



The effect of psychological first aid intervention on stress and psychological resilience in volunteers participating in 2023 earthquakes centered in Kahramanmaraş, Turkey

Esra Bekircan¹ · Galip Usta¹ · Kemal Torpuş²

Accepted: 18 September 2023 / Published online: 9 October 2023

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023

Abstract

The aim of the study was to investigate the impact of psychological first aid intervention on stress and resilience in volunteers who participated in two significant earthquakes 2023 in Turkey. It is a single-blind randomized controlled trial to assess the effect of an online psychological first aid intervention on earthquake participants' stress and resilience levels. It was determined that the participants had a higher-than-average level of stress before the psychological first-aid intervention. The psychological first aid intervention group's stress level was shown to be considerably lower than the control group's. It is thought that online psychological first aid interventions should be provided for the psychological needs of the volunteers involved in disasters. A social benefit can be achieved by aiming to increase the psychological resilience levels of volunteers who take part in disasters and prevent psychological traumas.

Keywords Disaster · Psychological first aid in disasters · Earthquake · Volunteer

Introduction

Disaster is defined as any natural, technological, or human-caused occurrence that has the potential to harm civilizations, halt or disrupt normal life, and create physical, economic, and social losses that cannot be compensated for by local resources (Kadioğlu, 2008). In recent years, the effects of disasters on people have increased. Disasters negatively affect both the physiological and psychological health of people (Kukuoglu, 2018). It is known that during

or after disasters, directly affected people and other members of society are at risk of being psychologically affected negatively (Koop & Ward, 2011). For example, if psychological support is not provided to individuals who are directly or indirectly affected by earthquakes, people may face various mental illnesses (Kukuoglu, 2018). The psychosocial help offered in the aftermath of disasters is critical. Psychological first aid is a type of early psychosocial support service that aims to keep people and society mentally healthy under extreme conditions (Brymer et al., 2006). Most typically, psychological first aid is administered on the scene, at the catastrophe site, or in the afflicted neighborhood. Furthermore, depending on the requirement, applications can be carried out in a variety of settings such as treatment centers, schools, hospitals, residences, workplaces, airports, and community centers. Psychological first aid training may be included into the curriculum to enable non-specialist front-line workers to give psychosocial treatment to distressed persons while also building a resilient workforce capable of efficiently responding to catastrophes and crises (Jacobs et al., 2016; Vernberg et al., 2008). Treatment is not part of psychological first aid practice. It can assist to alleviate the stress and worry of those who are exposed to the situation. It can offer them psychological support without criticizing

✉ Galip Usta
galipusta@trabzon.edu.tr

Esra Bekircan
esrasancarl1991@hotmail.com

Kemal Torpuş
kemaltorpus@artvin.edu.tr

¹ Department of Medical Services and Techniques, Tonya Vocational School of Higher Education, Trabzon University, 61500 Tonya, Trabzon, Türkiye

² Emergency Aid and Disaster Management, Faculty of Health Sciences, Artvin Çoruh University, 08000 Merkez, Artvin, Türkiye

them and help them avoid advanced mental disorders. A second possible benefit is that psychological first aid training equips healthcare personnel with the knowledge to provide a low-intensity, step-by-step therapy approach that may be used in a wide range of humanitarian and catastrophe scenarios (Ruzek et al., 2007; Wang et al., 2021). According to the findings of a study on the efficacy of Psychological First Aid (PFA) education, it was found that this education was effective in enhancing the psychosocial skills of field workers and disaster victims as well as increasing self-efficacy and resilience (Wang et al., 2021). PFA training for field workers during the Ebola epidemic has been noted to provide cost-effective mental health support. It has also been emphasized that training improves the psychosocial skills of employees and increases their resilience (Horn et al., 2019). It is suggested that psychological first aid training, which should be implemented as soon as possible during an emergency, may be tailored to match the priorities and requirements of people and can be delivered via various platforms (live, online, and mobile) (Kim & Han, 2021; Kurniawan et al., 2022; Ni et al., 2023; Shultz & Forbes, 2013; Ziedonis et al., 2016). It might be challenging to provide a theoretically full definition of psychological first aid practice in many models throughout the world. As a result, the criteria and practices in the World Health Organization's guideline are utilized to develop a common strategy for researchers (WHO, 2011). In addition, it has been seen that there are psychological first aid studies in the literature in different ways after a negative event (Chen & Wu, 2006; Morris et al., 2007; Pfefferbaum et al., 2003; Yule, 2009). Psychological first aid intervention can be an important factor in people's coping with stress.

The purpose of this study is to investigate the impact of psychological first aid intervention on stress and resilience in people who voluntarily participated in the studies (aid-rescue) following two large earthquakes 2023 in Turkey.

Question of the research

How does the psychological first aid intervention provided to volunteers involved in the earthquake a disaster effect their stress and resilience levels?

Table 1 Model of the research

Groups	Pre-Test	Application	Post -Test
Experimental group	X	Online psychological first aid intervention (4 sessions)	X
Control group	X	No interference	X

The hypothesis of the research

H1 The stress level of the group who had psychological first aid intervention will be statistically considerably lower than the group that did not get any intervention.

H2 There will be a significant increase in the psychological resilience level of the online psychological first aid intervention experimental group compared to the control group.

Materials and methods

In this section, information about the purpose and model of the research, the place and time of the research, the universe and sample of the research, the determination of the experimental and control groups of the study, CONSORT 2010 Flow Chart (Moher et al., 2010), variables of the research, measurement tools used in the research, the data collection process, the psychological first aid intervention, the analysis of the data, the ethical dimension and limitations of the research are given.

Model of the research

This study uses a randomly controlled trial with experimental and control groups, as stated in Table 1. Pre-test and post-test measures were taken for both groups in the research. The control group received no intervention. This work has also been filed in clinical trials (NCT05869916).

Place and time of the research

The data were obtained in the form of group interviews between February and March 2023 by providing online psychological first aid to volunteers who participated in the Kahramanmaraş Centered Earthquake that struck large area in Turkey on Monday, February 6.

Universe and sample

The research's overall population comprises of volunteers working in the disaster area. The participants in this study were chosen among the volunteers who participated as an aid-rescuer in the Kahramanmaraş Centered Earthquakes on Monday, February 6, and satisfied the study's inclusion requirements.

Inclusion criteria

- Working as a volunteer in the earthquake zone,
- Lack of a perceptual issue that would obstruct communication,
- Volunteering to participate in research.

Exclusion criteria

- Presence of a communication barrier.
- Refusing to take part in the research.

Exclusion criteria for participants

- Not attending any session of the four-session training program and not participating in the make-up session,
- Not participating in any of the pre-test and post-test.

Sampling

The sample size for the investigation was calculated using the G*Power 3.1.9 (G*Power, Universität Düsseldorf, Germany) program (Faul et al., 2009). In line with the preliminary hypotheses of Öztürk et al. (2023) the effect size was chosen as 0.61 and the type I error amount was chosen as $\alpha = 0.05$, while the targeted power of the test was $1 - \beta = 0.85$, the minimum number of samples required for statistical analysis was determined as 10 people. This study was carried out with 34 people, including 17 control and 17 experimental. The sample size of the study is sufficient enough to identify medium to high effect sizes (Cohen, 1988).

Determination of experimental and control groups of the study

Randomization: In this study, the sample selection of volunteers was carried out using a simple random sampling method. By using a simple randomization procedure, 34 participants who agreed to participate in the study and satisfied the inclusion criteria were allocated to the experimental and control groups. In order to reduce the selection bias, a random numbers table from Random.org was used by a statistician who did not have a direct role in the research while determining the experimental and control groups (<https://www.random.org/sequences/min=1&max=30&col=2&format=html&rnd=new>). During the phases of this

randomized controlled study, the flowchart of individual removal-extraction processes is shown in Fig. 1.

Variables of the study

Independent variables: Online psychological first aid response.

Dependent variables: Psychological resilience and level of secondary traumatic stress.

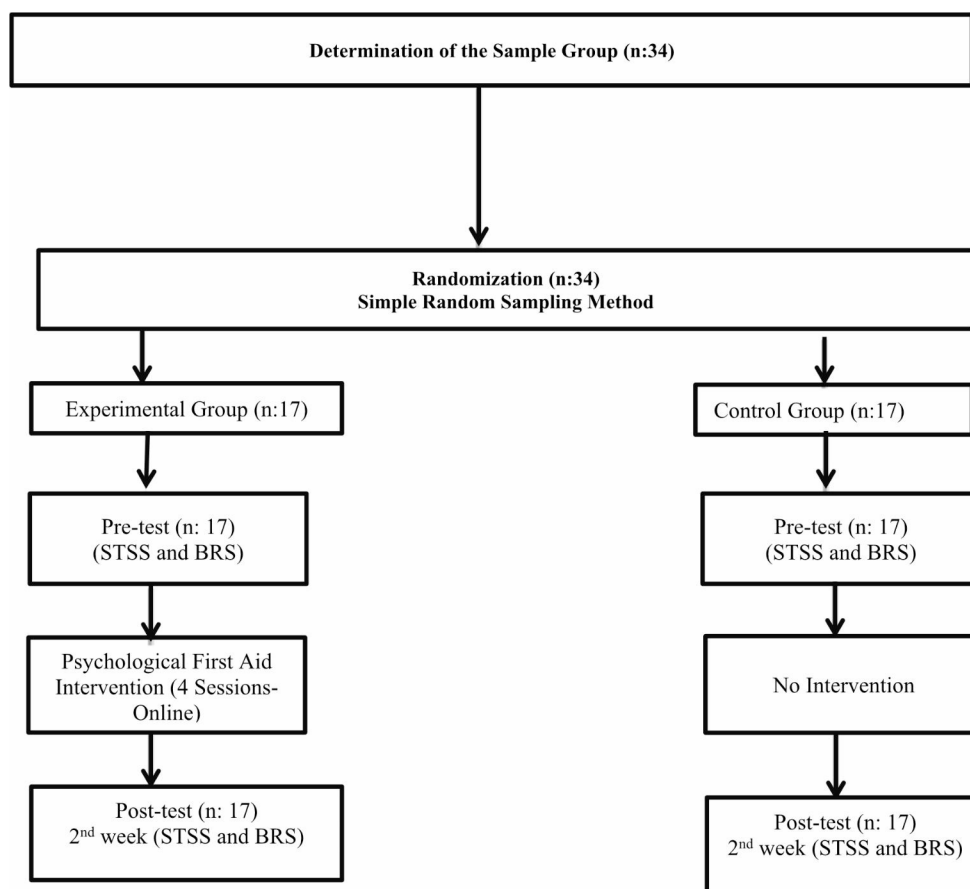
Control variables: Descriptive characteristics of individuals.

Measurement tools used in the research

Introductory characteristics form for individuals

Questions such as the participants' age, marital status, gender, and educational status were included in the form that introduced the socio-demographic variables produced by the researchers.

Secondary traumatic stress scale (STSS) The scale was developed by Bride et al. (2004). The Turkish version was produced by Kahil (2016). It is a 5-point Likert type and the scale consists of 17 questions. The scale was prepared with the aim of revealing the secondary trauma experienced by the individuals who were exposed to trauma and the employees, and it was aimed to determine the secondary trauma situations experienced by the employees based on the interview they had in the last 7 days. The scale's question items were labeled as "(1) Never", "(2) Rarely", "(3) Sometimes", "(4) Often", and "(5) Very Often". Accordingly, the lowest possible score for a proposition is 1 and the highest possible score is 5. However, the lowest possible score from the total of the scale components is 17, and the highest possible score is 85. The higher the score on the scale, the more severe the secondary traumatic stress disorder. The scale's 17 propositions were developed based on the DSM-IV diagnostic of Post Traumatic Stress Disorder's B criterion (re-experiencing), C criterion (avoidance), and D criterion (increased arousal). The secondary traumatic stress scale is divided into three sub-dimensions: automatic effects, avoidance, and arousal. Items 1, 5, 7, 9, 12, 14, and 17 of the scale items identify avoidance symptoms, while items 4, 8, 11, 15, and 16 identify evoked symptoms. Items 2, 3, 6, 10, and 13 of the scale items identify involuntary exposures. In order to talk about secondary trauma in the individual, the items in the scale should be marked as "sometimes" (3), "often" (4), or "very often" (5) (Kahil, 2016). In the study conducted by Kahil (2016), the Cronbach value of the scale was found to be 0.94. In this study, the Cronbach alpha reliability coefficient was found to be 0.90.

Fig. 1 CONSORT 2010 Flow Chart

Brief resilience scale (BRS) Smith et al. (2008) developed by a Turkish validity-reliability study was conducted by Doğan (2015). BRS is a five-point Likert scale consisting of six items. A high score from the scale indicates an increase in psychological resilience. The scale's internal consistency reliability coefficient was determined to range between 0.80 and 0.91 (Doğan, 2015). The Cronbach alpha reliability value was 0.84 in our study.

Content of educational material

In this study, the World Health Organization's guideline was used in the principles of psychological first aid intervention applied to the experimental group (WHO, 2011). WHO, World Vision International, and the War Trauma Foundation collaborated to design this approach, which was endorsed by 24 humanitarian organizations. The writers of the handbook purposefully selected simple language in order for it to be readily adaptable to a range of socio-cultural situations in low- and middle-income nations. Simple language was deliberately used by the authors of the guide so that it can be easily adapted to a variety of socio-cultural settings in low- and middle-income countries (Schafer et al., 2010,

2016). The World Health Organization (2011) emphasizes in its handbook for field workers in 33 languages that psychological first aid should be delivered in line with the person's socio-cultural values, age, and gender, as well as with consideration for privacy. According to the World Health Organization's (2011) Guide to Field Workers, assistance should be given from the first encounter with the individual in need (WHO, 2011). A mental nurse with the title of Doctor of Science in the field of psychiatric nursing gave the psychological first aid intervention in this study. In this regard, the psychiatric nurse underwent a two-day, 12-hour psychological first aid training conducted by the Psychiatric Nursing Association prior to providing psychological first aid instruction. This study is based on the "Look, Listen, Feel" action steps from "Psychological First Aid: A Guide for Field Workers". The information in "Psychological First Aid: A Guide for Field Workers" has been tailored to Turkish culture. It is divided into four sessions: understanding psychological first aid and its nature in the first, post-disaster mental health for individuals working in the field in the second, psychological first aid intervention for volunteers working in the earthquake zone in the third level, and stress management methods in the fourth. These four sessions covered the following topics: explaining important

psychiatric and mental health terms, understanding reactions to unusual situations, understanding psychological first aid intervention, understanding stress and its sources, self-care, looking-listening-connecting in psychological first aid intervention practice, and terminating help. Three separate specialists were consulted on the content of the educational material utilized in this study.

Application of data collection tools

Volunteers who took part in the Kahramanmaraş-centered earthquakes in Turkey were reached by snowball sampling method (Patton, 1990). To offer blinding, the researcher, an emergency help and catastrophe professional, used the snowball sampling approach to interview volunteers (aid-rescuer) who took part in the earthquake. To avoid contamination and bias between the control groups and experimental, as well as the psychiatric nurse who provided psychological first aid and participated in the research, care was taken to avoid any interaction before the administration. After the control groups and experimental were determined, the participants were called by the emergency help and disaster specialist, who was also a researcher, to select the best day and time for the program, and they were warned not to discuss the program content throughout the study. Likewise, the dates of pre-test and post-test assessments were communicated with the control group. Pre-tests were administered to the experimental and control groups through Google form before the psychological first aid intervention, and no training was provided to the control group thereafter. The experimental group received an online psychological first aid intervention lasting two weeks and four sessions. The psychological first aid training was held on Mondays and Saturdays between 20:00 and 21:00 using the Google Meet platform. The post-test was administered to both groups after the experimental group's training session was completed. All researchers who carried out the study were trained in psychological first aid.

Analysis of the data

The data obtained in the study were processed into the SPSS (Statistical Package for the Social Sciences) program. In the analysis of the data, the assumptions that must be met in order to decide which tests to apply first were evaluated. Numerical variables are presented as standard deviation and mean, and categorical variables are presented as frequency and percentage. Shapiro-Wilk, kurtosis and skewness values were taken into account for normality test evaluation. The interaction of dependent variables with the group was analysed by Mix repeated anova analysis. The relationship between categorical variables was analysed with chi-square and Fishers Exact test. The significance level of the values

obtained as a consequence of the analysis was evaluated using the value of 0.05 as a criteria.

Strengths of the research

The online psychological first aid intervention provided to the participants enrolled in this study within the first week after their return from the earthquake area is the research's strength since it is provided at a time when critical psychosocial care is required. Conducting the research on an internet platform gave the volunteers working in the field faster access. Individuals shared their sentiments freely and benefited from the healing effect of group interviews in the application, which was carried out in the form of online and group interviews.

Limitations and Strengths of the Research

The online psychological first aid intervention provided to the participants enrolled in this study within the first week after their return from the earthquake area is the research's strength since it is provided at a time when critical psychosocial care is required. Conducting the research on an internet platform gave the volunteers working in the field faster access. Individuals shared their sentiments freely and benefited from the healing effect of group interviews in the application, which was carried out in the form of online and group interviews. Conducting the study only on volunteer individuals who took part in the earthquake disaster can be considered a limitation.

Assumptions of the research

- It was assumed that the non-experimental environmental factors of the individuals participating in the experimental and control groups did not significantly affect the psychological resilience and stress levels of the individuals.
- It is assumed that all individuals participating in the research will give honest answers by reading carefully while answering the scales.

Ethical aspect of research

Before starting the research, permission was obtained from the local ethics committee of Artvin Çoruh University (Approval Number: E-18457941-050.99-83677). Individuals who volunteered to participate in the study and satisfied the inclusion criteria were told about the goal of the

Table 2 Distribution of participants on demographic characteristics

Variable	Group	Control		Chi-Square tests	p
		Experiment n (%)	Control n (%)		
Gender	Female	7 (46.7)	8(53.3)	0.12	0.73
	Male	10(52.6)	9 (47.4)		
Marital status	Married	0 (0.00)	1 (100.00)	*1.03	0.31
	Single	17 (51.52)	16 (48.48)		
Educational Status	High school	0 (0.00)	2 (100.00)	*3.37	0.35
	Associate degree	10 (50.00)	10 (50.00)		
	Bachelor	7 (63.64)	4 (36.36)		
Professional Aid Organization	Doctorate	0 (0.00)	1 (100.00)	*3.29	0.07
	Yes	17 (54.84)	14 (45.16)		
	No	0 (0.00)	3 (100.00)		
Have You Received Psychosocial Support?	Yes	5 (55.56)	4 (44.44)	*0.151	0.70
	No	12 (48.00)	13 (52.00)		
Basic or Professional Disaster Training?	Yes	12 (60.00)	8 (40.00)	1.94	0.16
	No	5 (35.71)	9 (64.29)		
Did You Lose Your Relative in The Earthquake?	Yes	2 (50.00)	2 (50.00)	*0.01	1.00
	No	15 (50.00)	15 (50.00)		
Did You Experience Material Loss in the Earthquake?	Yes	3 (60.00)	2 (40.00)	*0.23	0.63
	No	14 (48.28)	15 (51.72)		
Frequency of Following Earthquake News	None	0 (0.00)	1 (100.00)	*1.99	0.48
	Rare	0 (0.00)	1 (100.00)		
	Often	17 (53.13)	15 (46.88)		

* Fisher's exact test

Table 3 Findings related to controlling the assumption of normality

	Shapiro-Wilk			Distortion	Kurtosis
	Statistics	SD	p		
Pre-test STSS arousal	0,94	34,00	0,07	0,65	0,80
Pre-test STSS avoidance	0,95	34,00	0,10	0,70	0,32
Pre-test STSS involuntary	0,97	34,00	0,56	0,07	-0,16
Post-test STSS involuntary	0,93	34,00	0,04	0,80	0,09
Post-test STSS arousal	0,94	34,00	0,06	0,79	0,61
Post-test STSS avoidance	0,97	34,00	0,40	0,58	0,24
Post-test STSS scale	0,94	34,00	0,05	0,92	0,83
Pre-test STSS scale	0,93	34,00	0,03	0,96	1,00
Pre-test BRS	0,94	34,00	0,08	-0,55	-0,17
Post-test BRS	0,65	34,00	0,01	2,78	9,09

investigation and their agreement was acquired. It was told that the data would be kept private.

Findings

In this section, there are findings related to the results of psychological first aid intervention applied to the participants. There is no statistically significant difference between the groups in terms of gender, marital status, educational status, aid organization as a profession, receiving psychosocial support, receiving basic or professional disaster education, losing a relative, experiencing loss, and following earthquake news ($p > 0.05$). (Table 2).

To choose which analyses to use, the Shapiro-Wilk and skewness kurtosis coefficients were examined together to determine if the data had a normal distribution or not. When Table 3 is examined, it was evaluated that the data obtained from the Shapiro-Wilk tests showed a normal distribution when the values of kurtosis and skewness were between ± 2.0 (Mallery & George, 2010) in the data with a significance level greater than 0.05. It was evaluated that the data obtained from the Shapiro-Wilk tests were less than 0.05 and the values of kurtosis and skewness outside the ± 2.0 limit did not show normal distribution (Table 3).

When the data in Table 4 are examined, STSS Arousal test scores did not show a statistically significant difference

between groups and in group*time interaction ($p > 0.05$). STSS avoidance scores show a significant difference between group*time interaction ($p < 0.05$, Partial Eta Squared:0.232). Based on the mean values, it was determined that the experimental group's STSS avoidance scores declined more than the control group's over time. STSS involuntary scores show a significant difference in time and group*time interaction ($p < 0.05$) partial Eta Squared:0.168). It was determined that STSS involuntary test scores decreased over time in both groups, but this decrease was higher in the experimental group. The difference found to be significant is at the low effect level (Cohen d :0.08). STSS scale test scores show a statistically significant difference in group*time interaction ($p < 0.05$) partial Eta Squared:0.220). Looking at the mean values, it was determined that the STSS scores of the experimental group decreased more over time. The difference found to be significant is at the low effect level (Cohen d :0.06). BRS Arousal test scores did not indicate a significant difference between groups in the group*time interaction ($p > 0.05$) (Fig. 2).

Table 4 Analysis of scale and sub-dimensions according to experiment-control groups

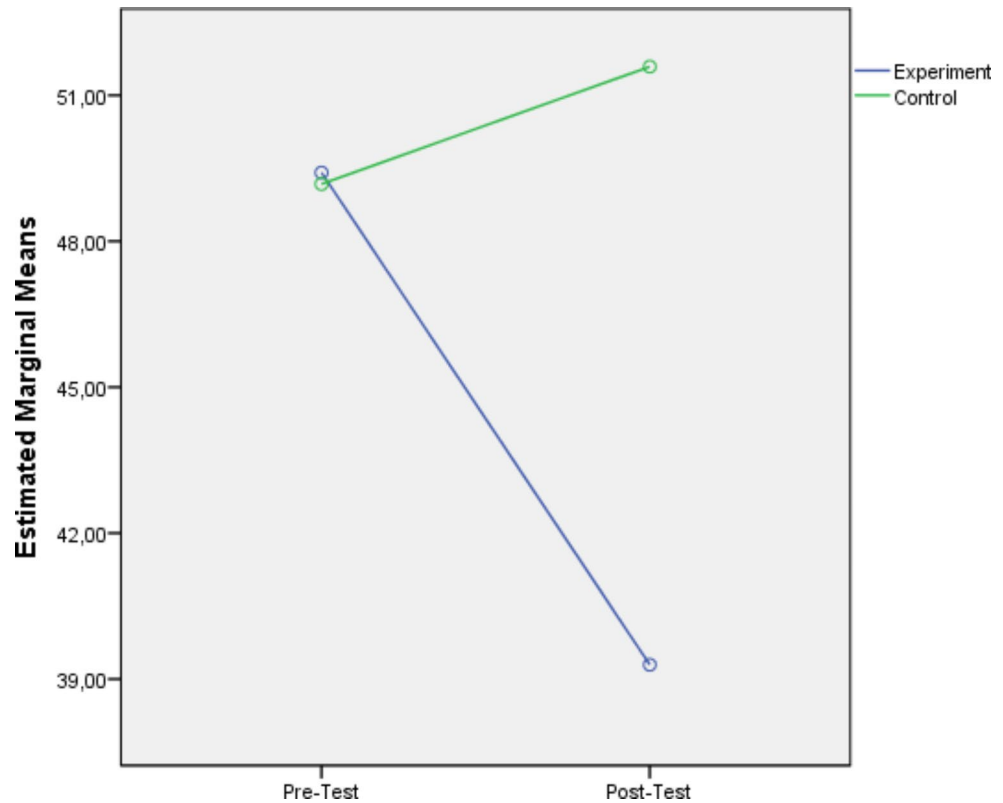
	Experiment $\bar{X} \pm SD$	Control $\bar{X} \pm SD$
Pre-Test STSS Arousal	13.24 $\pm$ 4.27	13.82 $\pm$ 5.14
Post-Test STSS Arousal	11.88 $\pm$ 3.08	14.53 $\pm$ 4.89
Time	F:0, 17;p :0.69	
Time*Group	F:1.69 ;p :0.20	
Pre-Test STSS Avoidance	20.47 $\pm$ 4.11	18.76 $\pm$ 6.71
Post-Test STSS Avoidance	16.00 $\pm$ 3.84	20.00 $\pm$ 6.86
Time	F:3, 11;p :0.08	
Time*Group	F:9, 67;p :0.01 Partial Eta Squared:0.232	
Pre-Test STSS Involuntary	15.71 $\pm$ 3.06	16.59 $\pm$ 3.69
Post-Test STSS Involuntary	9.41 $\pm$ 2.12	13.59 $\pm$ 3.34
Time	F:51, 35;p :0.01 Partial Eta Squared:0.616	
Time*Group	F:9, 45;p :0.01 Partial Eta Squared:0.168	
Pre-Test (STSS Scale)	49.41 $\pm$ 9.59	49.18 $\pm$ 14.55
Post-Test (STSS Scale)	39.29 $\pm$ 8.24	51.59 $\pm$ 15.21
Time	F:3, 41;p :0.07	
Time*Group	F:9, 02;p :0.01 Partial Eta Squared:0.220	
Pre-Test (BRS Scale)	20.0 (6.0–29.0)	20.0 (7.0–28.0)
Pre-Test (BRS Scale)	24.0 (16.0–63.0)	18.0 (6.0–27.0)
Time	F:2, 70;p :0.1	
Time*Group	F:2, 60;p :0.11 0	
F:Mix repeated ANOVA (sphericity assumed)		

Discussion and conclusion

In this study, the effect of psychological first aid intervention on stress and resilience applied to people who voluntarily participated in the work in the earthquake area after earthquake disasters in Turkey was evaluated. It was determined that the individuals in this study had a stress level above the average before the PFA intervention. After the online psychological first aid intervention, the STSS post-test scores showed a statistically significant difference compared to the experimental and control groups ($p < 0.05$). According to this result, there was a significant decrease in the stress level of the online psychological first aid intervention experimental group compared to the control group. After the psychological first aid intervention applied to the volunteers, it was determined that the avoidance of the STSS scale sub-dimensions and the involuntary dimension scores showed statistically significant differences compared to the experimental and control groups. In addition, after the intervention was applied to the experimental group in the study, the psychological resilience level of the experimental group was found to be higher than before the application.

Psychological therapies are said to reduce post-traumatic stress symptoms and enhance post-traumatic maladaptive cognitions in systematic research looking at psychological interventions for PTSD symptoms (Kangaslampi & Peltonen, 2022; Anderson et al., 2020; Hooper et al., 2021). Sijbrandij et al. (2020) concluded in their randomized controlled study that PFA education strengthens the psychosocial support capacity in providing support to individuals exposed to acute distress and is an effective psychosocial approach to gaining knowledge and understanding in the fight against crisis. In the “Mental Health First Aid” practice in China by Wong et al. (2017), it is shown that psychological first aid practices increase the knowledge of individuals about psychological disorders, reduce stigmatization and support help-seeking behavior. The sense of disaster readiness and overall self-efficacy of the participants were shown to be favourably impacted by psychological first aid training in a research with undergraduate nursing students (Kılıç & Şimşek, 2019). According to a research done with nursing students, psychological first aid interventions were successful in assisting students in reducing psychological discomfort connected to COVID-19 and boosting psychological resilience (Eweida et al., 2023). Allen et al. (2010) stated in their study that psychological first aid is an extremely beneficial practice for post-disaster survivors and aid providers. Plummer et al. (2008) found that although Hurricane Katrina survivors showed symptoms of STSS, there was a significant decrease in the STSS score of children who received the PFA intervention two years after the event. Hechanova et al. (2015) found that psychological first aid

Fig. 2 STSS scale pre-test and post-test time graph (it was created by the authors using the SPSS package program)



interventions significantly increased participants' coping skills and self-efficacy in disasters in their study with 125 employees responding to disasters in the Philippines. It has been observed that PFA practice among employees is limited (Eweida et al., 2023). According to a research, providing psychological first aid to victims of trauma is crucial to maintaining their mental health. It was clarified that the issue will be impacted by things like the implementation strategy and potentially biased attitude. For this reason, it may be claimed that further research is required to assess the efficacy of psychological first aid interventions (Hermosilla et al., 2022).

The trauma of the disaster not only affects the victims but can also affect the professionals who work in the disaster area or work with the victims after the disaster. Many sources state that disaster workers also show similar psychological symptoms to those directly affected. The most common psychological symptoms among disaster workers include post-traumatic stress, secondary trauma, and indirect traumatization symptoms (Kukuoğlu, 2018). There is agreement on the use of psychological first aid immediately following natural catastrophes or humanitarian crises. However, it has been determined that there is insufficient controlled evaluation of the effects of psychological first aid application in the literature (Forbes et al., 2011; Sijbrandij et al., 2020). The components of psychological first aid include caring, listening, and relating to catastrophe survivors as

well as complimentary and helpful information (Francis et al., 2020; Thum et al., 2021). Assessing difficulties and worries, assisting individuals in meeting their fundamental needs, listening without pressure, consoling people, providing people with knowledge, service and social support, and safeguarding them from future damage are all examples of psychological first aid action (WHO, 2011). With the help of psychological first aid, catastrophe victims might experience less early suffering, have their psychological and physical needs met, develop better coping mechanisms, and feel more secure, at ease, hopeful, committed, and successful (Schoultz et al., 2022; Eweida et al., 2023). Early involvement with psychological first aid promotes a sense of security, tranquillity, community effectiveness, dedication, and optimism (Hobfoll et al., 2007). It is believed that in disaster or crisis situations, psychological first aid is critical for building and safeguarding society and families, as well as controlling mental disease processes. This technique is meant to keep the harmful repercussions of traumatic events from becoming mental problems (Özkan et al., 2021). It is seen that there are studies that emphasize the importance of psychological first aid intervention given with different methods in extraordinary situations for mental health (Frankova et al., 2022; Figueroa et al., 2022; Armitage, 2022). According to our findings, psychological first-aid intervention significantly reduces stress and increases resilience. As a result, it is critical to address the

psychological requirements of volunteers who participate in earthquakes and other natural disasters and to provide psychological support services.

Suggestions

According to the results of this study, it is thought that online psychological first aid interventions should be provided for the psychological needs of volunteers who take part in similar disaster situations. In addition, it can be thought that information should be provided through various platforms and training programs in order to make these interventions reach a wider audience. In this way, a social benefit can be achieved by aiming to increase the psychological resilience levels of volunteers who take part in disasters and prevent psychological traumas.

Acknowledgements We would like to thank Gökhan Dağlı for whom we benefited from his ideas on statistics.

Funding No support received.

Data Availability The data created within the scope of the study can be accessed from the authors upon appropriate request, provided that legal and ethical rules are respected.

Declarations

Ethical approval The Helsinki guidelines were followed during the study's execution.

Conflict of Interest No conflict of interest has been declared.

Informed consent Participants participated in the study voluntarily and with their consent. Informed consent was obtained from each participant participating in the study.

References

- Allen, A. B., & Leary, M. R. (2010). Self-compassion, stress, and coping. *Social and Personality Psychology Compass*, 4(2), 107–118. <https://doi.org/10.1111/J.1751-9004.2009.00246.X>.
- Anderson, G. S., Di Nota, P. M., Groll, D., & Carleton, R. N. (2020). Peer support and crisis-focused psychological interventions designed to mitigate post-traumatic stress injuries among public safety and frontline healthcare personnel: A systematic review. *International Journal of Environmental Research and Public Health*, 17(20), 7645. <https://doi.org/10.3390/ijerph17207645>
- Armitage, R. (2022). Digital psychological first aid in humanitarian contexts. *The Lancet Psychiatry*, 9(7), e34. [https://doi.org/10.1016/S2215-0366\(22\)00200-0](https://doi.org/10.1016/S2215-0366(22)00200-0)
- Bride, B. E., Robinson, M. M., Yegidis, B., & Figley, C. R. (2004). Development and validation of the secondary traumatic stress scale. *Research on Social Work Practice*, 14(1), 27–35. <https://doi.org/10.1177/1049731503254106>.
- Brymer, M., Layne, C., Jacobs, A., Pynoos, R., Ruzek, J., Steinberg, A., Vernberg, E., & Watson, P. (2006). *Psychological first aid field operations guide* (2nd edition.). National Child Traumatic Stress Network.
- Chen, S. H., & Wu, Y. C. (2006). Changes of PTSD symptoms and school reconstruction: A two-year prospective study of children and adolescents after the Taiwan 921 earthquake. *Natural Hazards*, 37(1–2), 225–244. <https://doi.org/10.1007/S11069-005-4671-Y/METRICS>.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum.
- Doğan, T. (2015). Kısa Psikolojik sağlık ölçeği'nin Türkçe uyarlaması: geçerlik ve güvenirlik çalışması. *The Journal of Happiness & Well-Being*, 3(1), 93–102. <https://doi.org/10.19128/turje.181073>.
- Eweida, R. S., Rashwan, Z. I., Khonji, L. M., Shalhoub, A. A., Bin, & Ibrahim, N. (2023). Psychological first aid intervention: Rescue from psychological distress and improving the pre-licensure nursing students' resilience amidst COVID-19 crisis and beyond. *Scientific African*, 19, e01472. <https://doi.org/10.1016/j.sciaf.2022.e01472>.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149–1160. <https://doi.org/10.3758/BRM.41.4.1149>.
- Figueroa, R. A., Cortés, P. F., Marin, H., Vergés, A., Gillibrand, R., & Repetto, P. (2022). The ABCDE psychological first aid intervention decreases early PTSD symptoms but does not prevent it: Results of a randomized-controlled trial. *European Journal of Psychotraumatology*, 13(1), 2031829. <https://doi.org/10.1080/2008198.2022.2031829>
- Forbes, D., Lewis, V., Varker, T., Phelps, A., O'Donnell, M., Wade, D. J., Ruzek, J. I., Watson, P., Bryant, R. A., & Creamer, M. (2011). Psychological first aid following trauma: Implementation and evaluation framework for high-risk organizations. *Psychiatry*, 74(3), 224–239. <https://doi.org/10.1521/PSYC.2011.74.3.224>.
- Francis, B., Rizal, A. J., Sabki, Z. A., & Sulaiman, A. H. (2020). Remote psychological first aid (rPFA) in the time of covid-19: A preliminary report of the Malaysian experience. *Asian Journal of Psychiatry*, 54, 102240. <https://doi.org/10.1016/j.ajp.2020.102240>
- Frankova, I., Vermetten, E., Shalev, A. Y., Sijbrandij, M., Holmes, E. A., Ursano, R., & Zohar, J. (2022). Digital psychological first aid for Ukraine. *The Lancet Psychiatry*, 9(7), e33. [https://doi.org/10.1016/S2215-0366\(22\)00147-X](https://doi.org/10.1016/S2215-0366(22)00147-X)
- Hechanova, R. M., Ramos, P. A. P., & Waelde, L. (2015). Group-based mindfulness-informed psychological first aid after Typhoon Haiyan. *Disaster Prevention and Management: An International Journal*, 24(5), 610–618. <https://doi.org/10.1108/DPM-01-2015-0015/FULL/PDF>.
- Hermosilla, S., Forthal, S., Sadowska, K., Magill, E. B., Watson, P., & Pike, K. M. (2022). We need to build the evidence: A systematic review of psychological first aid on mental health and well-being. *Journal of Traumatic Stress*, 36(1), 5–16. <https://doi.org/10.1002/JTS.22888>.
- Hobfoll, S. E., Watson, P., Bell, C. C., Bryant, R. A., Brymer, M. J., Friedman, M. J., Friedman, M., Gersons, B. P. R., De Jong, J. T. V. M., Layne, C. M., Maguen, S., Neria, Y., Norwood, A. E., Pynoos, R. S., Reissman, D., Ruzek, J. I., Shalev, A. Y., Solomon, Z., Steinberg, A. M., & Ursano, R. J. (2007). Five essential elements of immediate and mid-term mass trauma intervention: Empirical evidence. *Psychiatry*, 70(4), 283–315. <https://doi.org/10.1521/PSYC.2007.70.4.283>.
- Hooper, J. J., Saulsman, L., Hall, T., & Waters, F. (2021). Addressing the psychological impact of COVID-19 on healthcare workers: Learning from a systematic review of early interventions for frontline responders. *BMJ Open*, 11(5), e044134. <https://doi.org/10.1136/bmjopen-2020-044134>

- Horn, R., O'May, F., Esliker, R., Gwaikolo, W., Woensdregt, L., Ruttenberg, L., & Ager, A. (2019). The myth of the 1-day training: The effectiveness of psychosocial support capacity-building during the Ebola outbreak in West Africa. *Global Mental Health (Cambridge England)*, 6, 1–15. <https://doi.org/10.1017/GMH.2019.2>.
- Jacobs, G. A., Gray, B. L., Erickson, S. E., Gonzalez, E. D., & Quevilion, R. P. (2016). Disaster mental health and community-based psychological first aid: Concepts and education/training. *Journal of Clinical Psychology*, 72(12), 1307–1317. <https://doi.org/10.1002/JCLP.22316>.
- Kadioğlu, M. (2008). Modern, bütünlük afet yönetimin temel ilkeleri. In M. Kadioğlu & E. Özdamar (Eds.), *Afet Zararlarını Azaltmanın Temel İlkeleri* (pp. 1–34). JICA Türkiye Ofisi Yayınları No: 2.
- Kahil, A. (2016). *Travmatik yaşantıları olan bireylere yardım davranışında bulunan profesyonel ve gönüllülerin ikincil travmatik stres düzeylerinin incelenmesi*. (Yüksek Lisans Tezi) Ufuk Üniversitesi / Sosyal Bilimler Enstitüsü. Ankara.
- Kangaslampi, S., & Peltonen, K. (2022). Mechanisms of change in psychological interventions for posttraumatic stress symptoms: A systematic review with recommendations. *Current Psychology*, 41(1), 258–275. <https://doi.org/10.1007/s12144-019-00478-5>.
- Kim, E. Y., & Han, S. W. (2021). Development of psychological first aid guidelines for people who have experienced disasters. *International Journal of Environmental Research and Public Health*, 18(20), 10752. <https://doi.org/10.3390/IJERPH182010752>.
- Kılıç, N., & Şimşek, N. (2019). The effects of psychological first aid training on disaster preparedness perception and self-efficacy. *Nurse Education Today*, 83, 104203. <https://doi.org/10.1016/j.nedt.2019.104203>.
- Koop, D., & Ward, M. (2011). Major Incident preparedness management. In K. Curtis & C. Ramsden (Eds.), *Emergency And Trauma Care for Nurses And Paramedics* (pp. 185–220).
- Kukuoglu, A. (2018). Doğal afetler sonrası yaşanan travmalar ve örnek bir psikoeğitim programı. *Journal of Disaster and Risk*, 1(1), 39–52. <https://doi.org/10.35341/AFET.412005>.
- Kurniawan, L., Sutanti, N., Ningsih, R., Wulandari, N. Y., Ahmad, A., binti, Kee, P., & Nuryana, Z. (2022). Psychological first aid training as a tool to address mental health problems during COVID-19. *Asian Journal of Psychiatry*, 75, 103226. <https://doi.org/10.1016/J.AJP.2022.103226>.
- Mallery, P., & George, D. (2010). *SPSS for windows step by step: A simple guide and reference*. Abingdon.
- Moher, D., Hopewell, S., Schulz, K. F., Montori, V., Gøtzsche, P. C., Devereaux, P. J., Elbourne, D., Egger, M., & Altman, D. G. (2010). CONSORT 2010 explanation and elaboration: Updated guidelines for reporting parallel group randomised trials. *Bmj*, 340, 869. <https://doi.org/10.1136/BMJ.C869>.
- Morris, J., Van Ommeren, M., Belfer, M., Saxena, S., & Saraceno, B. (2007). Children and the Sphere standard on mental and social aspects of health. *Disasters*, 31(1), 71–90. <https://doi.org/10.1111/J.14677717.2007.00341.X>.
- Ni, C. F., Lundblad, R., & Dykeman, C. (2023). Diversity and Training Delivery Trends in Psychological First Aid During COVID-19: Implications for Researchers and Practitioners. *Psychological Trauma: Theory, Research, Practice, and Policy*. <https://doi.org/10.1037/TRA0001447>.
- Özkan, B., & Çetinkaya Kutun, F. (2021). Afet psikolojisi. *Sağlık Akademisyenleri Dergisi*, 8(3), 249–256. <https://doi.org/10.52880/SAGAKADERG.868877>.
- Öztürk, F., Bayraktar, E. P., & Tezel, A. (2023). The effect of laughter yoga on loneliness, psychological resilience, and quality of life in older adults: A pilot randomized controlled trial. *Geriatric Nursing*, 50, 208–214. <https://doi.org/10.1016/J.GERINURSE.2023.01.009>.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Sage Publications.
- Pfefferbaum, B., Sconzo, G. M., Flynn, B. W., Kearns, L. J., Doughty, D. E., Gurwitch, R. H., Nixon, S. J., & Nawaz, S. (2003). Case finding and mental health services for children in the aftermath of the Oklahoma City bombing. *Journal of Behavioral Health Services and Research*, 30(2), 215–227. <https://doi.org/10.1007/BF02289809/METRICS>.
- Plummer, C. A., Cain, D. S., Fisher, R. M., & Bankston, T. Q. (2008). Practice challenges in using psychological first aid in a group format with children: A pilot study. *Brief Treatment and Crisis Intervention*, 8(4), 313. <https://doi.org/10.1093/BRIEF-TREATMENT/MHN019>.
- Ruzek, J. I., Brymer, M. J., Jacobs, A. K., Layne, C. M., Vernberg, E. M., & Watson, P. J. (2007). Psychological first aid. *Journal of Mental Health Counseling*, 29(1), 17–49. <https://doi.org/10.17744/MEHC.29.1.5RACQXJUEAFABGW>.
- Schafer, A., Snider, L., & van Ommeren, M. (2010). Psychological first aid pilot: Haiti emergency response. *Intervention*, 8(3), 245–254. <https://doi.org/10.1097/WTF.0b013e32834134cb>.
- Schafer, A., Snider, L., & Sammour, R. (2016). A reflective learning report about the implementation and impacts of Psychological First Aid (PFA) in Gaza. *Ceased*, 3(1), 1–10. <https://doi.org/10.1080/21665044.2015.1110292>.
- Schultz, M., McGrogan, C., Beattie, M., Macaden, L., Carolan, C., & Dickens, G. L. (2022). Uptake and effects of psychological first aid training for healthcare workers' wellbeing in nursing homes: A UK national survey. *PLoS One*, 17(11), e0277062. <https://doi.org/10.1371/journal.pone.0277062>.
- Shultz, J. M., & Forbes, D. (2013). Psychological first aid. *Ceased*, 2(1), 3–12. <https://doi.org/10.4161/DISH.26006>.
- Sijbrandij, M., Horn, R., Esliker, R., O'may, F., Reiffers, R., Ruttenberg, L., Stam, K., de Jong, J., & Ager, A. (2020). The effect of psychological first aid training on knowledge and understanding about psychosocial support principles: a cluster-randomized controlled trial. *International Journal of Environmental Research and Public Health*, 17(2), 484. <https://doi.org/10.3390/IJERPH17020484>.
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15(3), 194–200. <https://doi.org/10.1080/10705500802222972/METRICS>.
- Thum, C. C., Chai, Y. C., Huri, Z., Wan Nawawi, S., W. Z., & Ibrahim, N. (2021). Innovative psychological first aid (PFA) in the new normal for frontliners. *Perspectives in Psychiatric Care*, 57(2), 965–967. <https://doi.org/10.1111/ppc.12600>.
- Vernberg, E. M., Steinberg, A. M., Jacobs, A. K., Brymer, M. J., Watson, P. J., Osofsky, J. D., Layne, C. M., Pynoos, R. S., & Ruzek, J. I. (2008). Innovations in disaster mental health: Psychological first aid. *Professional Psychology: Research and Practice*, 39(4), 381–388. <https://doi.org/10.1037/A0012663>.
- Wang, L., Norman, I., Xiao, T., Li, Y., & Leamy, M. (2021). Psychological first aid training: A scoping review of its application, outcomes and implementation. *International Journal of Environmental Research and Public Health*, 18(9), 4594. <https://doi.org/10.3390/IJERPH18094594>.
- WHO (2011). (World Health Organization). *Psychological first aid: Guide for field workers*. <https://www.who.int/publications/item/9789241548205>.
- Wong, D. F. K., Lau, Y., Kwok, S., Wong, P., & Tori, C. (2017). Evaluating the effectiveness of mental health first aid program for chinese people in hong kong. *Research on Social Work Practice*, 27(1), 59–67. https://doi.org/10.1177/1049731515585149/ASSET/IMAGES/LARGE/10.1177_1049731515585149-FIG1.JPG.

- Yule, W. (2009). Theory, training and timing: Psychosocial interventions in complex emergencies. *International Review of Psychiatry*, 18(3), 259–264. <https://doi.org/10.1080/09540260600656134>.
- Ziedonis, D., Larkin, C., & Appasani, R. (2016). Dignity in mental health practice & research: Time to unite on innovation, outreach & education. *The Indian Journal of Medical Research*, 144(4), 491. <https://doi.org/10.4103/0971-5916.200885>.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.