reporting the friends' activities at the disaster places, then disseminating it to their relatives and friends. Sometimes, social media reports earlier than television. Re-tweeting can proliferate the information exponentially in a very fast way. However, the accuracy of social media information sometimes cannot be ensured. Therefore, the government should define the policies before using social media to communicate with the public. This is crucial because people might not be aware when screening any overloaded information during the disaster. Reviews and verification before allowing posting should be done by the administrator of social media to ensure the validity of the posted information. Social media had been used in many disasters such as in earthquake in Haiti (2010), Hurricane Sandy (2012), and the Westgate Mall terror attack (2013).

The advantage of using social media in communication during a disaster is the channel can provide two-way communication style. Meanwhile, TV and radio are mostly one-way communication, although there is sometimes a two-way communication such as using interactive mode by phone. Interactive, synchronous, and a two-way communication are important criteria of effective communication media during a disaster (Simon et al., 2015). Using technology and integrating social media for emergency communication must be accompanied by experts. This policy is needed to ensure that the information configuration is accurate. Redundant and irrelevant information must be avoided. That information should not be posted. Otherwise, the public will be panic. The ideal message should be simple and meaningful. Training should be given to the administrator who operates the social media officially for the government. Therefore, the budget for training must be prepared. Training can be done in a simulation game method. The training is combined with crowdsourcing tasks, search, and rescue operations. Social media should be used effectively and promptly to deliver exact and timely information during the disaster period. During this crucial period, the employee must separate the personal profile from the organization's social media. This is important to avoid posting false information on the false account. Social media can be used to gain feedback and reduce the number of the needed sources (Simon et al., 2015).

The filter is important to access and sort the meaningful information as precisely as possible. The accepted information can be used to decide the correct response as soon as possible. Social media is preferred over email and phone because the response is quicker. Social media share information in the form of texts, images, videos, and tweets within seconds. The simultaneous activities of posting on social media can be accomplished by public, private, individual, and government. Therefore, it might be overloaded information. The filter is very essential during that time. An automated filter is needed because a manual filter is impossible to do that huge data analysis. The writing style needs to be considered also. The language should be as simple as possible to prevent ambiguity. The global users of social media connect millions of users in the world. Rapid communications are easy to be achieved by using social media. For example, when there is an earthquake, the tweets are made approximately within two minutes of the origin time. This is faster than seismographic detection (Cerase, 2019; Simon et al., 2015).

There is social vulnerability among the disaster victims. Therefore, communication should be considered as meticulous as possible. A bad communication will negatively affect the people. The way in preparing and responding to the disaster shape the reaction of the people. The emergency responders need to identify the communication style when dealing with the victims and the public. Social vulnerability appears due to social inequality. Therefore, equal access to information should be provided to the victims. The appropriate reaction must be given to increase the effectiveness of communication. Institutional support can be given by ensuring that all victims have access to the needed information during the disaster. Fact-checking should be done before delivering any information to the public and victims. False information is easily spread through social media (Hansson et al., 2020). Therefore, public awareness and education of the people should be strengthened while delivering information by media (Soltani, 2015).

Some challenges in accessing the news and information during the disasters are poor hearing and eyesight, don't have any devices or channels to assess information, having no skills in using the devices, poor signals (no internet nor radio signals), broken cell towers due to disasters, cannot read, or lack of knowledge. To manage those problems, information should be kept precise and simple. An easily understood information will be better than long detailed information. Besides the challenges in accessing information, another challenge comes from interpreting the information. Interpreting includes the capacity to take suitable action for protection. Mobility impairment sometimes happens due to difficulty in the evacuation process. Suppressed groups such as prisoners might also have less information. They might lack support in getting the information (Hansson et al., 2020). The type of hazard can affect the energy and attention of the victim. When there are simultaneous events, the energy will be drained. A disaster may have effects on economic and political aspects at once. Some steps for dealing with the disaster are prevention, response, and recovery. The media's role is very critical in all of that steps. Any causes of the disaster usually have similar type dealing steps (Hansson et al., 2020).

5. Conclusion

In conclusion, the media's role is essential in disseminating information, solutions, and emotions among people during a disaster. Therefore, the language and communication type must be carefully selected to deliver precise information at the right time. Monitoring, feedback, and evaluation are important things to be done in ensuring the quality of credible information dissemination. This mechanism is very essential to keep the credibility of the information. Reviewing before sharing is also critical. A one-door policy must be implemented to ensure the same information for every level of society. Future research should include media usage in disseminating information during the disaster.

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