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The effects of psychological first aid training on disaster preparedness perception and self-efficacy

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ABSTRACT

Objective: This study was conducted with the aim of investigating the impact of psychological first aid training on the perception of disaster preparedness and self-efficacy.
Methodology: This study is an experimental randomized control study design with monitoring measurement. The study was carried out with a total of 76 nursing students including 38 in the intervention group and 38 in the control group. The data were collected using a Personal Information Form, the Disaster Preparedness Perception Scale for Nurses and the General Self-Efficacy Scale (GSS). Sessions of Psychological First Aid training that lasted 60 min were carried out with the students in the experiment group once a week along 6 weeks. The statistical analysis on the data involved descriptive statistical methods (means, standard deviations, frequencies), Mann Whitney *U* test, Spearman Correlation, Friedman and Wilcoxon Signed Ranks tests.
Findings: It was found that the mean scores of the intervention group under all sub-dimensions of the disaster preparedness perception scale for nurses (preparation phase, intervention phase, and post-disaster phase) increased significantly after the training and in follow-ups, and these were significantly higher than the mean scores of those in the control group. It was determined that the mean post-training and follow-up general self-efficacy scores of the intervention group increased significantly, and these were significantly higher than the mean scores of those in the control group.
Conclusion: It was determined that psychological first aid education positively affected the subject's perception for disaster preparation as well as their perception of general self-efficacy. In line with this conclusion, as per this study it is suggested to provide training that includes psychological first aid training module in undergraduate nursing programs.

1. Introduction

Disasters are situations which leave an indelible mark on the lives of individuals, and cause both physical and psychological trauma (Soldatos et al., 2006; Tian et al., 2014). In order to prevent negative consequences of disaster experiences, psychological support treatments appropriate for individuals should be provided at each phase of the disaster. It is suggested that psychological first aid (PFA) is the very first treatment provided right after the disaster (Uhernik and Husson, 2009; IASC, 2007; Vernberg et al., 2008; The Sphere Project, 2011). Psychological first aid is a supportive and practical approach to individuals exposed to severe stress (Snider et al., 2012; Landoy et al., 2015). Teachers, security forces, ministers of religion, disaster relief workers and all health professionals especially nurses should be able to provide psychological first aid in disasters (Allen et al., 2010; Brymer et al., 2006; Everly et al., 2010; Everly et al., 2014). Nurses can determine physical and psychological effects of disasters on individuals, families and communities, and protect the physical and emotional safety of individuals at every stage of the disaster (Polivka et al., 2008; Putra et al., 2011). Nurses can identify urgent and basic needs of individuals experiencing intense stress, using a supportive and compassionate approach (Bebiş and Özdemir, 2013; Secor-Turner and O'Boyle, 2006). Thus, they can minimize the psychological impact of the traumatic event, accelerate the healing process of the individual and increase the resilience of individuals and societies. At the same time, by encouraging individuals to increase self-efficacy with the implementation of PFA, they can also reduce the suffering and dependence of individuals (Allen et al., 2010; Everly et al., 2010).

Nurses are in direct contact with patients. More importantly, basic principles of nursing practice (holistic patient-centered assessment,

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condition diagnosis, planning and implementation) are parallel to stages of disaster management (risk reduction, preparation, intervention and recovery) (Everly et al., 2010). Both the theoretical knowledge and practical skills they have, as well as the fact that they have a majority in the health team, make the nurses the most appropriate group for psychological first aid (Everly et al., 2010).

However, in studies conducted in the world, it is observed that nurses' disaster preparations are insufficient (Tzeng et al., 2016; Seyedin et al., 2015). In Turkey, nurses working at Red Crescent and working voluntarily in disasters provide first aid and care service during a disaster. There is limited disaster specialization for nurses in Turkey. There is a great need in Turkey for training programs including nursing services in disasters (Kalanlar, 2013).

It is suggested in the literature that nurses should be trained to be qualified in disasters. Studies have shown that professionals with higher levels of knowledge are more likely to respond to disaster situations (Tzeng et al., 2016; Jonson et al., 2017; Nypaver, 2011). In addition, nurses should have high self-efficacy in order to cope effectively with disasters. Self-efficacy is an individual's beliefs in competence in coping with difficult life events (Bandura, 1989; Burns, 2014). Individual beliefs about the ability to perform a particular action affect the ability to initiate a particular activity and continue until its success (Jonson et al., 2017). Self-efficacy beliefs contribute individuals to display high performance by affecting their motivation (Benight and Bandura, 2004; Nypaver, 2011). There are many studies in the literature indicating that there is a positive correlation between self-efficacy perception and coping with disaster situations (Benight and Bandura, 2004; Lee and Lemyre, 2009; Sümer et al., 2005). Individuals who have strong self-efficacy show more preparedness behaviors and make effective interventions in case of a disaster. In the literature, there are research results showing that psychological first aid training increases self-efficacy and self-confidence (Chandra et al., 2014; Cheung, 2014; Everly et al., 2014).

As a result, nurses constitute the largest group among health care providers and also have the highest number of students in this field (Fung et al., 2008). It is an important point for the nurses who intervene in the disaster to recognize psychological reactions after disasters, to make appropriate interventions, to apply psychological first aid, to prevent the risks that may develop and the chronicity of traumatic reactions (Everly et al., 2010; Oflaz, 2008).

The feelings experienced after the disasters are similar in all societies, but the priorities of emotional needs and the ways in which they are met vary. It is thought that this study will contribute to the field by using the psychological first aid training, which was prepared by using literature, in a different culture. At the same time, the number of randomized controlled trials that determine the effectiveness of psychological first aid practices after a disaster is limited due to ethics and research barriers. In this study, the effectiveness of a guide and training program that will contribute to the development of psychological first aid awareness and application skills of nurses, who have a significant place in health care services, were evaluated. This guideline is applicable to clinical practice.

2. Methods

2.1. Research design

This study conducted to investigate the effect of psychological first aid training on perception of disaster preparedness and self-efficacy is pretest-posttest, randomized controlled experimental study with follow-up measurement.

2.2. Research population and sample

At the time of the research, 400 nursing students were studying at Artvin Coruh University Faculty of Health Sciences and 375 nursing students were studying at Recep Tayyip Erdogan University School of Health. The population of the study consisted of 58 fourth grade nursing students studying at Artvin Coruh University Faculty of Health Sciences and 90 fourth grade nursing students studying at Recep Tayyip Erdogan University School of Health. In order to determine the sample of the study, a study with a similar education model (Cheung, 2014) was used in the literature and a power analysis was performed. In this context, in order to exceed the 95% of the study's power in the sample number of the study, it was deemed appropriate to take a total of 70 individuals with at least 35 individuals to the intervention and control groups at 5% significance level ($t = 1.668$). A total of 76 nursing students were included in the study, 38 in the intervention group and 38 in the control group.

2.3. Forming intervention and control groups

Before the intervention and control groups were formed, the nursing undergraduate education curricula of Artvin Çoruh University Faculty of Health Sciences and Recep Tayyip Erdoğan University School of Health were examined. In both undergraduate programs, similar training programs (psychological assistance, psychological first aid, psychosocial support interventions in disasters) were not found to affect the results of the study. For realistic research results and because of the risk of students affecting each other, the experimental and control groups were determined from the universities in two different provinces where the geographic region, natural conditions and climate characteristics were similar. Randomization was achieved between the schools. In this respect, fourth grade nursing students of Artvin Çoruh University Faculty of Health Sciences formed the intervention group of the research, and the fourth grade nursing students studying at Recep Tayyip Erdoğan University School of Health formed the control group.

In order to determine the students in the intervention and control group, names of 50 fourth grade nursing students studying at Artvin Coruh University who accepted to participate in the research were written on small papers and put in a bag. Individuals from this bag were selected randomly. The same process was carried out with 68 fourth grade students who were studying at Recep Tayyip Erdoğan University School of Health and who wanted to participate in the research. After the random selection, values related to the perception of disaster preparedness in the intervention and control groups, the general self-efficacy, age, gender, having psychological first aid training and having psychological first-aid services were examined, and the individuals who received extreme values were excluded from the groups. As a result, homogeneity was ensured among the groups, and intervention and control groups of 38 persons were formed (Table 1).

There was no significant difference in the statistical evaluation between intervention and control groups in terms of demographic variables ($p > 0.05$).

2.4. Data collection tools

2.4.1. Personal information form

The form has been developed by reviewing the literature by the researcher, and consists of 16 questions that identify students' characteristics and perceptions of psychological aid in disaster (Chandra et al., 2014; Cheung, 2014; Cho, 2015; Nandhini and Sathyamurthi, 2015). Psychological first aid competencies of student nurses were evaluated with the question of the ability to provide psychological first aid in traumatic events that were added to the personal information form.

2.4.2. Nurses' perception of preparedness for disaster scale

This scale developed by Feride Özcan in 2013 to measure how prepared the nurses feel against a disaster. The scale consists of 20 items and 3 sub-dimensions which are Preparation phase (questions 1–6), Intervention phase (questions 7–15), Post-disaster phase

Table 1
Demographic characteristics of intervention and control group.

Demographic characteristics of intervention and control group		Intervention		Control		p
		n	%	n	%	
Gender	Female	25	65.8%	28	73.7%	$X^2 = 0.561$ $p = 0.309$
	Male	13	34.2%	10	26.3%	
Age	20	4	10.5%	1	2.6%	$X^2 = 6.478$
	21	9	23.7%	15	39.5%	$p = 0.166$
	22	14	36.8%	14	36.8%	
	23	4	10.5%	6	15.8%	
	24 and above	7	18.4%	2	5.3%	
Encountering with disaster	Yes	10	26.3%	10	26.3%	$X^2 = 0.000$
	No	28	73.7%	28	73.7%	p = 0,603
Considering useful to provide psychological first aid after disaster	Yes	34	89.5%	30	78.9%	$X^2 = 1.583$
	No	4	10.5%	8	21.1%	$p = 0.173$
Sufficiency of providing psychological first aid in traumatic events	Partially sufficient	16	42.1%	18	47.4%	$X^2 = 0.213$
	Totally insufficient	22	57.9%	20	52.6%	$p = 0.409$
Sufficiency of diagnosing psychosocial needs in traumatic events	Partially sufficient	21	55.3%	26	68.4%	$X^2 = 1.394$
	Insufficient	17	44.7%	12	31.6%	p = 0.173
Problem solving sufficiency in emergency situations	Partially sufficient	26	68.4%	20	52.6%	$X^2 = 1.983$
	Totally insufficient	12	31.6%	18	47.4%	$p = 0.120$
Individual endurance in case of traumatic events	Totally and partially enduring	25	65.8%	24	63.2%	$X^2 = 0.057$
	Not enduring	13	34.2%	14	36.8%	$p = 0.500$
Sufficiency of adequate coping to the adverse effects of traumas	Partially sufficient	18	47.4%	17	44.7%	$X^2 = 0.053$
	Totally insufficient	20	52.6%	21	55.3%	p = 0.500

(questions 16–20). The items of the scale is scored as five-point likert type (1-Strongly disagree, 2-Disagree, 3-Partially agree, 4-Agree, 5-Strongly agree). As the score obtained from the scale increases, the perception of disaster preparedness increases. Cronbach Alpha coefficient of the scale was found 0.90 and the test-retest reliability coefficient was reported as 0.98 (Özcan, 2013). In the present study, the scale's Cronbach Alpha was found to be α = 0.83 in the intervention group and α = 0.84 in the control group before the training, α = 0.76 in the intervention group and α = 0.80 in the control group after the training, α = 0.77 in the intervention group and α = 0.76 in the control group after the follow-up measurement.

2.4.3. General self-efficacy (GSE) scale

The scale was developed in Germany by Matthias Jerusalem and Ralf Schwarzer in 1981 and designed originally as 20-item scale. The scale, which was reduced to 10 items in 1981, was finalized in 1995. It was adapted to Turkish culture by Aypay (2010). It is known that the scale, which was translated into 28 languages including English, is used primarily by many researchers. The scale tests the belief of different circles in their ability to cope with new and difficult tasks. This is a simple 10 item scale and it is 4-point Likert type. The internal consistency of the scale was determined as α = 0.86 for all countries. High scores in items indicate high levels of general self-efficacy (Aypay, 2010). In the present study, the scale's Cronbach Alpha was found to be α = 0.83 in the intervention group and α = 0.81 in the control group before the training, α = 0.88 in the intervention group and α = 0.84 in the control group after the training, α = 0.87 in the intervention group and α = 0.84 in the control group after the follow-up measurement.

2.5. Creating psychological first aid training guideline for disasters

Psychological first aid training in disasters was not the content or part of any course. Students had not received such training before. The contents of the guidelines were created by the literature review of the researcher. Prior to creating the training guideline, the researcher participated in the Psychological First Aid and Psychological Practices in Trauma Studies training program. Immediately after the trainings, a 6-week, 6-hour psychological first aid training guide was created by the researcher to increase the knowledge, skills and awareness of nursing students. Many international publications have been used in order to reach the global perspective in the guideline (Akoury-Dirani et al., 2015; Brymer et al., 2006; Chandra et al., 2014; Cheung, 2014; Everly et al., 2012; Everly et al., 2014; IASC, 2007; Nandhini and Sathyamurthi, 2015; Snider et al., 2012; WHO, 2011). Support and expert opinion were received from Turkish and foreign experts for psychological first aid guideline in disasters. In order to carry out the training program, meetings were held with the students in the training group and the appropriate training hours and locations were determined.

2.6. Application of data collection tools

After the necessary explanations were made for the nursing students in the intervention and control groups who accepted to participate in the study, their verbal and written informed consent was obtained and Personal Information Form, Nurses' Perception of Preparedness for Disaster Scale, General Self-Efficacy Scale were applied to both groups. After the training program and 3 months after the completion of the training program, the measurement tools were implemented by an instructor who was not involved in this study. The instructor was present with the students during the implementation period. As the universities were located in different cities, the intervention and control group measurements were made every other day.

2.7. Application of the training program

In order to determine the students who were willing to participate in the research, the researcher prepared a poster describing the research and hung the poster in various parts of the classrooms in the Faculty of Health Sciences building.

In the application of the training program, students in the training group were randomly divided into four groups of 9 and 10 people in order to provide appropriate educational environment and student interaction. In order to ensure the motivation, fun and relaxation of the training group, warm-up games and exercises were conducted at the beginning and finalization stages of the sessions. All training sessions were conducted by the researcher, who had received psychological first aid training and training of psychological practices in trauma studies. The researcher is an educator who lectures the nurses from time to time, but is not their advisor. The researcher has shown a helpful attitude to the participants with exercises and role-playing. The researcher transferred the information content related to the agenda of

the session using interactive teaching techniques such as using audio-visual tools, making presentations, lecturing, question-answer, video demonstration and discussion, case studies, role play, abstract tree model. During the sessions, each group member was able to share his/her feelings and thoughts on the agenda both written and verbally. The members were able to ask questions to the group members or the researcher. The activities included in the sessions and the spontaneous responses of the members and the role-playing practices were discussed within the group. Psychological first aid in disasters training sessions were held in the intervention group for 6 weeks which lasted about 60 min once a week. No practices were conducted with the control group during this period. At the time of the training of intervention group, the control group continued their educational activities in their own schools. Students in the control group were explained that if there were those who wanted to receive psychological first aid training, they would be given training after the research. However, only 3 students received the training guide. Others did not request training. In the intervention group, no loss of subjects occurred during the training sessions.

2.8. Statistical analysis of the data

The PFA training program, the gender of the participants, the situations of exposure to disasters and the opinions of psychological aid in disaster constitute the independent variables of the study, general self-efficacy scale and nurses' perception of preparedness for disaster scale mean scores constitute the dependent variables. Research data were evaluated in SPSS 22.0 program.

Shapiro-Wilk normal distribution tests were applied before the comparison of disaster preparedness perception and general self-efficacy scale scores in intervention and control groups. Since the data did not conform to the normal distribution ($p > 0.05$), nonparametric analysis methods were used. The Mann Whitney-*U* test was used to compare the quantitative data between two independent groups and the Kruskal Wallis test was used to compare the quantitative data between more than two independent groups. The Mann Whitney-*U* test was used as a complement to determine the differences after the Kruskal Wallis test. Spearman correlation analysis was applied to the continuous variables of the study.

2.9. Ethical aspect

Before the research, written approval was obtained from the ethics committee of Artvin Coruh University (2016-4/Decision No:6), Artvin Coruh University Dean of Faculty of Health Sciences and Directorate of Health School of Recep Tayyip Erdogan University. Since the participation in the study was voluntary, written and verbal informed consent was obtained from the students in intervention and control groups who accepted to participate in the study.

3. Results

Table 2 shows the comparison of intervention and control groups' mean scores of the perception of preparedness for disaster scale.

Preparation Phase: it was determined that the preparation phase sub-dimension mean score of intervention group was significantly higher than the control group's mean score after the training program and in the follow-up measurement ($p < 0.01$).

When the preparation phase sub-dimension mean scores of the intervention group were compared, it was determined that the post-training and follow-up measurement mean scores of the intervention group were significantly higher than the pre-training mean score ($p < 0.01$).

When the preparation phase sub-dimension mean scores of the control group were compared, it was determined that the pre-training mean score of the control group was significantly higher than the post-training and follow-up measurement mean scores ($p < 0.01$). In the control group, it was observed that the preparation phase scores decreased gradually ($p < 0.01$).

Intervention Phase: it was determined that the intervention phase sub-dimension mean score of intervention group was significantly higher than the control group's mean score after the training program and in the follow-up measurement ($p < 0.01$).

When the intervention phase sub-dimension mean scores of the intervention group were compared, it was determined that the post-training intervention phase mean score was found to be significantly higher than the pre-training and follow-up measurement mean scores ($p < 0.01$). In addition, it was determined that intervention phase follow-up measurement mean score was significantly higher than the pre-training mean score ($p < 0.01$).

Post-Disaster Phase: it was determined that the post-disaster phase sub-dimension mean score of intervention group in post-training and follow-up measurement was significantly higher than the control group's mean score ($p < 0.01$).

When the post-disaster phase sub-dimension mean scores of the intervention group were compared, it was determined that the post-disaster phase sub-dimension mean score was found to be significantly higher than the pre-training and follow-up measurement mean scores ($p < 0.01$). In addition, it was determined that post-disaster phase follow-up measurement mean score was significantly higher than the pre-training mean score ($p < 0.01$).

Table 3 shows the comparison of intervention and control groups' general self-efficacy mean scores before and after the training program and in follow-up measurement. It was found that the mean self-efficacy scores of the intervention group after the training program and in the follow-up measurement were significantly higher than the control group ($p < 0.01$). In addition, it was determined that general self-efficacy scores of the intervention group in post-training increased compared to the pre-training, and this increase continued despite the decrease in the follow-up measurements ($p < 0.01$).

There was a weak, positive significant relationship between general self-efficacy and disaster preparedness phase scores in all three measurements ($p < 0.05$) (Table 4).

4. Dıscussion and conclusion

In this section, changes in Nurses' Perception of Preparedness for Disaster Scale sub-dimensions and General Self-Efficacy Scale pre-test and post-test and follow-up measurement mean scores were discussed.

a) Discussing nurses' perception of preparedness for disaster scale sub-dimension mean scores

Preparation Phase: Preparation phase mean score of the intervention group increased in post-training and follow-up measurement compared to pre-training, and this increase was higher than the increase in mean score of the control group ($p < 0.01$). While preparation phase mean scores increased in the intervention group, they gradually decreased in the control group ($p < 0.01$).

In a randomized controlled study to determine the effectiveness of psychological first aid training, Cheung (2014) stated that psychological first aid training, which includes basic interventions for disasters, is an effective training that provides aid workers with the necessary skills in preparing for disaster response. In the same study, it was determined that there was an increase in the self-efficacy of intervention group to provide emotional support for survivors in a disaster. Schafer et al. (2010) found that the PFA training given to Haitian health workers made them feel more prepared to work with distressed people in case of a disaster. As a result of the application of short questionnaire forms and group interview notes of 76 medical service group volunteers including nurses ($n = 27$), Chandra et al. (2014) found that psychological first aid training increased the confidence of individuals to help

Table 2
Comparison of sub-dimension mean scores of nurses' perception of preparedness for intervention and control groups.

Perception of preparedness for disaster scale	Intervention (n:38)	Control (n:38)	MW	p
	Mean ± SD (Med)	Mean ± SD (Med)		
Pre-training preparation phase	3.86 ± 0.68(4.0)	3.93 ± 0.71(4.0)	707.500	0.879
Post-training preparation phase	4.11 ± 0.41(4.1)	3.58 ± 0.45(3.7)	295.000	**0.000****
Follow-up measurement preparation phase	3.90 ± 0.35(3.8)	3.46 ± 0.57(3.3)	692.000	**0.000****
Friedman	X^2 = 8.40	X^2 = 24.59		
p	***p* = 0.015***	***P* = 0.000****		
Pre-training intervention phase	2.36 ± 0.37(2.3)	2.33 ± 0.45(2.4)	711.500	0.913
Post-training intervention phase	4.09 ± 0.34(4.1)	2.33 ± 0.43(2.3)	0.500	**0.000****
Follow-up measurement intervention phase	3.95 ± 0.43(4.0)	2.33 ± 0.44(2.3)	0.100	**0.000****
Friedman	X^2 = 57.83	X^2 = 26.27		
p	**p = 0.000****	*p* = 0.102		
Pre-training post-disaster phase	2.23 ± 0.41(2.2)	2.17 ± 0.43(2.2)	692.000	0.751
Post-training post-disaster phase	4.51 ± 0.39(4.2)	2.21 ± 0.42(2.1)	0.100	**0.000****
Follow-up measurement post-disaster phase	4.30 ± 0.46(4.4)	2.22 ± 0.44(2.3)	2.500	**0.000****
Friedman	X^2 = 63.16	X^2 = 9.38		
p	**p = 0.000****	*p* = 0.237		

Mann Whitney *U* test; Friedman test.
* $p < 0.05$.
** $p < 0.01$.

individuals with psychological distress and preparations for disaster situations.

Our study result, which is compatible with the literature, shows that psychological first aid training has a positive effect on the disaster preparation phase in the intervention group. At the same time, the decrease in the follow-up measurement in the intervention group suggests that training should be done again. It is suggested that high preparation phase pre-training mean scores of the control group and the decrease in the post-training and follow-up measurements are due to the fact that the tests and explanations about the subject have increased the awareness of the individuals about the lack of knowledge.

Intervention Phase: Post-training and follow-up measurement intervention phase mean scores of the intervention group were found to be statistically significantly higher than the mean scores of the control group ($p < 0.01$). In the intervention group, it was observed that the mean score of the intervention phase increased after the training and this increase continued in the follow-up period.

Cheung (2014) stated that there was an increase in the number of disaster response preparations of the intervention group as a result of 7-hour psychological first aid training in Hong Kong. After two assessment forms used to determine the knowledge of the PFA and the availability for the application, Akoury-Dirani et al. (2015) found an increase in information of how to deal with children experiencing traumatic events, information about things to avoid when listening to the history of a traumatized person, and how to treat refugees.

Schafer et al. (2010), found that the information and orientation empowered Haitian staff to assist others in distress and led to positive changes in their behaviour and approach to providing psychosocial support for people directly impacted by the emergency.

In the study examining the perceptions of providers ($n = 50$) who utilized PFA in response to Hurricane Gustav or Ike, Allen et al. (2010) found that participation in PFA training was perceived to increase confidence in working with adults and children.

In the study of Semlitz et al. (2013) carried out in Japan, after the PFA training, significant increase was seen in participants' ability to support people affected by disasters and other stressful events, in providing the necessary assistance to people affected by a disaster and in listening to the affected individuals. Our study findings also support the literature.

Post-Disaster Phase: The post-disaster post-training and follow-up measurement mean scores of the intervention group were found to be significantly higher than the mean scores of the control group ($p < 0.01$). It was determined that with repetitive measurements, the scores of the intervention group increased significantly after the training and this increase continued.

Chandra et al. (2014) found that about 78% of the participants were able to approach the psychological problems more easily after a disaster thanks to the psychological first aid training.

As a result of the application of likert-type measurement tool used to determine the perceived self-efficacy in the use of information and PFA principles after the training, Semlitz et al. (2013) determined that participants had a significant increase in their ability to assess the needs of people affected by the disaster, in distinguishing normal stress reactions and mental health problems, in not giving harm while helping people affected by the disaster, in determining what kind of interventions or activities could be harmful to people affected by the disaster.

In a consensus-derived, empirically supported, competency-based PFA training model (RAPID–PFA) of Everly et al. (2012), it was found that the participants had an increase in their knowledge about emergency mental health interventions and they could define acute

Table 3
Comparison of general self-efficacy mean scores of intervention and control groups.

General self-efficacy scores	Intervention	Control	MW	p
	Mean ± SD (Med)	Mean ± SD (Med)		
Pre-training general self-efficacy	26.711 ± 3.344(26)	27.000 ± 2.568(27)	683.500	0.687
Post-training general self-efficacy	34.000 ± 2.941(34)	26.711 ± 2.192(27)	24.500	**0.000****
Control measurement general self-efficacy	33.711 ± 2.640(34)	26.474 ± 2.089(26)	29.000	**0.000****
Friedman	X^2 = 55.143	X^2 = 2.774		
p	**p = 0.000****	*p* = 0.250		

Mann Whitney *U* test; Friedman test.
** $p < 0.01$.

Table 4
Correlation table of general self-efficacy and disaster preparation phase scores.

		Pre-training preparation phase	Pre-training intervention phase	Pre-training post-disaster phase	Pre-training GSE	Post-training preparation phase	Post-training intervention phase	Post-training post-disaster phase	Post training GSE	Control measurement preparation phase	Control measurement intervention phase	Control measurement post-disaster phase	Control measurement GSE
Pre-training preparation phase	r	1.000											
	p	0.000											
Pre-training intervention phase	r	0.188	1.000										
	p	0.259	0.000										
Pre-training post-disaster phase	r	−0.021	0.271	1.000									
	p	0.900	0.100	0.000									
Pre-training GSE	r	0.321*	0.200	0.495	1.000								
	p	0.049	0.229	0.102	0.000								
Post-training preparation phase	r	0.409	0.197	0.145	0.484	1.000							
	p	0.111	0.235	0.383	0.522	0.000							
Post-training intervention phase	r	0.226	0.094	0.042	0.170	0.410	1.000						
	p	0.172	0.573	0.803	0.306	0.211	0.000						
Post-training post-disaster phase	r	0.041	0.182	0.348	0.062	0.044	0.113	1.000					
	p	0.807	0.275	0.133	0.712	0.794	0.500	0.000					
Post training GSE	r	0.030	0.065	0.227	0.321	0.332*	0.069	−0.042	1.000				
	p	0.859	0.697	0.170	0.550	0.042	0.681	0.804	0.000				
Control measurement preparation phase	r	0.066	0.279	0.152	0.307	0.612**	0.277	0.013	0.360*	1.000			
	p	0.694	0.090	0.361	0.061	0.000	0.093	0.937	0.026	0.000			
Control measurement intervention phase	r	0.133	−0.161	−0.187	0.120	0.250	0.483	0.018	−0.214	−0.018	1.000		
	p	0.426	0.335	0.261	0.475	0.130	0.102	0.914	0.197	0.913	0.000		
Control measurement post-disaster phase	r	0.283	0.131	0.103	0.180	0.312	0.287	0.419	0.044	−0.140	0.415	1.000	
	p	0.085	0.434	0.538	0.280	0.056	0.080	0.109	0.792	0.403	0.110	0.000	
Control measurement GSE	r	−0.030	−0.046	0.309	0.057	0.345*	0.606**	0.235	0.243	0.262	0.339*	0.331*	1.000
	p	0.857	0.785	0.059	0.733	0.034	0.000	0.156	0.142	0.112	0.037	0.043	0.000

* < 0,05.
** < 0,01.

problems more accurately.

As a result of the structured evaluation form, the likert scale and the open-ended questions used to determine the PFA learning objectives and overall program quality, McCabe et al. (2008) reported that 91.52% of the participants could identify post-traumatic stress disorder symptoms, 90.6% of them could describe the symptoms of stress and acute stress disorder, and 89.6% of them could plan self-care strategies for spiritual care providers.

After the application of two evaluation forms, after PFA training and in measurements one month later, Akoury-Dirani et al. (2015) reported that participants had a significant increase in their ability to distinguish post-traumatic stress disorder symptoms and in providing appropriate support to victims in trauma cases.

Our study results and related literature suggest that this information increases the confidence in the awareness and skills of post-disaster applications.

b) Discussing general self-efficacy scale

General self-efficacy post-training and follow-up measurement mean scores of the intervention group were found to be significantly higher than the mean scores of the control group ($p < 0.01$). The mean scores of the post-training self-efficacy scores of the intervention group were significantly higher than the pre-training mean scores and this difference continued in the follow-up measurement ($p < 0.01$). Our results suggest that general self-efficacy can be increased by training.

In order to determine the effectiveness of psychological first aid training by using self-efficacy scale, Cheung (2014) found that self-efficacy scores of the control group remained unchanged in post-training, at the 3rd month and 6th month follow-up, while the self-efficacy scores of the intervention group increased in post-training and at the 3rd month, and this increase in the score was maintained at the 6th month measurements. The findings of this research are similar to our research findings. In addition to the findings of this research, there are studies in the literature examining the self-efficacy in order to determine the effectiveness of psychological first aid training and showing that the self-efficacy of the participants increased at the end of the training (Akoury-Dirani et al., 2015; Chandra et al., 2014).

c) Correlation discussion of general self-efficacy and disaster preparedness phase scores

İt was found that individuals' perception of disaster preparedness increased as general self-efficacy perceptions increased.

Marceron and Rohrbeck (2019) stated that there was a strong relationship between actual emergency preparedness behaviors and self-efficacy, and self-efficacy about being prepared might increase preparedness behaviors. Paton et al. (2005) stated that there was a positive relationship between the perception of disaster preparedness and self-efficacy, and they found a strong agreement between earthquake preparedness and self-efficacy. Sawyer et al. (2013) reported a positive relationship between self-efficacy and performance. High self-efficacy perception contributes to better intervention and effective performance of nurses in case of a disaster. Jonson et al. (2017) found that the nurses' effective decision-making and management skills in stressful situations increased significantly thanks to the training program which developed general self-efficacy of the chief nurses.

In the literature, psychological first aid training was given to the health workers including nurses in the elderly home (Brown et al., 2009), members of the clergy in a faith-based organization (McCabe et al., 2008), aid workers with health backgrounds (Schafer et al., 2010), manager and peer supporters of the police force (Lewis et al., 2013), and general public and citizens (Everly et al., 2012; McCabe et al., 2011).

The PFA field operation guide developed by the National Child Traumatic Stress Network and the National Center for PTSD (2006) from the United States, RAPID-PFA model, “PFA: Guide for Field Workers” published by WHO (2011), “listen, protect, connect model” (Ramirez et al., 2013), community based psychological first aid program were used in given trainings. In this study, information about the principles and techniques of PFA application (Akoury-Dirani et al., 2015) PFA preparedness perceptions (Schafer et al., 2010), PFA application self-efficacy and feasibility of the training model (McCabe et al., 2008), personal endurance against disasters (Everly et al. (29)), the effect of PFA interventions on depression and posttraumatic stress disorder (Ramirez et al., 2013) information of identifying acute problems in disaster situations (Everly et al., 2012), obstacles to psychological first aid application and PFA satisfaction were evaluated. In this study, nursing students were given training using 6 h of interactive training techniques based on 8 steps in the PFA practice of Brymer et al. (2006). As a result of the trainings, the participants were measured after the training and 3 months after the training with a measurement tool that directly measured the perceptions of preparedness and general self-efficacy in a possible disaster situation.

5. Conclusion and recommendations

- In conclusion, it was determined that psychological first aid training given to nursing students had positive effects on all phases of disaster preparedness and general self-efficacy perceptions.
- Accordingly, it is recommended to extend the training on psychological first aid. In addition, it was observed that the scale scores of the students decreased slightly in follow-up measurements.
- Accordingly, it may be recommended to repeat the trainings at regular intervals. In our study, the effectiveness of the training program was measured by indirect measurement tools. It is thought that it would be useful to develop measurement tools to determine the psychological first aid application attitudes and behaviors of nurses.

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Ethical approval

Approval of the ethical committee of Artivan Çoruh University, institutional permission from the Office of the Dean of the Medical Sciences College of Artvin Çoruh University and the Office of the Principal of Medical Junior College of Recep Tayyip Erdogan University as well as Feride Özcan's consent for using the Scale for the Perception of Disaster Preparedness Among Nurses were obtained. In addition, the written consents of all students who took part in the study were obtained as well.

Authorship contributions

Concept – N.K. N.Ş., Design – N.K.; Supervision – N.K., N.Ş.; Fundings - N.K.; Materials – N.K.; Data collection &/or processing – N.K.; Analysis and/or interpretation – N.K., N.Ş.; Literature search – N.K.; Writing – N.K.; Critical review – N.K., N.Ş.

Declaration of competing interest

None.

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