

Review

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[Desi Natalia Trijayanti Idris](#) * and [Srinalesti Mahanani](#)

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Review

Spiritual Aspects of Community in Preparedness to Face Earthquake Disasters: Literature Review

Desi Natalia Trijayanti Idris * and Srinalesti Mahanani

STIKES RS Baptis Kediri Jl. Mayjend. Panjaitan No. 3B Kediri 64131 Telp. (0345) 683470

* Correspondence: idrisdede87@gmail.com

Abstract

Introduction: Community preparedness for earthquakes is a crucial aspect of disaster risk reduction (DRR). Spiritual factors are considered a component that influences how communities perceive risks, respond to threats, and recover after a disaster. **Research Method:** This study aims to analyze the role of community spiritual aspects in earthquake preparedness through a review of international and national literature published in 2010–2024. **Result:** The results of the study show that spirituality plays a role in shaping risk perception, increasing psychological coping abilities, strengthening social capital, expanding the function of religious institutions, and supporting the post-disaster recovery process. **Conclusion:** Integrating a spiritual approach into community-based DRR programs can be an effective strategy in strengthening the social and psychological resilience of communities living in earthquake-prone areas.

Keywords: spirituality; disaster preparedness; community; earthquake; resilience; literature review

Introduction

Earthquakes are one of the most destructive forms of natural disaster and can occur without clear warning (UNDRR, 2020). The impact of earthquakes not only causes physical damage but also affects the psychological, social, and spiritual well-being of affected communities (Paton, 2019). Community preparedness is a crucial factor in minimizing losses from earthquakes, as communities are the first to respond to emergencies (Aldrich & Meyer, 2015). In religious communities, spirituality is often a source of strength, meaning, and a coping mechanism in the face of disaster uncertainty (Koenig, 2012). Furthermore, spirituality has been shown to shape individual and community resilience in the face of disaster threats (Pargament, 2013). In the past two decades, there has been growing attention to the role of spiritual and religious factors in shaping community resilience (Gaillard & Texier, 2013). Spirituality can provide meaning, hope, and psychological strength during disasters (Koenig, 2012). In addition, communities that have a strong spiritual life often exhibit a more solid social structure, making them better prepared to face threats (Aldrich & Meyer, 2015).

The study of spiritual aspects is becoming increasingly important because spirituality has been shown to influence how communities assess disaster risk (Gaillard & Texier, 2013). Studies show that risk perceptions influenced by religious beliefs can increase community motivation to undertake preparedness measures (Rokib, 2019). Other research reports that spiritual practices such as prayer, rituals, and strengthening religious values contribute to community emotional stability during earthquake threats (Gerber et al., 2021). Furthermore, communal spiritual activities can strengthen social capital, which plays a crucial role in mobilization and collaboration during disasters (Aldrich, 2012). Thus, spirituality is a component worthy of study in understanding community preparedness for earthquake disasters (Schipper, 2015).

Historically, earthquake-prone regions around the world, including Indonesia, have demonstrated that community responses to disasters are often influenced by religious and spiritual values that have been passed down through generations (Gaillard & Texier, 2013). In several major earthquakes, such as the 2006 Yogyakarta and 2018 Palu earthquakes, communities have used

spiritual values as a source of explanation and strength to recover from trauma (Rokib, 2019). Research has noted that during the pre-disaster phase, communities that embrace spirituality as a foundation for their lives demonstrate greater vigilance and preparedness than communities that do not integrate religious values into their social lives (Paton, 2019). During the emergency response phase, prayer and spiritual rituals are often the community's first response, aimed at providing calm and reducing panic (Gerber et al., 2021). Post-disaster, spirituality plays a crucial role in helping victims find meaning, accept the situation, and begin the psychological healing process (Koenig, 2012). This chronology shows that spirituality is present at all stages of a disaster, thus becoming an important foundation in understanding community resilience (Pargament, 2013).

For the predominantly religious Indonesian people, spiritual aspects are often fundamental to understanding natural events, including disasters. The belief that disasters are a test, destiny, or spiritual calling can influence how they respond to earthquake threats (Rokib, 2019). Integrating spiritual aspects into disaster risk reduction programs can be a solution to improve community preparedness (Schipper, 2015). The involvement of religious leaders in disaster preparedness education has proven effective in increasing community acceptance of disaster information (Gaillard & Texier, 2013). Furthermore, DRR programs that incorporate spiritual values can strengthen social capital by increasing trust, solidarity, and community cooperation (Aldrich & Meyer, 2015). Spiritual-based interventions can also support community psychological coping in the face of earthquake threats (Gerber et al., 2021). Thus, integrating spirituality into DRR policies and programs can enhance community resilience holistically, encompassing physical, social, emotional, and spiritual aspects (Pargament, 2013). Therefore, a systematic study of the role of spiritual aspects in community preparedness for earthquakes is crucial to support the development of DRR policies and interventions.

Material and Methods

Study Design This study uses a systematic literature review approach to identify, assess, and synthesize scientific findings related to the role of community spiritual aspects in earthquake disaster preparedness (Snyder, 2019). This approach was chosen because it is able to provide a comprehensive overview of empirical evidence and theoretical concepts that have developed in the last two decades (Grant & Booth, 2009). **Data Sources** are Articles collected from international and national databases, namely Scopus, Web of Science, PubMed, Google Scholar, and Garuda Ristekbrin, so that the scope of the study includes global literature and the local Indonesian context (Cooper, 2016). **Inclusion Criteria** in this study are Literature included if it meets the criteria of Published between 2000–2024, Examining spirituality, religiosity, or community beliefs, Related to disaster preparedness, especially earthquakes, Peer-reviewed scientific articles, academic books, or official agency reports while **Exclusion Criteria** in this study are Articles that are not available in full-text, do not include community aspects, Focus on non-earthquake disasters without spiritual relevance. The analysis was conducted using the thematic synthesis method, which grouped the findings into main themes: the role of spirituality in risk perception, spirituality as a factor in community resilience, spirituality in preparedness behavior, and spirituality in post-disaster recovery and adaptation. This method is widely used for qualitative and mixed-method literature analysis (Thomas & Harden, 2008).

Result

1. Community Spirituality and Disaster Interpretation

Community spirituality is a collectively held set of values and beliefs that serve as guidelines for social life. Pargament (2011) explains that spirituality is the search for meaning connected to a transcendent power and defines spirituality as elements related to the search for meaning, connection to a transcendent power, and moral values. In a community context, spirituality can be a source of psychological strength and social solidarity. In the context of disasters, communities often associate earthquakes with moral or spiritual meanings and emphasize that spirituality is often part of people's

interpretations of disaster phenomena, including earthquakes (Gaillard & Texier, 2010). Research by Hapsari & Sawitri (2020) found that religious beliefs influence disaster perceptions and preparedness in various communities. Afnan & Raharjo (2022) demonstrated through a systematic review that religious coping has a significant influence on emotional and behavioral preparedness in the face of disasters.

2. Spirituality as a Coping Mechanism

Literature shows that spiritual coping helps communities recover more quickly from psychological trauma (Pargament, 2011). Spiritual coping is a strategy communities rely on to reduce stress during and after disasters. Spiritual coping has been shown to reduce stress, increase calmness, and help individuals make rational decisions during disasters. This spiritual coping includes prayer, meditation, religious rituals, and the religious meaning of the disaster (Pargament, 2013). In emergency and post-disaster situations, spirituality is widely used as a coping strategy to reduce stress, anxiety, and trauma. Furthermore, spiritual practices such as prayer, meditation, or religious rituals have been shown to increase calm and clarity in emergency decision-making (Koenig, 2012). Studies show that religious practices, communal prayer, and spiritual support from religious leaders can increase emotional calm and resilience. Koenig (2020) states that spirituality is one of the most powerful coping mechanisms in crisis situations. Activities such as prayer, communal rituals, and support from religious leaders help reduce anxiety, trauma, and stress after a disaster. In the context of earthquakes, communities often hold religious activities as a form of emotional recovery and solidarity. This psychological strength enhances a community's ability to bounce back, or resilience. Studies show that individuals with high levels of spirituality have better emotional regulation and lower anxiety levels during earthquake disasters (Gerber et al., 2021).

3. Spirituality Influences People's Risk Perception

Many communities interpret earthquakes as spiritual phenomena, "warnings" from nature, or divine will, so their risk perceptions are shaped by religious beliefs (Gaillard & Texier, 2010). Research shows that communities who believe disasters are "tests" or "warnings" tend to be more vigilant and prepared. Several studies have shown that spiritual beliefs can shape how individuals perceive disaster risk, including the belief that disasters are part of a divine plan or a spiritual test (Gaillard & Texier, 2013). Spirituality-based risk perceptions can increase vigilance or, conversely, reduce the urgency to take mitigation actions. Spirituality influences how communities understand earthquake hazards and determines response behavior. Risk perceptions influence community preparedness in the face of earthquakes (Paton, 2019). Certain religious beliefs can reduce anxiety because individuals feel the event is under God's control (Koenig, 2012). In Indonesia, religious communities tend to be more psychologically prepared because they accept earthquakes as part of divine destiny (Triyono, 2018). In Indonesia, public risk perception is often linked to religious values and spiritual interpretations of natural phenomena (Rokib, 2019). This influences motivation to participate in DRR programs. Risk perception directly influences mitigation actions. Sunarto (2019) showed that fatalistic beliefs decrease preparedness. In a study by Bhat & Khan (2021), fatalism was found to be negatively correlated with mitigation behavior across religious communities. Conversely, adaptive spiritual understandings such as striving for and responsibility to protect nature increase participation in disaster mitigation actions (Mulyani & Hartono, 2019; Kariatli & Wardhani, 2021). A study by Wijaya & Pramudito (2020) also showed that local beliefs influence earthquake preparedness in Java. This spiritual understanding can strengthen inner peace and reduce anxiety, enabling more rational action during disasters (Koenig, 2012).

4. Spirituality Serves as a Source of Community Resilience and Encourages Preparedness Behaviors

Spirituality has been shown to be a source of emotional and social strength in the face of disaster threats. According to Koenig (2012), communities that engage in collective spiritual activities after a disaster tend to have lower rates of depression and PTSD. Communal rituals and communal prayer also provide a sense of normalcy and social connectedness. Koenig (2020) emphasized that

spirituality strengthens mental health during disasters. Religious beliefs help communities interpret disasters positively, reduce anxiety, and strengthen hope (Pargament et al., 2005). Post-disaster, spirituality has been shown to aid the healing process by giving meaning to traumatic experiences (Pargament, 2013). Communities that practice collective worship and rituals demonstrate higher levels of resilience (Andrews et al., 2020). A study by Kang & Kim (2020) on earthquake survivors in Korea showed that spiritual well-being is a strong predictor of psychological resilience. In Indonesia, Putra & Sari (2022) found that spiritual resilience is an integral part of community resilience in disaster-prone areas. Smith & Cuthbertson (2021) also highlight the role of spirituality in strengthening solidarity and collective efficacy. In many cases, religious leaders serve as agents of mitigation messages and play a crucial role in influencing community behavior (Mercer et al., 2010). The presence of spiritual leaders strengthens the legitimacy of disaster socialization and education (Gaillard & Mercer, 2013). In some communities, religious activities are used as a means of integrating preparedness messages, such as communal prayer and strengthening social solidarity (Abarquez & Murshed, 2004). Spirituality also helps build new meaning in life after loss (Smith et al., 2013). Spirituality plays a significant role in long-term recovery. Earthquake victims who incorporate spiritual aspects into their healing process demonstrate higher levels of post-traumatic growth. Studies in earthquake-affected areas show that communities that utilize spiritual beliefs tend to have higher levels of post-traumatic growth (Gerber et al., 2021).

5. The Role of Religious Figures and Religious Institutions

Research by Effendi & Karim (2023) shows that religious institutions strengthen the socialization of earthquake mitigation in rural areas. Religious leaders are often more trusted than government officials. Hakim & Latief (2020) note that religious organizations have significant capacity in disaster management, especially during the response and recovery phases. Suharyanto (2021) found that religious ceremonies can be an effective medium for disaster education. Communities with high social capital have been shown to respond and recover more quickly after an earthquake (Aldrich, 2012). Social capital is a crucial factor in community preparedness (Aldrich & Meyer, 2015). Spiritual and religious activities such as religious studies, worship services, or communal rituals serve to strengthen relationships between residents, increase solidarity, and expand social support networks (Williams et al., 2013). Religious institutions often serve as information centers and community gathering places, thus playing a significant role in enhancing preparedness. Religious institutions hold a strategic position in supporting DRR due to the trust they command (Gaillard & Texier, 2013). Studies show that religious leaders are often trusted to provide safety advice, making DRR messages more readily accepted when delivered through a spiritual approach (Schipper, 2015). Religious leaders are effective in conveying preparedness messages, expanding volunteer networks, and organizing humanitarian aid. Furthermore, houses of worship often serve as evacuation sites during earthquakes (Williams et al., 2013).

6. Positive and Negative Impacts of Spirituality in Preparedness

Positive impacts that can arise are increasing collective efficacy or mutual trust, encouraging environmental care behavior as part of moral teachings, strengthening solidarity and mutual cooperation in evacuation and emergency response and reducing anxiety through religious support and the negative impacts that can be caused by fatalism ("everything is predestined"), ignoring technical mitigation because they think prayer is enough, resistance to innovation in mitigation technology and excessive dependence on religious figures who do not have a scientific basis for disasters.

Discussion

1. Integrating Spirituality into Disaster Mitigation

Findings indicate that spirituality is an inseparable aspect of community life, especially in developing countries with high levels of religiosity like Indonesia (Triyono, 2018). Unfortunately, current mitigation policies still focus on technocratic approaches and minimally incorporate cultural

and spiritual approaches (Gaillard & Mercer, 2013). Integration of spirituality can be achieved through empowering religious leaders in disaster education, spiritual-based training modules, and community-based moral support. The study's findings indicate that spirituality can serve as psychosocial capital to support community preparedness. By integrating spiritual values, DRR programs can be more widely accepted (Schipper, 2015). Spirituality does not stand alone but interacts with social, cultural, and psychological factors. This combination strengthens community resilience, especially in areas with strong religious structures (Aldrich & Meyer, 2015).

2. The Role of Religious Figures and Traditional Leaders

Religious leaders can be key influencers in shaping preparedness behavior, particularly in rural areas (Mercer et al., 2010). Their involvement not only increases the legitimacy of the program but also builds community trust (Gaillard & Texier, 2010). Mitigation training for religious leaders needs to be strengthened so they can deliver disaster messages scientifically and in a way that aligns with the community's spiritual context.

3. Implementation Challenges

Fatalistic spiritual interpretations can reduce motivation to undertake technical mitigation measures (Paton et al., 2010). Furthermore, mitigation programs often fail to consider the diversity of belief systems within communities. Strategies that are inclusive, respectful of plurality, and grounded in scientific principles are needed.

4. Implications for Policy

Integrating spiritual aspects can strengthen community resilience by increasing social cohesion, emotional resilience, and motivation for adaptation. Local governments and the National Disaster Management Agency (BNPB) can incorporate spiritual aspects into Disaster Resilient Village (DV) strategy guidelines, school education modules, and disaster cadre training. Policy recommendations include involving religious leaders in DRR education, incorporating spiritual modules into trauma healing programs, and developing DRR based on local wisdom and religion.

The literature shows that community spirituality is a key factor in earthquake disaster preparedness. This aspect influences risk perception, psychological readiness, and mitigation behavior. However, the success of integrating spirituality into preparedness efforts depends heavily on how these spiritual values are understood and practiced. Adaptive spirituality, which emphasizes the balance between faith and effort, can strengthen mitigation. This approach can be combined with disaster education through religious leaders, lectures, or religious activities. Conversely, fatalistic spirituality needs to be addressed through disaster literacy programs that are sensitive to local culture and beliefs. Efforts by the government and relevant institutions can be strengthened by partnering with religious leaders to deliver mitigation messages, making information more readily accessible to communities. Integrating spirituality into disaster management also aligns with the Sendai Framework (UNDRR, 2015), which emphasizes the importance of community participation and local wisdom.

Conclusion

Community spirituality plays a significant role in earthquake preparedness. Spirituality can strengthen resilience and enhance social solidarity, but it also has the potential to undermine mitigation efforts if it tends to be fatalistic. Spirituality influences risk perception, enhances psychological coping, strengthens social capital, and supports post-disaster recovery. Therefore, disaster risk reduction efforts need to integrate adaptive and productive spiritual values. A collaborative approach between government, community, and religious leaders is key to building stronger and more sustainable community preparedness. Spirituality needs to be integrated into community-based earthquake mitigation programs to build more comprehensive, holistic, and culturally appropriate preparedness. A cultural approach and collaboration with religious leaders are crucial for the success of community-based mitigation programs. Therefore, a spiritual-based

approach needs to be integrated into DRR programs, particularly in religious communities or those where spirituality is a foundation of daily life.

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