An Examination of the Correlation Between Disaster Awareness and Psychological Preparedness: Advancing Disaster Education in Undergraduate Curricula

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Abstract

This study examines the relationship between disaster awareness and psychological preparedness among undergraduate students, emphasizing the need to integrate disaster education across all academic disciplines. While previous research has primarily focused on disciplines such as medicine, engineering, and emergency response, this study argues that disaster preparedness should be a fundamental part of higher education for students in all departments. Data were collected from 412 undergraduate students in Turkey using the Disaster Awareness Scale and the Psychological Preparedness for Disaster Threat Scale. A correlational research design was employed, and Pearson correlation analysis was conducted to assess the relationship between the two variables. The findings indicate a strong positive correlation, suggesting that students with higher disaster awareness exhibit greater emotional resilience and crisis management abilities. Additionally, students with prior disaster education demonstrated significantly higher preparedness levels, reinforcing the importance of structured educational interventions. However, using a convenience sampling method may limit the generalizability of the findings. Also, the study focuses on undergraduate students in Turkey, which may not fully represent other populations. This study contributes to the literature by providing empirical evidence supporting the expansion of disaster education beyond specialized fields. Emphasizing the role of psychological preparedness in disaster awareness offers valuable insights for curriculum developers, policymakers, and educators seeking to enhance disaster resilience.

Keywords: disaster awareness, disaster education, psychological preparedness, undergraduate students

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Introduction

Natural disasters have long been recognized as events with wide-ranging consequences for individuals and societies. In Turkey, disasters such as earthquakes, floods, and wildfires continue to result in serious harm, with recent examples like Kahramanmaraş earthquakes leaving thousands dead and causing billions of dollars in damage (Buyukoglu et al., 2024). These events highlight the economic and infrastructural devastation and the deep psychological impact on affected communities (Cinaroglu, 2024). Disaster awareness, which refers to individuals' understanding of natural hazards and their potential impacts, is vital in preparing for such events. However, studies suggest that awareness alone is insufficient. Psychological preparedness—the ability to regulate emotions, make stressful decisions, and recover mentally—has emerged as an essential yet underexplored component of disaster education (Saeed & Gargano, 2022; Zulch et al., 2012).

Despite its importance, psychological preparedness is often overlooked in Turkey's disaster management framework, which has historically emphasized post-disaster response rather than proactive risk mitigation and education (Barış, 2009). Moreover, university disaster education is frequently limited to disciplines like medicine or engineering, neglecting students from other fields who are equally at risk (Patel et al., 2017).

This study investigates the relationship between disaster awareness and psychological preparedness among undergraduate students in Turkey. By exploring how different dimensions of awareness—such as pre-disaster behaviors, post-disaster responses, and misconceptions—relate to students' emotional readiness, this research aims to provide evidence for a more holistic and inclusive approach to disaster education. In doing so, it contributes to the growing body of literature that advocates for integrating psychological preparedness into university curricula to build more resilient individuals and communities.

Literature Review

Disasters have multidimensional impacts on societies—economic, social, psychological, and environmental. In recent years, research has emphasized the growing need for structural preparedness and fostering individual-level awareness and psychological readiness (Hoffmann & Blecha, 2020). Disaster awareness is the knowledge and understanding individuals or communities have regarding natural hazards and their potential consequences (AFAD, n.d.). It includes knowing how to behave before, during, and after a disaster, and recognizing misinformation or misconceptions that may hinder effective response (Nogami & Yoshida, 2014).

Studies have shown that higher levels of disaster awareness contribute to better preparedness and risk-reducing behaviors (Titko & Ristvej, 2020). Cai et al. (2023) found that social environment and personal cognition significantly influence individuals' intentions to mitigate disaster risks. In the context of Turkey, however, disaster education has often remained limited to post-disaster response rather than preventive awareness (Barış, 2009). This gap is particularly evident in higher education settings, where disaster education is usually confined to disciplines such as medicine or engineering (Patel et al., 2017), neglecting the broader university population.

Psychological preparedness is another essential yet underrepresented concept in disaster literature. It refers to an individual's ability to anticipate and mentally cope with a disaster

through emotional regulation, decision-making under stress, and cognitive resilience (Zulch et al., 2012). Saeed and Gargano (2022) emphasized that psychological distress during disasters can hinder rational thinking and delay effective action, making psychological readiness a critical component of overall disaster preparedness. Despite this, most disaster education programs do not explicitly incorporate training or awareness related to emotional resilience (Morgado, 2020).

Furthermore, recent research highlights the dangers of false disaster beliefs and myths—such as panic, looting, and helplessness—that often spread through the media and public discourse. These beliefs can negatively influence individuals' risk perceptions and reduce their preparation motivation (Nogami & Yoshida, 2014). Integrating myth-busting and evidence-based communication into disaster education programs has been proposed as a solution (Öcal et al., 2016).

Qing et al. (2021) also suggest that preparedness levels vary depending on geographical features and environmental risks, reinforcing the need for context-specific disaster education strategies. Similarly, Qing et al. (2021) demonstrated that individuals with high disaster awareness reported greater life satisfaction and mental health, showing the broader well-being implications of preparedness.

Overall, the literature supports the integration of disaster awareness and psychological preparedness within university education. An interdisciplinary and inclusive approach that addresses factual knowledge and emotional resilience is needed to foster a disaster-resilient society (Rosenberg et al., 2022). This study builds on these findings by exploring the relationship between these two concepts among undergraduate students in Turkey, aiming to inform more holistic disaster education policies and practices.

Results

This study investigated the relationship between disaster awareness and psychological preparedness among 412 undergraduate students from diverse academic departments and year levels. Most participants were from the Social Sciences and Humanities (49.76%) and were in their junior year (49.76%).

Descriptive statistics showed moderate to high levels of disaster awareness. The highest average score was in the Disaster Education Awareness sub-dimension *(M* = 56.50, *SD* = 4.41), followed by Pre-Disaster Awareness (*M* = 34.34, *SD* = 3.48), False Disaster Awareness (M = 33.89, SD = 4.16), and Post-Disaster Awareness (*M* = 22.65, *SD* = 4.87). The overall Disaster Awareness Scale score was 147.37 (*SD* = 12.11).

Psychological preparedness scores were also moderate. Participants scored highest in managing the external situational environment (*M* = 26.19, *SD* = 4.89), followed by emotional and psychological response management (*M* = 25.51, *SD* = 6.74), and social environment management (*M* = 8.80, *SD* = 1.88). The total average for the Psychological Preparedness Scale was 60.50 (*SD* = 11.36).

Correlation analysis revealed significant positive relationships between disaster awareness and psychological preparedness. Specifically, disaster education awareness ($r = .257$, $p < .001$), pre-disaster awareness ($r = .257$, $p < .001$), false-disaster awareness ($r = .221$, $p < .001$), and post-disaster awareness ($r = .550$, $p < .001$) were all positively correlated with

psychological preparedness. Notably, post-disaster awareness showed the strongest correlation.

These findings suggest that increasing students' awareness at all phases of a disaster—before, during, and after—can improve their emotional and psychological readiness. Contrary to expectations, false-disaster awareness also showed a positive correlation, indicating that even inaccurate or partial information may contribute to a perceived sense of preparedness.

Interpretation of Findings

This study explored the relationship between disaster awareness and psychological preparedness for disaster threats. The findings revealed that various aspects of awareness—including disaster education, pre-disaster, false disaster, and post-disaster awareness—are significantly related to psychological preparedness factors such as management of the external situational environment, emotional and psychological responses, and social environment.

The results showed a significant relationship between disaster education awareness and all sub-factors of psychological preparedness. Individuals with disaster education awareness are more capable of managing their external environment during a disaster. It aligns with Hoffmann and Blecha (2020), who found that education improves preparedness. Aldemir (2023) also emphasized that disaster education supports effective resource management, including post-disaster aid distribution. Moreover, disaster education awareness was positively related to managing emotional responses. It implies that education may enhance emotional resilience, as Merdjanoff et al. (2022) and Iseri and Baltaci (2024) suggested. Even though Morgado (2020) did not explicitly focus on education, resilience was identified as a key factor in coping with disasters. Disaster education also plays a critical role in managing the social environment. Cong et al. (2023) found that social participation strengthens preparedness. Similarly, Cai et al. (2023) linked social norms and trust to cautious behavior. These findings support the idea that disaster education fosters stronger social ties and increases resilience. Seale et al. (2022) emphasized that community leaders' disaster knowledge contributes to collective preparedness. In addition, Breen et al. (2024) noted that educating youth helps boost their engagement with community safety.

A significant correlation was found between pre-disaster awareness and the ability to manage the external environment. People who are aware of disasters tend to use resources more effectively. The recent Turkish earthquakes showed the economic impact of disasters, reinforcing the need for proactive planning (Buyukoglu et al., 2024). Upadhyay et al. (2022) argued that agile planning enhances disaster response if implemented before the event. However, Johar et al. (2022) showed that awareness alone does not guarantee economic protection, especially for vulnerable populations. Barış (2009) also pointed out the limitations of centralized disaster strategies in Turkey. Emotionally, pre-disaster awareness contributes to psychological preparedness. Morgado (2020) emphasized the need for emotional regulation. However, awareness alone is insufficient. Cinaroglu (2024) found that psychological stress persisted despite awareness efforts. Even trained teams showed PTSD symptoms (Iseri & Baltaci, 2024). Therefore, awareness should be supported with mental health services. Socially, pre-disaster awareness helps individuals better utilize social support. Gim and Shin (2022) emphasized the role of social links in recovery. However, Yabe and Ukkusuri (2020) noted that wealth disparities affect people's acting ability. Barış (2009) also noted that Turkey's centralized system might hinder local participation. Awareness and

preparedness go hand-in-hand, but other factors such as social equity and psychological support must be considered (Güzel et al., 2024; Kyne, 2023; Qing et al., 2021).

The study found a positive relationship between false disaster awareness and psychological preparedness. It contradicts Nogami and Yoshida (2014), who argue that false information distorts risk perception. The current results suggest that exposure to exaggerated risks in the media may lead people to be overly cautious, increasing their preparedness levels—though based on inaccurate information. People with false awareness may still manage emotions better due to increased perceived risk. Tsai (2010) supports the idea that integrating beliefs and knowledge enhances understanding, which may explain this finding. However, while false information may create a sense of preparedness, it lacks scientific grounding and may fail in real disaster situations.

Post-disaster awareness was positively linked to psychological preparedness. Those with post-disaster awareness better manage external conditions and develop strategies. Seale et al. (2022) and Sloggy et al. (2021) confirmed that post-disaster information boosts environmental control and broader awareness, such as climate policy support. A significant connection was also found between post-disaster awareness and emotional response. While Merdjanoff et al. (2022) note the complex psychological impact of disasters, the current study suggests that post-disaster mindfulness contributes to readiness. However, this may vary depending on the disaster type. Regarding the social environment, post-disaster awareness supports social management. However, Berrebi et al. (2020) observed that internal collaboration may decline while dependency on external groups rises. It highlights the multifaceted nature of social ties post-disaster. Still, the positive correlation found in this study suggests that awareness helps foster supportive environments.

Conclusion

The findings emphasize the value of disaster education in fostering psychological preparedness. As theory alone is insufficient, disaster education must include simulations and hands-on training (Hasan et al., 2022; Sekerci et al., 2023). AFAD (n.d.) stresses the importance of the first 72 hours post-disaster, making practical training essential.

Psychological components should be integrated into curricula to reduce anxiety and build mental strength (Mishra & Suar, 2011). Such education is vital, especially for medical and nursing students (Erkin et al., 2024), but it should be mandatory for all students (Muttarak & Pothisiri, 2013).

Disaster education must be cross-disciplinary. Students from all backgrounds benefit from broader perspectives (Konur et al., 2024). Psychology, sociology, and public health must be included.

Digital tools like mobile apps, AI-based content, and simulations can enhance engagement and preparedness (Kahraman & Gülaçtı, 2023; Subarno & Dewi, 2022). Technology makes disaster education accessible and scalable.

Disaster education should reach communities, not just students. Schools, families, and local governments must collaborate (AFAD, n.d.). Community exercises can foster resilience.

Based on findings, disaster education should include drills and simulations, field studies and project-based learning, psychological preparedness training, and technology-enhanced learning.

Together, these contribute to resilience, reduce trauma risk, and create supportive environments. This study shows awareness supports preparedness, though causality is not claimed. Still, awareness remains a critical part of broader disaster strategies.

Recommendations for Further Research

This study investigates the best practices for disaster education on undergraduate students' awareness and psychological preparedness based on the relationship between disaster awareness and psychological preparedness.

Effective disaster education programs can increase personal and community readiness. Although the literature has already highlighted the significance of disaster education for health departments, similar training is required in other departments at the university level. It should be emphasized that these findings have no clear cause-and-effect relationship.

The results suggest that people's ability to manage psychological readiness may be correlated with their awareness of disasters, but further study is necessary to understand this relationship fully. Effective disaster education programs can potentially increase people's psychological readiness by enhancing their awareness. Additionally, all findings in this study are suitable for the selected sample. It may not be generalizable to the entire population. Therefore, in the future, experimental and longitudinal studies should be conducted with other groups representing each university department to clarify this relationship.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

The author declares that Grammarly, an AI-assisted writing software, was used in proofreading and refining the language used in the manuscript. The usage was limited to correcting grammatical and spelling errors and rephrasing statements for accuracy and clarity. The author further declares that, apart from Grammarly, no other AI or AI-assisted technologies have been used to generate content in writing the manuscript. The ideas, design, procedures, findings, analyses, and discussion are originally written and derived from careful and systematic conduct of the research.

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