



Research article

# Psychological Preparedness of the Rescuers and Volunteers: A Case Study of 2023 Türkiye Earthquake

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**Abstract:** When disaster strikes, first responders must be not only operationally and logistically but also psychologically prepared. Psychological preparation for a potential adverse event can have a critical impact on the success of responses, and recovery efforts. This paper aims to analyze the psychological preparedness of rescuers and volunteers from Bosnia and Herzegovina who were assigned to the mission of minimizing the consequences of the earthquake in the Republic of Türkiye in February 2023. As a module in the training of the organizations that engaged them, the existence of psychosocial assistance provided to rescuers and volunteers (psychological first aid) in the circumstances of natural disasters was analyzed. The psychological readiness of the rescuers sent from Bosnia and Herzegovina to perform the assigned tasks and their status and condition during the mission were analyzed. The research was conducted in the period March – June 2023 using an anonymous questionnaire with combined questions. The results of this research determined that the majority of respondents believe that training aimed at protecting mental health and preventing the harmful effects of stressful situations in their work organization does not meet the challenges they encountered during the rescue mission in the Republic of Türkiye in February 2023. The results of this research highlight the need to find practical solutions - the inclusion of psychosocial assistance activities. It is therefore vital that psychological preparedness be included in emergency response plans.

**Keywords:** rescuers, volunteers, psychological preparedness, earthquake, Türkiye

## 1. Introduction

In the last decade, there has been an increase in natural disasters caused by climate change, accompanied by floods, landslides, extreme temperatures, storms, droughts and fires. Natural phenomena aided by human activities cause disasters. Most often, without warning, in a very short time, causing great losses in human lives and destroying the material infrastructure. Disaster resilience encompasses a broad array of strategies crucial for communities, organizations, and individuals to effectively prepare for, respond to, and recover from adverse events. Adaptive methods are employed to reinforce infrastructure, reduce risks, and give first responders and impacted communities' well-being top priority (Rico et al., 2019; Öcal, 2019). Education plays a pivotal role in fostering disaster resilience by equipping communities and responding organizations with essential knowledge and skills. School-community collaboration enhances situational awareness and adaptive responses tailored to local contexts (Rico et al., 2019; Öcal, 2019). Technological integration, particularly through social media, revolutionizes disaster preparedness and response by enhancing information dissemination and public awareness (Mano et al., 2019). Psychological resilience is equally critical, addressing the

profound impacts disasters have on mental health. Robust support systems, including psychological first aid and stress management training, are essential for supporting the well-being of responders (Cvetković, 2023). Natural disasters can cause a significant amount of distress, as well as potential damage to people's mental health. According to author Shoygu (Шойгу, 2010), this was a major factor in the development of emergency psychological aid as a separate area of psychological treatment. During and after natural disasters, psychological effects such as emotional instability, reactions to stress, anxiety, trauma, and other psychological symptoms of the victims have been recorded. Mental disorders in disaster victims are most often not psychosis but reflect symptoms of affective disorders accumulated by stress. Victims of disasters who are psycho-traumatized should often be viewed as normal persons whose clinical symptoms are only a reaction to an abnormal situation (Ненадовић, 2013). A person who has experienced a stressful situation should not be treated as a patient but as a normal person. It is necessary to maintain the belief that normality will soon return (Малкина-Пых, 2005). Alleviating the suffering of disaster victims is carried out by providing psychological care. Psychological support is a composite term that is defined as any type of internal and external support that aims to protect or improve psychosocial well-being, prevent mental disorders, and facilitate treatment if necessary (IASC, 2007). The development of the stress response is largely determined by the nature of the stressor (Shoygu, 2009), that is, by its qualitative and quantitative characteristics. Author Shoygu (2009) adds that the presence of a stressor alone does not determine the development of a stress reaction. She also believes that many researchers tend to consider stress resistance as a result of training, but it should not be denied that each person has a certain set of personality traits and physiological characteristics that define their stress resistance. Undoubtedly, future research is needed to better understand the predictors of resilience.

This paper aims to analyze the psychological preparedness of rescuers and volunteers assigned to the mission of minimizing the consequences of the February 2023 earthquake in the Republic of Türkiye. The existence of psychosocial assistance provided to rescuers and volunteers (first psychological aid) in the circumstances of natural disasters is a module in the training of the organizations that engaged them. The psychological readiness of the rescuers sent from Bosnia and Herzegovina to perform the assigned tasks, their status, and condition during the mission was also analyzed. The results of the survey can be used when creating a strategy for training programs of mental health protection for rescuers and volunteers and contribute to the organized improvement of their psychological benefits in order to provide assistance in overcoming the traumatic event. Following, the procedure and appropriate commitment can be utilized in arrange to lessening the possibility of mental results within the frame of post-traumatic stretch clutter. In order to achieve the goal of this work, research was conducted with members of the protection and rescue forces of the Republican Administration of Civil Protection of the Republic of Srpska, volunteers of the Mountain Rescue Service of the Federation of Bosnia and Herzegovina, and members of the Armed Forces of Bosnia and Herzegovina, all of whom were engaged in February 2023 an earthquake rescue mission in Republic Türkiye. This paper is structured and consists of five parts. Part one is an introduction. In the second part, materials and methods are presented. The third part contains the findings of research conducted in the period March – June 2023. The fourth part refers to the discussion of the research results, while the conclusion is given at the end.

### *1.1. Literary review*

The fact is that at the global level, there is consistent scientific literature that treats the consequences of a natural disaster on rescuers and volunteers (Dyregrov et al., 1996; Малкина-Пых, 2005; Шойгу, 2010; Forbes et al., 2011; Kleim & Westphal, 2011; Рыбников и Ашанина, 2011; Fox et al., 2012; Lewis-Schroeder et al., 2018; Helfman, 2018; SAMHSA, 2018; Jones et al., 2020; Alden et al., 2021; Polemikou, 2021; Lowery & Cassidy, 2022). When disaster strikes, first responders must be not only logistically prepared, but also psychologically prepared. Psychological preparation for a potential event can have a critical impact on the success of responses as well as recovery efforts. It is therefore vital that psychological preparedness be included in the emergency plans of emergency response organizations. It is believed that organizations should consider introducing training for rescue and humanitarian workers to provide psychological first aid, and that it is important for emergency planners to prioritize the mental health of their members in the planning process (Coleman, 2021 cited in Guterman, 2005).

Training can help individuals cope with the stresses of everyday life or minor acts of violence. Some research has been conducted to identify recommendations for interventions to reduce risk and to promote resilience after an incident. The assumption is that occupations performing their roles during natural disaster response are likely to have more training and thus be more psychologically and psychologically prepared. It is suggested to take care of the training and preparation of employees (Brooks et al., 2016). Greater preparedness and ability to mitigate the impact of negative factors, taking into account the frequency, nature, and intensity of traumatic exposure and the cumulative impact on mental health, concern for personal safety, etc., is achieved with appropriate training (Brooks et al., 2016; Jones, 2017). That is, all employees should undergo appropriate and specialized training that will equip them with the skills, knowledge, and confidence to work in challenging and stressful conditions, with psychological first aid being the most important (Brooks et al., 2016). Training employees in psychological first aid can improve the sense of camaraderie (belonging to a team/college) and, at the same time, train employees in peer support (Brooks et al., 2016). Psychological first aid training has been found to provide a framework for supporting others following traumatic events and to lead to greater confidence in providing support, as well as helping to overcome others' psychological distress. The results of research conducted with police officers (Kouvatsou et al., 2022) revealed that police officers, who received training in providing psychological first aid according to the adapted version of the World Health Organization (World Health Organization, War Trauma Foundation, & World Vision International, 2011, 2013) significantly increased their self-confidence, knowledge, attitudes, and skills about psychological first aid and showed an increased sense of confidence in their capacity to provide it. Research evidence shows that training in psychological first aid significantly improves knowledge of appropriate psychosocial responses and skills to support people in acute distress, thereby increasing self-efficacy and promoting resilience (Wang et al., 2021). Authors (2021) stated in their work that the knowledge and systemic impact of psychological first aid training on participants is promising. Psychological first aid can be considered a specific crisis-focused intervention used during and after natural disasters (Everly & Lating, 2021). It is designed for use in the assessment and mitigation of acute stress and serves as a platform for psychological triage to complement more traditional psychological and psychiatric interventions. The authors Everly and Lating (2021) believe that psychological first aid can be applied among first responders as peer support.

A systematic review of factors influencing the psychological well-being of engaged disaster health workers (Brooks et al., 2015). These factors can be grouped by, one predeployment (preparation/training); two during-mission factors (length of deployment/time; traumatic exposure; emotional involvement; leadership; interagency cooperation; support; role; demands and workload; safety/equipment; trust/guilt; coping strategies); and three post-mission factors (support, media, personal and professional development). The authors (2015) found that factors not specific to the humanitarian mission often pose a significant risk to the health of humanitarian workers. Poor leadership and poor support have been noted as work stressors that affect employees' psychological well-being. Aid organizations should prioritize strengthening relationships between team members and supervisors to improve the psychological resilience of their workforce. Examining the level of post-traumatic stress disorder and burnout in volunteers who provided first aid, a high level of anxiety and depression was determined, as well as the need for greater psychosocial support was emphasized (Rowe et al. 2022). The authors (2022) found that resilience training and peer support would be useful interventions. Organizations should have a clear policy framework on the protection of staff within the management of traumatic events, and managers should be aware of key risk factors and use them when identifying particularly vulnerable groups of employees who may need additional support (Brooks et al., 2016). This includes education and training programs for psychological first aid providers in an organizational context (supervisors, managers, work colleagues, and health professionals, where relevant) as well as recipients (who are themselves members), with the aim of peer support, while supervision groups should be led by professionally trained moderators (Малкина-Пых, 2005).

Preliminary evidence suggests changes in knowledge, awareness, and confidence in the use of psychological first-aid interventions by managers and colleagues following such training (Allen et al., 2010; Lewis et al., 2013). Suggestions for pre-deployment training content ranged from safety orientation (Benedek et al., 2007; Brooks et al., 2017; Coleman, 2021), organizational values, job briefings, to accommodation provision courses, nutrition, situational awareness (Coleman, 2021), psychological first aid (Benedek et al., 2007; IFRC, 2009; Brooks et al., 2016), medical first aid training, and cultural safety training courses (Benedek et al., 2007; Brooks et al., 2016).

Support before and during disaster relief activities can be key to preventing and minimizing the negative impact of stressors. Promoting self-care consistent with stress monitoring can play a central role in psychosocial support (Umeda et al., 2020). Responsible helping also means that rescuers and volunteers should take care of their health and well-being. Members of the first response forces must take care of their health and mental state. In this way, they are psychologically and emotionally capable of helping others. Taking care of yourself is a condition for helping others in the best possible way, and working in a team also means taking care of your colleagues (World Health Organization, War Trauma Foundation, & World Vision International, 2011, 2013; Sphere Association; 2018).

In 2009, the European Union established the European Network for Traumatic Stress (ESTSS, 2023). The European Network for Traumatic Stress (TENTS) is recognized as one of the leading projects in the harmonization of psychosocial support standards across Europe. Although it is not a binding document, guidelines have been developed for all European Union countries, and they include a set of interventions ranging from first aid (provision of first psychological aid) to long-term care (remediation of the consequences of disasters). These guidelines aim to develop a network of European experts for psychosocial assistance and treatment of post-traumatic stress in accident victims, and to establish a more effective mental health service (ESTSS, 2011a, 2011b). The aforementioned guidelines were developed 2008 at Cardiff University, Wales, United Kingdom by authors Bisson and Tavakoly with contributions from partners of the TENTS (Bisson and Tavakoly, 2008). These guidelines were also published in the Serbian language (TENTS, 2009, 2011a, 2011b). In accordance with TENTS guidelines, which are not binding in nature, psychosocial assistance to emergency services personnel / rescuers, and volunteers in the general assistance model foresees the planning of procedures that will help prevent burnout and traumatization. These procedures include: 1) regular shifts (so that people do not work longer than necessary); 2) technical debriefing after the end of the shift; and 3) support systems. Support systems include regular supervision, consultation with colleagues and external advisors, and techniques for building a collective spirit aimed at unity and support in the team (Marčeta and Vrućinić, 2022, cited in Bisson & Tavakoly, 2008).

The Psychological First Aid and Psychosocial Support in Complex Emergencies project (PFA-CE) was financed by the European Union in the period from 2017 to 2019. The partners in the project were: the Austrian Red Cross (project coordinator), the University of Innsbruck (Austria), and the national Red Cross organizations of Croatia, Italy, North Macedonia, Serbia, and Slovenia (PFA-CE, 2017). The project sought to improve the capacity to respond to disasters by strengthening the competencies of employees in national Red Cross organizations and volunteers in the field of psychological first aid and psychosocial support. In order to improve the inclusion and active participation of crisis-affected communities, families, and population groups in disaster response, community activation tools have been developed.

## 2. Methods



Part of the results of a larger research project with the objective of ascertaining the influence of stressful elements on the psychological stability of volunteers and rescuers, in addition to the presence, necessity, and significance of psychosocial support – also known as psychological first aid – offered to volunteers and rescuers during natural disasters conducted between March and June of 2023, are presented in this paper.

### 2.1. Questionnaire Design

The survey instrument was a survey questionnaire with combined questions. The survey questionnaire for this research was created based on questionnaires that have been used in previous research (Marčeta, 2021). Survey questions were formed based on the guidelines of the European Network for Traumatic Stress – TENTS (ESTSS, 2011a, 2011b), which were confirmed through the PFA-CE 2017-2019 project (PFA-CE, 2017).

### 2.2 Research Limitations

The limitation of the research refers to the fact that it was based only on the persons engaged in the rescue mission to minimize the consequences of the earthquake in the Republic of Türkiye in

February 2023 who were willing to participate in the research. In the rescue mission in the Republic of Türkiye, 22 members of the rescue team of the Republican Administration of Civil Protection of the Republic of Srpska (RACP RS), 42 members of the rescue team of the Federal Administration of Civil Protection of the Federation of Bosnia and Herzegovina (FACP FBiH), 10 members of the rescue team of the Department of Public Security of Brčko District of Bosnia and Herzegovina (DPS DB) and 167 members of the Mountain Rescue Services (MRS) from the entire BiH (МБ БиХ, 2023) participated in the rescue mission in the Republic of Türkiye. 10 members of the Armed Forces of Bosnia and Herzegovina (AF BiH) are also involved in humanitarian missions to minimize the consequences of the earthquake in the Republic of Türkiye (МО БиХ, 2023). The research was conducted with members of the protection and rescue forces of the RACP RS, volunteers from the MRS FBiH, and members of the AF BiH. Members of the MRS FBiH were surveyed from MRS stations: Visoko, Tuzla, Zenica, Novi Grad - Sarajevo, Kakanj, Mostar and Travnik. In the humanitarian mission to minimize the consequences of the earthquake in the Republic of Türkiye, 10 members of the AF BiH were engaged, consisting of 6 officers, 3 non-commissioned officers, and 1 soldier (МО БиХ, 2023). The final survey was conducted on a sample of 34 respondents.

### *2.3 Implications and Future Directions*

Members of the rescue teams from the following organisations: the FACP FBiH, the DPS DB, and the Association for Assistance in Extraordinary Circumstances "WOLF" Foča did not want to participate in the research after seeing the survey questions. This points to the need for new research on the existence and measure of sincere and supportive relationships within work organizations, and the subject of the research would be the level of organizational culture of work organizations. In doing so, it would be examined at what level rescuers and volunteers can openly talk and share problems without fear of consequences, i.e., whether they feel safe to talk about stress and seek help. We encourage future researchers to expand upon this work.

### **3. Results**

The research was conducted on a deliberate sample of respondents who were engaged in a rescue mission to minimize the consequences of the earthquake in the cities of Kahramanmaraş and Antakya in the Republic of Türkiye in February 2023. The survey instrument was a survey questionnaire with combined questions. In this part, the results of the research and the final purpose and goal of this empirical research are presented.

Structuring time by defining the main areas of work and ranking priorities significantly reduces stress. By reviewing what has been done, the schedule for today and the priorities for tomorrow, activities are determined depending on the assistant's own oscillations in daily functioning. They depend on the ability of the helper and the difficulty of the tasks, as well as the energy to carry them out. Helpers must be aware of their capabilities, so it is necessary to review their expectations. The helper must first meet the basic needs of life. He must have free time to relax. Relaxation techniques can be passive (walking, reading, music) and active, which are systemic and targeted relaxation techniques, and are carried out to achieve a state of calm (Ajduković et al., 2016; World Health Organization, War Trauma Foundation, & World Vision International, 2011, 2013; Crveni krst Srbije, 2017; Црвени крст Србије, 2018).

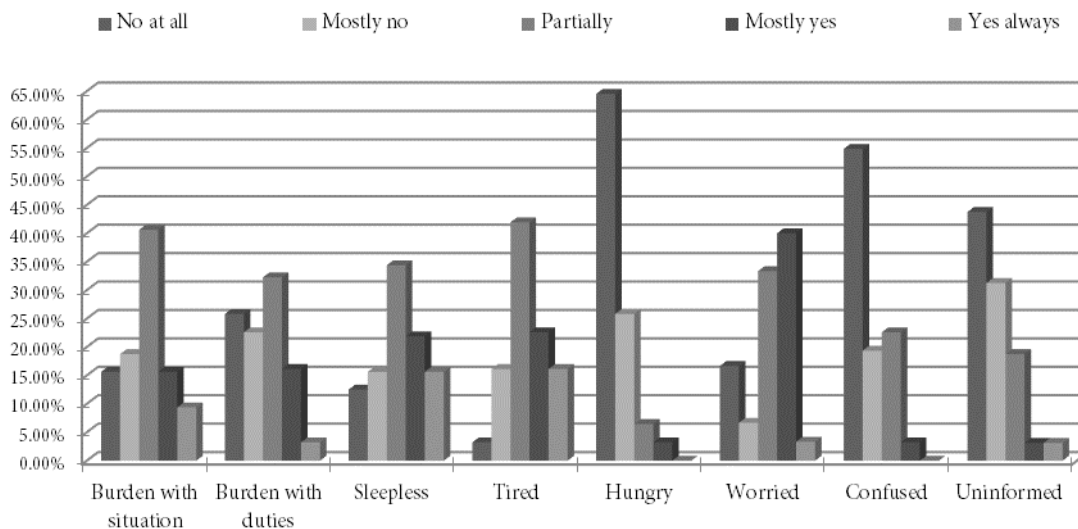
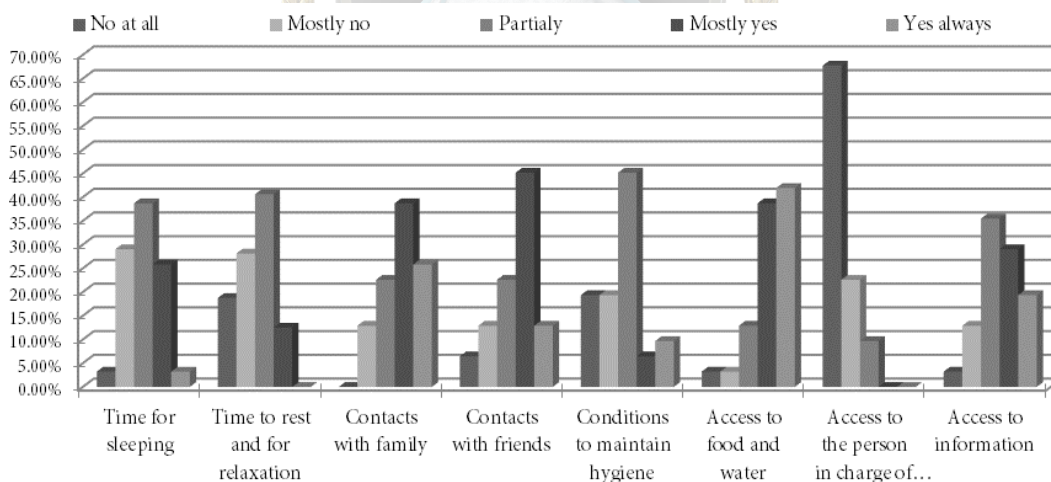


Figure 1. Question Q1 – Status of crew members during 2023 Türkiye earthquake rescue mission

To determine the status of rescue team members during the earthquake rescue mission in Turkey, a five-point Likert scale was used (1 [not at all] to 5 [yes always] for responses to the first question: “During the rescue mission I was:?”. Concerning the situation during the rescue mission, four (11.76%) respondents chose not to respond. Three respondents (8.82%) did not react when questioned about their condition during the rescue mission, including their load, level of exhaustion, and whether or not they were hungry or confused. When asked if the circumstances were weighing on them, if they were sleep deprived or misinformed throughout the rescue operation, two members (5.88% of the total) chose not to respond.



\*MHP/PSA – Mental Health Protection/Psychosocial assistance

Figure 2. Question Q2 – Conditions of crew members during 2023 Turkey earthquake rescue mission

To determine the conditions of the rescue team members during the earthquake rescue mission in Turkey, a five-point Likert scale (1 [not at all] to 5 [yes always]) was used to answer the second question: “During the rescue missions I had:?”. Questionnaires about bedtime, contact with family and friends, conditions for hygiene maintenance, and information access (i.e., who is responsible for mental health protection and psychosocial aid) were not responded by three (8.82%) respondents. Regarding the question of whether they had enough time to rest during the rescue mission, two respondents (5.88%) chose not to comment.

**Table 1.** Question Q3 – Relationship between training and challenge

Q3 Training aimed at protecting mental health and preventing the harmful effects of stressful situations in my work organization corresponds to the challenges I encountered during the rescue mission in the Republic of Türkiye in February 2023.								
	n	%	n	%	n	%	N	%
Completely yes	0	0,00	0	0,00	0	0,00	0	0,00
Mostly yes	1	12,50	2	12,50	0	0,00	3	8,82
Partially	1	12,50	3	18,75	4	40,00	8	23,53
Mostly no	1	12,50	1	6,25	2	20,00	4	11,76
Not at all	1	12,50	3	18,75	3	30,00	7	20,59
I do not know	4	50,00	7	43,75	1	10,00	12	35,29
	RACP RS		MRS FBiH		AF BiH		TOTAL	

A five-point Likert scale was used (1 [completely yes] to 5 [not at all]) for responses to the third question to determine the training aimed at protecting mental health and preventing the harmful effects of stressful situations on the status of rescue team members during the earthquake rescue mission in Turkey. When asked: “Do training aimed at protecting mental health and preventing the harmful effects of stressful situations in my work organization correspond to the challenges I encountered during the rescue mission in the Republic of Türkiye in February 2023?” (Table 1), the majority of respondents think that the training does not meet the challenges they encountered during the mission. Few respondents (8.82%) think that the training primarily addresses the challenges they faced during the rescue mission in the Republic of Turkey in February 2023. For unexplained reasons, up to 12 (35.29%) respondents are unclear about the answer to this question.

According to the findings, work organizations should modify their training programs in the near future. Training plans must address psychological readiness since a member’s psychological preparedness for a potential event can significantly affect the effectiveness of psychological reaction and psychological recovery efforts. The mental health of participants should be taken into account when designing training, and the training planners should incorporate targeted training that protects mental health and minimizes the negative impacts of stressful situations. That is, according to Brooks et al. (2016), all staff members should receive suitable and specialized training that will provide them the abilities, know-how, and self-assurance to perform under demanding and stressful circumstances. In such situations, psychological first aid is crucial.

**Table 2.** Question Q4 – The need for conducting training in the provision of psychological first aid

Q4 In my opinion, in my work organization there is a need to train rescuers/volunteers in providing psychological first aid to the injured population.								
	n	%	n	%	n	%	N	%
Completely yes	7	87,50	6	37,50	7	70,00	20	58,82
Mostly yes	0	0,00	5	31,25	2	20,00	7	20,59
Partially	0	0,00	2	12,50	1	10,00	3	8,82
Mostly no	0	0,00	2	12,50	0	0,00	2	5,88
Not at all	0	0,00	0	0,00	0	0,00	0	0,00
I do not know	1	12,50	1	6,25	0	0,00	2	5,88
	RACP RS		MRS FBiH		AF BiH		TOTAL	

On a Likert scale from 1 to 5 (1 [completely yes] to 5 [not at all]), respondents rated the extent to which they agreed with the statement “In my opinion, there is a need for training of rescuers/volunteers

*in my work organization in providing psychological first aid to the injured population".* Training in psychological first aid was deemed necessary by the majority of respondents (Table 2).

Providing psychological first aid training to staff members can enhance their sense of camaraderie and belonging to a team or collective while also teaching them peer support techniques. According to Brooks et al. (2016), receiving training in psychological first aid can boost one's confidence in offering assistance and assisting in easing the psychological suffering of others. It can also give one a framework for helping others after experiencing traumatic situations.

#### 4. Discussion

It is evident that the minimal conditions were not fulfilled when inquired about their status during the rescue operation. The volunteers and rescuers who were interviewed felt that the organization and timing were improper. Responses indicated that there was regular communication with family, as well as with friends. Low standards of organization and provision of hygienic necessities were present. There was ample food and water supplied. It was discovered in the sample of volunteers and rescuers who were questioned it is not feasible to get in contact with the person in charge of psychosocial support or mental health protection. Information was satisfactorily accessible. When asked about their conditions during the rescue mission, responses were recorded that rescuers and volunteers were quite burdened by the situation, while the burden of duties was less pronounced. Two notable phenomena among the respondents were fatigue and insomnia. Most respondents expressed concern, but it's also important to emphasize that they were not really confused. The majority of respondents were informed.

The findings imply that in the upcoming term, work organizations should modify their training programs. Psychological readiness needs to be included of training plans since a member's psychological preparedness for a prospective event can have a significant impact on the effectiveness of the psychological response as well as psychological recovery efforts. Training designers should think about training that protects mental health and minimizes the negative impacts of stressful conditions.

Regarding the need for conducting training in the provision of psychological first aid, the majority of respondents stated that psychological first aid training was necessary. Providing psychological first aid training to staff members can enhance their sense of camaraderie and belonging to a team or collective while also teaching them peer support techniques (Brooks et al., 2016). Psychological first aid is a non-medical, non-professionalized activity performed by non-medical staff and volunteers in the affected community (Bisson & Lewis, 2009; Кордић, 2018), while emergency psychological help is the professional activity of psychologists and unique independent field of psychological practice (Shoygu, 2014; Шапапов et al., 2023). The fact that the initial psychological aid is frequently provided is due to the fact that Russian Federation psychologists prefer emergency psychological assistance. In the course of the 2014 floods, the European Network for Traumatic Stress - TENTS (ESTSS, 2011a, 2011b) guidelines were consulted and confirmed by the PFA-CE 2017–2019 project (PFA-CE, 2017) for the Team for the Coordination of Psychosocial Assistance and Support in the Republic of Srpska (Marčeta, 2021). The World Health Organization, Foundation for War Trauma, & World Vision International (2011, 2013) have all cited the availability of psychological first aid as the basis for their 2017 and 2018 field worker guides (Crveni krst Srbije, 2017; Црвени крст Србије, 2018) and their 2020 presence in Bosnia and Herzegovina (World Vision Bosna i Hercegovina, 2020) are examples of these developments. The diverse approaches taken by European countries to integrate psychosocial support into their emergency response plans, underscoring the importance of addressing the emotional and psychological needs of responders and communities during crises. Drawing lessons from examples in the United Kingdom, Norway, Sweden, Germany, and the Netherlands, Bosnia and Herzegovina can glean practical insights for enhancing its own emergency response practices. Implementing peer support programs similar to those in the UK (Police Federation of England and Wales, 2024) and establishing psychosocial support teams modeled after Norway's initiative (Norwegian Red Cross, 2024) could bolster support for responders experiencing stress or trauma. Adopting training programs akin to Sweden's for psychological first aid and stress management (MSB, 2024), along with establishing psychological support units inspired by Germany's model (BBK, 2024), could further strengthen Bosnia and Herzegovina's response capabilities. Moreover, developing a comprehensive framework for psychosocial support, such as the Crisis Care Continuum in the Netherlands (Government of the Netherlands, 2024), could enhance coordination



and effectiveness in disaster response efforts. By prioritizing comprehensive training, clear protocols, and proactive community engagement, Bosnia and Herzegovina can enhance its capacity to address the emotional and psychological needs of responders. Undoubtedly, the decision-makers, in conjunction with the recommendations of research and educational facilities, will determine which model of psychological assistance will be selected and implemented into practice.

## 5. Conclusions

A portion of the findings of a larger research project, which was implemented from March to June 2023, are presented to a sample of respondents: members of the protection and rescue forces of the Republican Administration of Civil Protection of the Republic of Srpska, volunteers from the Mountain Rescue Service of the Federation of Bosnia and Herzegovina, and members of the Armed Forces of Bosnia and Herzegovina who were engaged in a rescue mission to minimize consequences of the February 2023 Türkiye earthquake. The truth is that the study is limited and only includes persons who were involved in the rescue mission to minimize the effects of the earthquake and were willing to participate. Despite the foregoing, the findings of this study should be used to identify practical solutions. These solutions include incorporating psychosocial assistance activities, such as psychological first aid as a training module, into the planning and implementation of preparedness measures, immediate response measures, and quick response and recovery measures.

The main goal of this study was to assess the psychological readiness of rescuers and volunteers from Bosnia and Herzegovina who were assigned to the mission of minimizing the consequences of the earthquake in the Republic of Türkiye in February 2023. An analysis of the psychological readiness of the rescuers to execute the tasks they were given, as well as their status and condition during the mission, was done.

Based on the study's findings, the majority of those surveyed feel that the difficulties they faced during the February 2023 rescue mission in the Republic of Türkiye were not adequately addressed by the training designed in their work organization in order to protect the rescuers' and volunteers' mental health and minimize the negative effects of stressful situations.

The findings of this study should serve as indicators for the identification of feasible solutions, such as the incorporation of psychosocial support activities. Various European countries have implemented robust psychosocial support mechanisms within their emergency response systems to address the needs of responders and affected individuals during crises. These mechanisms include counseling services, peer support programs, psychosocial support teams, and training programs on psychological first aid and stress management. Additionally, some countries deploy psychological support units during emergencies. Thus, it is essential to include psychological readiness into emergency response plans. Implementing peer support programs, establishing psychosocial support teams, and adopting training initiatives aligned with successful European models can significantly strengthen Bosnia and Herzegovina's resilience framework. Ultimately, investing in these strategies not only mitigates risks but also enhances societal cohesion and sustainability in the face of future challenges.

**Author Contributions:** The following actions were undertaken by the research team members: project conceptualization and execution, questionnaire dissemination and data collection Ž.M.; data analyze and interpretation and theory development, Ž.M. and D.J.; writing – original draft preparation, Ž.M.; writing – review and editing, Ž.M. and D.J.; while D.J. critically reviewed the data analysis and contributed to the content for revising and finalizing the manuscript. All authors have read and agreed to the published version of the manuscript.

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Appendix A

Responses to the first question: "During the rescue mission I was:?" among different crews are:

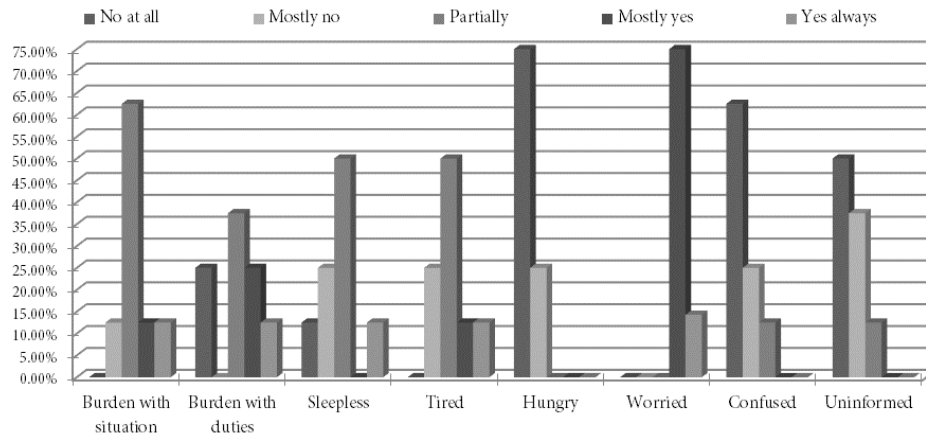


Figure 3. Status of the RACP RS members

A single respondent (12.50%) chose not to comment when asked if he was worried during the rescue operation.

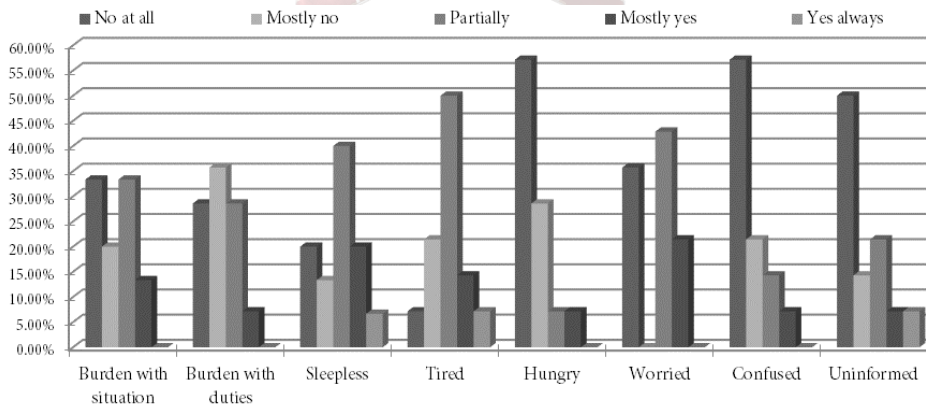


Figure 4. Status of the MRS FBiH members

When questioned about their condition during the rescue operation, two respondents (12.50%) decided not to respond to the question about the workload, exhaustion, concern and confusion, as well as whether or not they were hungry or uninformed. Regarding the burden of the situation, i.e., the lack of sleep - one respondent (6.25%) chose not to react.

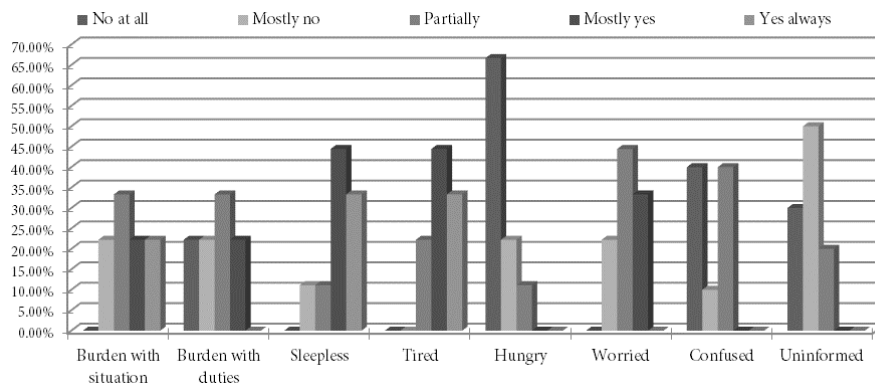


Figure 5. Status of the AF BiH members

Just the question about lacking information was answered by one(10.00%) respondent; the other questions went unanswered.

Appendix B

Responses to the second question: "During the rescue missions I had:?" among different crews are:

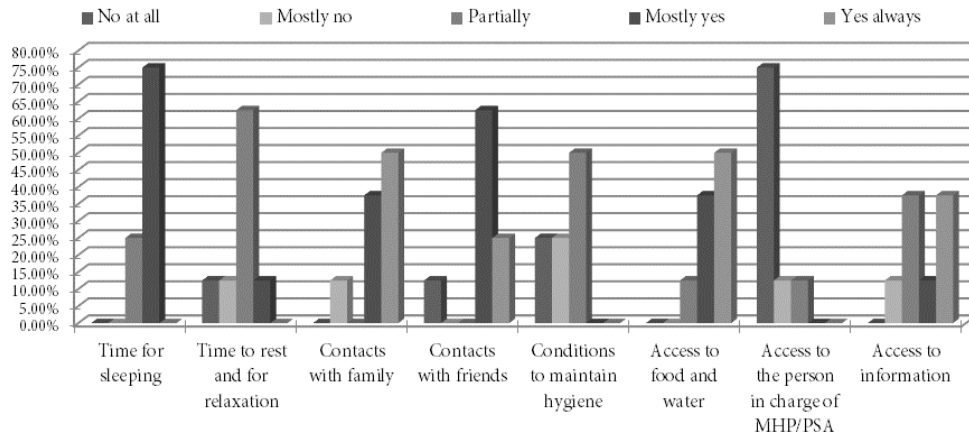
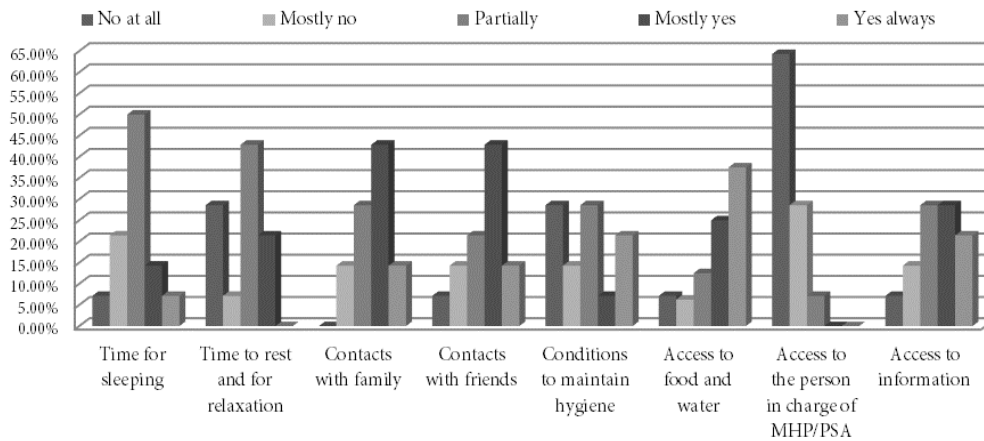


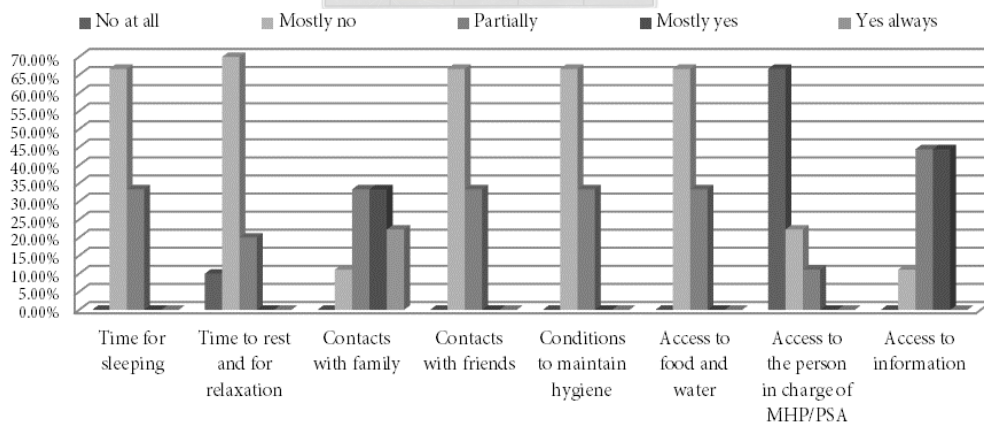
Figure 6. Conditions of the RACP RS members



\*MHP/PSA – Mental Health Protection/Psychosocial assistance

Figure 7. Conditions of the MRS FBiH members

Regarding the conditions during the rescue mission - two (12.50%) respondents did not answer any question.



\*MHP/PSA – Mental Health Protection/Psychosocial assistance

Figure 8. Conditions of the AF BiH members

One (10.00%) respondent answered only the question related to time for rest and relaxation, while he did not answer the other questions.

## References

1. Ajduković, D., Bakić, H., i Ajduković, M. (2016). *Psihosocijalna podrška u kriznim situacijama velikih razmjera*. Zagreb: Hrvatski Crveni križ.
2. Alden, L., Matthews, L., Wagner, S., Fyfe, T., Randall, C., Regehr, C., White, M., Buys, N., Carey, M., Corneil, W., White, N., Fraess-Phillips, A. & Krutop, E. (2021): Systematic literature review of psychological interventions for first responders, *Work & Stress*, 35(2), pp. 193-215.
3. Allen, B., Brymer, M., Steinberg, A., Vernberg, E., Jacobs, A., Speier, A. & Pynoos, R. (2010). Perceptions of psychological first aid among providers responding to Hurricanes Gustav and Ike. *Journal Trauma Stress*, 23(4), pp. 509-513.
4. BBK. 2024. Federal Ministry of the Interior, Building and Community. Federal Office of Civil Protection and Disaster Assistance. <https://www.bmi.bund.de/EN/topics/civil-protection/bbk/bbk-node.html> , Accessed: 2024-06-12.
5. Benedek, D., Fullerton, C., & Ursano, R.J. (2007). First Responders: Mental Health Consequences of Natural and Human-Made Disasters for Public Health and Public Safety Workers. *Annual Review of Public Health*, 28(1), pp. 55-68.
6. Bisson, J., & Lewis, C. (2009). *Systematic Review of Psychological First Aid*. Geneva: World Health Organisation.
7. Bisson, J., & Tavako, B. (2008). *The TENTS Guidelines for Psychosocial Care following disasters and major incidents*. United Kingdom: Cardiff University, Wales.
8. Brooks, S., Dunn, R., Amlôt, R., Greenberg, N., & Rubin, G. (2016). Social and occupational factors associated with psychological distress and disorder among disaster responders: a systematic review. *BMCPsychology* ,18(4).
9. Brooks, S., Dunn, R., Sage, C., Amlôt, R., Greenberg, N., & Rubin, G. (2015). Risk and resilience factors affecting the psychological wellbeing of individuals deployed in humanitarian relief roles after a disaster. *Journal of mental health* 24(6), pp: 385-413.
10. Coleman, D. (2021). *Disaster response and mental health: Working towards psychological well-being for volunteers* (Master's thesis). Victoria: Royal Roads University, Faculty of Social and Applied Sciences.
11. Crveni krst Srbije. (2017). *Psihološka prova pomoć: Vodič za terenske radnike*. Beograd: Crveni krst Srbije.
12. Cvetković, V. M. (2023). *Otpornost na katastrofe - Vodič za prevenciju, reagovanje i oporavak - Disaster resilience - A Guide to Prevention, Response and Recovery*. Beograd: Naučno-stručno društvo za upravljanje rizicima u vanrednim situacijama. [https://www.researchgate.net/publication/375645109\\_Otpornost\\_na\\_katastrofe\\_-\\_Vodic\\_za\\_prevenciju\\_reagovanje\\_i\\_oporavak\\_-\\_Disaster\\_resilience\\_-\\_A\\_Guide\\_to\\_Prevention\\_Response\\_and\\_Recovery](https://www.researchgate.net/publication/375645109_Otpornost_na_katastrofe_-_Vodic_za_prevenciju_reagovanje_i_oporavak_-_Disaster_resilience_-_A_Guide_to_Prevention_Response_and_Recovery) , Accessed: 2024-06-12.
13. Dyregrov, A., Kristoffersen, J., & Gjestad, R. (1996). Voluntary and professional disaster-workers: similarities and differences in reactions. *Journal of Trauma Stress*, 9(3), pp. 541-555.
14. ESTSS. (2011a). *Interventions in the aftermath of disaster*. Amsterdam: Academic Medical Center University.
15. ESTSS. (2011b). *The TENTS Guidelines for psychosocial care following disasters and major incidents*. Cardiff: Cardiff University.
16. ESTSS. (2023). *The European Society for Traumatic Stress Studies*. <https://estss.org/about/> , Accessed: 2024-04-10.
17. Everly, G. & Lating, J. (2021). Psychological first aid (PFA) and disasters. *International Review of Psychiatry*, 33(8), pp: 718-727.
18. Forbes, D., Lewis, V., Varker, T., Phelps, A., O'Donnell, M., Wade, D., Ruzek, J., Watson, P., Bryant, R. & Creamer, M. (2011). Psychological first aid following trauma: implementation and evaluation framework for high-risk organizations. *Psychiatry Interpersonal & Biological Processes* 74(3), pp. 224-239.
19. Fox, J., Burkle M., Bass, J., Pia, F., Epstein, J., & Markenson D. (2012). The effectiveness of psychological first aid as a disaster intervention tool: research analysis of peer-reviewed literature from 1990 - 2010. *Disaster Medicine and Public Health Preparedness*, 6(3), pp. 247-252.

20. Government of the Netherlands. 2024. MHPSS resilience & self-reliance. <https://www.government.nl/topics/mhpss/mhpss-resilience-self-reliance> , Accessed: 2024-06-12.
21. Guterman P. (2005). Psychological preparedness for Disaster.
22. Helfman, L. (2018). How Do First Responders Experience and Cope With Trauma? *The Dialogue*, 14(1), pp. 14-16.
23. IASC. (2007). *IASC Guidelines on Mental Health and Psychosocial Support in Emergency Settings*. Geneva: IASC.
24. IFRC. (2009). *Psychosocial interventions: A handbook*. Copenhagen: IFRC Reference Centre for Psychosocial Support
25. Jones S. (2017). Describing the mental health profile of first responders: a systematic review. *J Am Psychiatr Nurses Assoc*. 23(3), pp. 200-214.
26. Jones S., Agud, K. & McSweeney, J. (2020). Barriers and Facilitators to Seeking Mental Health Care Among First Responders: "Removing the Darkness". *Journal of the American Psychiatric Nurses Association*, 26(1). pp. 43-54.
27. Kleim, B., & Westphal, M. (2011). Mental Health in First Responders: A Review and Recommendation for Prevention and Intervention Strategies. *Traumatology*, 17(4), pp. 17-24.
28. Kouvatsoy, Z., Degermedgoglou, G., Karamagioli, E. & Pikoulis, E. (2022). Psychological First Aid Training of Police Officers. *Journal of Police and Criminal Psychology*, 37, pp. 856-862.
29. Lewis, V., Varker, T., Phelps, A., Gavel, E., & Forbes, D. (2013). Organizational Implementation of Psychological First Aid (PFA): Training for Managers and Peers. *Psychological Trauma: Theory, Research, Practice, and Policy*, 6(6).
30. Lewis-Schroeder, N., Kieran, K., Murphy, B., Wolff, J., Robinson, M., & Kaufman, M. (2018). Conceptualization, Assessment, and Treatment of Traumatic Stress in First Responders: A Review of Critical Issues. *Harvard Review of Psychiatry*, 26(4), pp. 216-227.
31. Lowery, A. & Cassidy, T. (2022) Health and well-being of first responders: The role of psychological capital, self-compassion, social support, relationship satisfaction, and physical activity. *Journal of Workplace Behavioral Health*, 37(2), pp. 87-105.
32. Mano, R., Technion Kirshcenbaum, A., & Rapaport, C. (2019). Earthquake preparedness: A social media fit perspective to accessing and disseminating earthquake information. *International Journal of Disaster Risk Management*, 1(2), 19-29. <https://doi.org/10.18485/ijdrm.2019.1.2.2> , Accessed: 2024-06-12.
33. MSB.2024. MSB - Swedish Civil Contingencies Agency. <https://www.msb.se/en/> , Accessed: 2024-06-12.
34. Norwegian Red Cross. (2024). Support our work. <https://www.rodekors.no/en/about-us/support-our-work/> , Accessed: 2024-06-12.
35. Öcal, A. (2019). Natural disasters in Turkey: Social and economic perspective. *International Journal of Disaster Risk Management*, 1(1), 51-61. <https://doi.org/10.18485/ijdrm.2019.1.1.3> , Accessed: 2024-06-12.
36. PFA-CE. (2017). *Psychological First Aid and Psychosocial Support in Complex Emergencies*. Brussels: European Commission, European Civil Protection and Humanitarian Aid Operations. [https://ec.europa.eu/echo/funding-evaluations/financing-civil-protection-europe/selected-projects/psychological-first-aid-and\\_en](https://ec.europa.eu/echo/funding-evaluations/financing-civil-protection-europe/selected-projects/psychological-first-aid-and_en) , Accessed: 2024-04-10.
37. Polemikou, A. (2021). Disaster-Induced Psychological Trauma: Supporting Survivors and Responders. In: Pikoulis, E., Doucet, J. (eds), *Emergency Medicine, Trauma and Disaster Management. Hot Topics in Acute Care Surgery and Trauma*. Springer, pp. 545-554.
38. Police Federation of England and Wales. 2024. Mental health. <https://www.polfed.org/our-work/wellbeing/mental-health/> , Accessed: 2024-06-12.
39. Rico, G. C. S. (2019). School-community collaboration: Disaster preparedness towards building resilient communities. *International Journal of Disaster Risk Management*, 1(2), 45-59. <https://doi.org/10.18485/ijdrm.2019.1.2.4> , Accessed: 2024-06-12.
40. Rowe, C., Ceschi, G., & Boudoukha, A. (2022). Trauma Exposure and Mental Health Prevalence Among First Aiders. *Frontiers in psychology*, 13, Article 824549.

41. SAMHSA. (2018) Disaster Technical Assistance Center Supplemental Research Bulletin First Responders: Behavioral Health Concerns, Emergency Response, and Trauma. Rockville: SAMHSA.
42. Shoygu, J. (2014). Psychological aid in crisis and emergency situations: Psychological follow-up by emergency-related professionals. *Psychology in Russia: State of the Art*, 7(4), pp. 33-42.
43. Shoygu, J. (Ed.). (2009). Psychology of extreme situations. Moscow: Smysl, Academia.
44. Sphere Association. (2018). *The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response* (4<sup>th</sup> edition). Geneva: Sphere Association.
45. Umeda, M., Chiba, R., Sasaki, M., Agustini, E. N., & Mashino, S. (2020). A Literature Review on Psychosocial Support for Disaster Responders: Qualitative Synthesis with Recommended Actions for Protecting and Promoting the Mental Health of Responders. *International journal of environmental research and public health*, 17(6), 2011. <https://doi.org/10.3390/ijerph17062011> , Accessed: 2024-04-10.
46. 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), Article 4594.
47. World Health Organization, War Trauma Foundation, & World Vision International. (2011). *Psychological first aid: Guide for field workers*. Geneva: World Health Organization.
48. World Health Organization, War Trauma Foundation, & World Vision International. (2013). *Psychological first aid: Guide for field workers*. Geneva, World Health Organization.
49. World Vision Bosna i Hercegovina. (2020). *Psihološka prva pomoć: vodič za terenske radnike*. Sarajevo World Vision BiH.
50. Кордић, Б. (2018). Концепт и пракса психолошке прве помоћи. *Годишњак Факултета безбедности*, стр. 41-52.
51. Marčeta, Ž., & Vrućinić, Ž. (2022). Psychosocial Support by Rescuers and Volunteers in the Circumstances of National Disasters. *Journal of Security and Criminal Sciences*, 4(2), pp. 23-37.
52. Малкина-Пых., И. (2005). *Психологическая помощь в кризисных ситуациях*. Москва: Эксмо.
53. Марчета, Ж. (2021). *Психосоцијална помоћ у околностима природних катастрофа* [Psychosocial assistance in the context of natural disasters] (Мастер рад) [Master's thesis]. Бања Лука: Универзитет у Бањој Луци, Факултет безбједносних наука.
54. МБ БиХ. (2023). *Рјешење о приступу информацијама број: 01-6-04-6-5015-1/23 од 2.8.2023. године*. Сарајево: Министарство безбједности БиХ.
55. МО БиХ. (2023). *Одлука о давању подршке за спровођење научног истраживања у МО и ОС БиХ број: 06-03-10-1591-8/23 од 9.2.2023. године*. Сарајево: Министарство одбране БиХ.
56. Ненадовић, М. (2013). *Психијатријска помоћ и психосоцијална подршка људима у ванредним ситуацијама*. <https://fedorabg.bg.ac.rs/fedora/get/o:7454/bdef:Content/get> , Accessed: 2024-04-10.
57. Рыбников, В. и Ашанина Е. (2011). *Психология копинг-поведения специалистов опасных профессий*. Санкт-Петербург: Политехника сервис.
58. Црвени крст Србије. (2018). *Психосоцијална подршка у несрећама – Приручник за професионалце и волонтере Црвеног крста Србије*. Београд: Црвени крст Србије.
59. Шарапов, А., Пчелкина, Е. и Логинова О. (2023). *Экстренная психологическая помощь: учебное пособие для вузов*. Москва: Издательство Юрайт.
60. Шойгу, Ю. (2010). Принципы оказания экстренной психологической помощи в условиях чрезвычайных и экстремальных ситуаций. *Вестник Санкт-Петербургского университета*, № 12 (1), с: 162-168.
61. Шойгу, Ю. (2012). Организация деятельности психологической службы МЧС России. *Национальный психологический журнал*; № 1 (7), с: 131-133.
62. Шойгу, Ю. (Ред.). (2007). *Психология экстремальных ситуаций для спасателей и пожарных*. Москва: Смысл.