

Women's Psychological Preparedness For Disaster Risk: The Case Of Türkiye

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Abstract

Objective:

This study aimed to evaluate the effectiveness of a psychoeducation program designed to enhance women's psychological preparedness for disaster risk.

Methods:

A quasi-experimental pretest–posttest repeated-measures intervention design was employed. The study sample consisted of 60 women (experimental group = 30; control group = 30) who were either employed at or regularly receiving training from the Izmir Maturation Institute, affiliated with the Ministry of National Education in Türkiye. Participants were selected using a simple random sampling method. The experimental group received the "Psychoeducation Program for Women's Psychological Preparedness for Disaster Risk," whereas the control group did not receive any intervention. The Psychological Preparedness for Disaster Threat Scale was administered as a pretest, posttest, and follow-up test three months after the completion of the intervention. The psychoeducation program was delivered face-to-face over a one-month period.

Results:

The findings revealed that the posttest and follow-up mean scores of the experimental group were significantly higher than their pretest scores. Moreover, the posttest and follow-up scores of the experimental group were significantly higher than those of the control group, indicating a sustained positive effect of the psychoeducation program.

Conclusion:

The results demonstrate that the psychoeducation program was effective in improving women's psychological preparedness for disaster risk. Strengthening women's preparedness contributes not only to individual resilience but also indirectly enhances disaster preparedness within the broader society.

Key words: Disaster, women, physical preparedness, psychological preparedness, psychiatric nursing

Introduction

Disasters are defined as natural, technological, or human-induced events that result in physical, economic, and social losses affecting all or specific segments of society, disrupt normal life and human activities, and exceed the coping capacity of the affected community (AFAD, 2022). In recent years, the frequency, severity, and intensity of disasters worldwide have increased to alarming levels. In February 2023, Türkiye experienced a major disaster when earthquakes centered in Kahramanmaraş led to the declaration of 17 provinces as disaster areas, resulting in the deaths of more than 50,000 individuals and injuries to over 100,000 people (EM-DAT, 2023).

Psychological preparedness for disasters plays a crucial role in protecting individuals from the adverse effects of such events and serves as a fundamental component of physical preparedness. However, existing policies and research predominantly focus on physical disaster preparedness, while psychological aspects remain relatively underemphasized (McCabe et al., 2012; McCabe et al., 2013). Psychological preparedness is essential for individuals to effectively manage and mitigate the psychological consequences of disasters. Research indicates that psychological preparedness for disasters comprises at least two core mental dimensions: cognitive processes, which include accurate information processing and adaptive responses to threat situations, and emotional processes, which involve self-awareness and emotional regulation (Boylan & Lawrence, 2020). Psychological preparedness for disaster risk can be conceptualized as a two-stage process involving knowledge management followed by emotion regulation. Adequate psychological preparation enhances individuals' capacity to cope with stress, increases self-confidence, promotes emotional control, and facilitates effective decision-making during disaster situations. Consequently, pre-disaster psychological preparation enables individuals to develop adaptive coping strategies and reduces the likelihood of psychological and physical harm during and after disasters (Zakour, 2023). Psychological preparedness interventions should be tailored according to disaster types, cultural contexts, and available resources. Evidence suggests that vulnerable groups within society are disproportionately affected by disasters, necessitating targeted interventions, and women constitute one of these high-risk groups (Altun, 2016; Jones & Schmidt, 2013). During and after disasters, women face heightened risks due to factors such as increased mortality, inadequate shelter, limited access to clean water, security concerns, disruptions in education and healthcare services, pregnancy- and childbirth-related challenges, and insufficient consideration of cultural sensitivities by aid providers. Additionally, fragmented family structures and altered family roles further exacerbate women's vulnerability, increasing their risk of psychological disorders (Pincha, 2009). Women's coping capacity during disasters may also be constrained by limited swimming or climbing skills and restricted mobility associated with traditional clothing, which further elevates their risk of harm (Pincha, 2009). Moreover, disasters often compel men to migrate in search of employment, leaving women to manage the consequences of disasters while assuming increased domestic and caregiving responsibilities. These compounded burdens may lead to a range of mental health problems among women. Given these challenges, women's psychological preparedness should be a central focus of disaster preparedness strategies. A women-centered approach should address two interrelated dimensions: first, reducing disaster-related risks by considering women's specific vulnerabilities, and second, empowering women to actively participate in disaster preparedness, response, and recovery processes by utilizing their skills and potential (Işık et al., 2015). In Japan, women's traditional responsibilities in household management and child-rearing have enabled them to play a significant role in disaster preparedness and response. During and after the East Japan Earthquake, women were prominently involved in response and reconstruction efforts, highlighting their critical contribution to disaster risk reduction (Gündüz, 2022; Petraroli & Baars, 2022). Consequently, Japanese national disaster plans published in 2005 and 2010 emphasized disaster prevention

and the promotion of gender equality. In Türkiye, awareness of women's importance as a resource in disaster management emerged following the 1999 Gölcük earthquake, which resulted in approximately 20,000 fatalities. Women's active involvement in relief efforts during this disaster underscored the necessity of incorporating gender-sensitive approaches into disaster planning, leading to increased participation of women in disaster preparedness initiatives in subsequent years (Gündoğdu & Işık, 2008).

Disasters adversely affect societal well-being due to the psychological problems experienced during and after such events. In this context, psychiatric nurses play a vital role in disaster preparedness and intervention, given their expertise in mental health promotion and protection. Psychiatric nurses are responsible for developing preventive measures and intervention strategies not only for the general population but also for vulnerable groups, thereby contributing to public mental health before, during, and after disasters (Alaçam & Yılmaz, 2023). In this study, a psychoeducation program aimed at enhancing women's psychological preparedness for disaster risk was implemented to strengthen both individual and societal disaster resilience. Through this psychoeducation program, women are expected to support themselves and their communities by actively engaging their social environments in disaster risk reduction and preparedness processes. Furthermore, the coping skills acquired through the program may facilitate more effective organization during survival and recovery phases following disasters. Ultimately, women may transition from being perceived as passive victims to becoming empowered individuals capable of actively contributing to disaster management through their strengths and competencies.

Purpose And Hypotheses

The primary aim of this study was to enhance women's psychological preparedness for disaster risk through a structured psychoeducation program. Within this framework, the study sought to examine the effectiveness of the psychoeducation intervention on women's levels of psychological preparedness for disaster threats. The following hypotheses were tested:

H1: The psychoeducation program designed to improve women's psychological preparedness for disaster risk has a significant effect on women's psychological preparedness levels.

H1-1: The posttest scores of women who participate in the psychoeducation program for psychological preparedness for disaster risk will be significantly higher than their pretest scores.

H1-2: The follow-up test scores obtained three months after the completion of the psychoeducation program will be significantly higher than the posttest scores of the participating women.

H1-3: The psychological preparedness scores of women who participate in the psychoeducation program will be significantly higher than those of women who do not participate in the program.

Methods

Study Design

This study employed a pretest–posttest repeated-measures quasi-experimental intervention design.

Setting and Timeframe

The study was conducted at the Izmir Maturation Institute, affiliated with the Ministry of National Education of the Republic of Türkiye, between April 1, 2024, and April 1, 2025.

Population and Sample

The study population consisted of 317 women who were either

employed at or regularly receiving education from the Izmir Maturation Institute. The study sample comprised 60 women who met the inclusion criteria and consented to participate. Participants were randomly assigned to either the experimental group ($n = 30$) or the control group ($n = 30$) using a simple random sampling method.

Sample size determination was performed using G*Power version 3.1. Based on a two-group repeated-measures design with a Type I error rate of 0.05, a statistical power of 0.95, and a medium effect size (0.25), the minimum required sample size was calculated as 54 participants. To account for potential data loss, the sample size was increased by 10%, resulting in a final sample of 60 participants.

Inclusion and Exclusion Criteria

Inclusion criteria were voluntary participation, female gender, ability to read and write Turkish, and age between 18 and 65 years. Individuals who did not meet these criteria or declined participation were excluded from the study.

Data Collection Procedure

Data were collected using a face-to-face interview method after participants provided written informed consent. Prior to the intervention, participants completed an Introductory Information Form developed by the researchers and the Psychological Preparedness for Disaster Threat Scale. The same scale was administered immediately after the intervention and again three months later as a follow-up assessment. This approach allowed for the evaluation of both immediate and sustained effects of the one-month psychoeducation program.

Data Collection Instruments: Two instruments were used for data collection: **Introductory Information Form:** This form consisted of 14 items designed to collect sociodemographic and disaster-related information, including age, marital status, educational level, occupation, economic status, place of residence, number of children, disaster experience in the area of residence, prior disaster training, involvement in disaster response, and experiences of loss related to disasters.

Psychological Preparedness for Disaster Threat Scale:

The Psychological Preparedness for Disaster Threat Scale was originally developed by Zulch et al. (2012) for use in Northern Australian communities. The Turkish validity and reliability study was conducted by Türkdoğan et al. (2023). During the adaptation process, five items were removed due to cultural irrelevance, resulting in a final scale comprising 21 items across three sub-dimensions: (1) Knowledge and Management of the External Situational Environment (9 items), (2) Management of Emotional and Psychological Responses (9 items), and (3) Management of the Social Environment (3 items). The scale uses a four-point Likert-type response format. The original internal consistency coefficient of the scale was reported as 0.95 (Türkdoğan et al., 2023). In the present study, Cronbach's alpha coefficient was calculated as 0.96, indicating a high level of internal consistency.

Intervention Content

The psychoeducation program for women's psychological preparedness for disaster risk comprised structured training sessions addressing disaster preparedness and safety, identification of support systems and access to resources, emotional and behavioral responses during disasters, self-help strategies, community support mechanisms, psychological first aid, and common psychiatric conditions that may emerge following disasters along with coping strategies. The program was delivered

over a total of 32 hours using interactive teaching methods, including lectures, group discussions, question-and-answer sessions, and case-based learning.

Data Analysis

Data analysis was conducted using SPSS for Windows version 25.0. Descriptive statistics, including frequencies, percentages, minimum and maximum values, means, and standard deviations, were used to summarize participant characteristics. Reliability analysis was performed to assess the internal consistency of the measurement instruments. The Kolmogorov–Smirnov test was used to evaluate the normality of data distribution. For non-normally distributed data, the Mann–Whitney U test was applied to compare independent groups, and the Friedman test was used for comparisons involving more than two related measurements.

Ethical Dimension

Ethical approval for the study was obtained from the Ege University Medical Research Ethics Committee on December 28, 2023 (Decision No. 23-12.1T/32). Institutional permission to conduct the study at the Izmir Maturation Institute was granted by the Izmir Governorship Provincial Directorate of National Education on February 20, 2024 (Approval No. E-12018877-604.01.02-97068663). Written informed consent was obtained from all participants prior to data collection. All procedures performed in this study were conducted in accordance with the ethical standards of the institutional and national research committees and with the principles of the Declaration of Helsinki and its subsequent amendments.

Results

A total of 60 women participated in the study, with 30 participants assigned to the experimental group and 30 to the control group (Table 1). All participants were female. No statistically significant differences were observed between the experimental and control groups with respect to age, marital status, educational level, economic status, number of children, disaster experience in the place of residence, prior disaster-related training, or experience of losing a relative in a disaster ($p > 0.05$). These findings indicate that the experimental and control groups were comparable and homogeneous at baseline. As presented in Table 2, there was no statistically significant difference between the pretest scores of the Psychological Preparedness for Disaster Threat Scale between the experimental and control groups ($p > 0.05$). Following the psychoeducation intervention, statistically significant differences emerged between the groups. The posttest scores of the experimental group were significantly higher than those of the control group ($p < 0.05$). Similarly, the follow-up test scores of the experimental group remained significantly higher than those of the control group ($p < 0.05$), indicating the sustained effectiveness of the intervention. Within-group analyses revealed statistically significant differences among the pretest, posttest, and follow-up scores of the experimental group on the Psychological Preparedness for Disaster Threat Scale ($p < 0.05$). Post hoc analyses using Bonferroni correction demonstrated that both posttest and follow-up scores were significantly higher than pretest scores. In contrast, no statistically significant differences were observed among the pretest, posttest, and follow-up scores of the control group ($p > 0.05$). Analysis of the scale sub-dimensions showed that the experimental group exhibited statistically significant improvements in all three domains: Knowledge and Management of the External Situational Environment,

Management of Emotional and Psychological Responses, and Management of the Social Environment. Posttest and follow-up scores in these sub-dimensions were significantly higher in the experimental group compared to both their pretest scores and the scores of the control group ($p < 0.05$).

Discussion

Disasters occurring worldwide have profound and lasting effects on both individual and societal mental health. These effects are particularly pronounced among vulnerable populations, including women. Due to gender-specific roles and sociocultural expectations, women are more likely to experience adverse outcomes following disasters while simultaneously serving as critical resources in disaster preparedness, response, and recovery processes. In this study, 60 women participated, and a structured psychoeducation program aimed at enhancing women's psychological preparedness for disaster risk was implemented for 30 women in the experimental group over a total of 32 hours. The findings demonstrated that participation in the psychoeducation program resulted in significantly higher psychological preparedness scores in the experimental group compared to both their baseline scores and the control group. These results indicate that the psychoeducation intervention was effective in strengthening women's psychological preparedness for disasters. The findings of this study are consistent with previous research examining the impact of disaster preparedness training on psychological readiness. Studies have reported that disaster-related education programs significantly improve both general and psychological preparedness levels (Atalay, 2024; Gandhi et al., 2021; Kitagawa, 2021). Furthermore, during the COVID-19 pandemic, interventions focusing on resilience and coping strategies were shown to enhance psychological preparedness among healthcare professionals and students (Gandhi et al., 2021). Notably, the psychoeducation program in the present study comprehensively addressed the core components of psychological preparedness, including awareness and management of the external situational environment, regulation of emotional and psychological responses, and management of the social environment. Significant improvements were observed across all these domains following the intervention. These components are essential for fostering resilience, enhancing coping skills, and enabling individuals to respond effectively to disaster-related stressors. An important contribution of this study lies in its focus on women's psychological preparedness for disaster risk. Despite women being disproportionately affected by disasters and simultaneously playing pivotal roles in disaster management, there is a scarcity of intervention-based studies targeting women's psychological preparedness in the literature. Prior research has emphasized the need for tailored interventions for vulnerable groups, particularly women (Altun, 2016; Jones & Schmidt, 2013). The participants in this study were women affiliated with the Izmir Maturation Institute, an institution established to empower women in Türkiye. Many participants had experienced the 2020 Izmir earthquake and were actively involved in skill-sharing activities within their communities. Therefore, the psychoeducation provided is likely to extend beyond individual benefits, contributing to broader community resilience in an earthquake-prone region.

CONCLUSION

Both physical and psychological preparedness for disasters are essential for women to effectively utilize their capacities and

potentials. While existing policies and research predominantly emphasize physical preparedness, psychological preparedness remains an equally critical yet underaddressed component. This study examined the effectiveness of a psychoeducation program designed to enhance women's psychological preparedness for disaster risk. The results demonstrate that psychoeducation significantly improves women's psychological preparedness, particularly in terms of awareness and management of the external situational environment, regulation of emotional and psychological responses, and management of social environments during disasters. These findings underscore the importance of incorporating psychological preparedness interventions into disaster risk reduction strategies targeting women.

Limitations Of The Study

One limitation of this study is the limited number of intervention-based studies in the literature focusing specifically on women's psychological preparedness for disasters, which restricted opportunities for direct comparison of findings.

Importance For Clinical Practice

Based on the demonstrated effectiveness of the psychoeducation program, it is recommended that psychiatric nurses integrate training on women's psychological preparedness for disasters into disaster preparedness and intervention programs. Additionally, psychological preparedness initiatives should be expanded to include other vulnerable populations, such as children and older adults, alongside women who are disproportionately affected by disaster

References

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