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STRESS AND IMPORTANCE OF PSYCHOLOGICAL PREPARATION OF FIREFIGHTERS

Abstract: *A firefighter career is one of the most demanding in the world. Everyday effort and stress, as well as the dangers of this profession, make it one of the most difficult occupations. Firefighters are exposed to various sources of stress that can cause certain psychological issues. Indicators of stress in firefighters can be classified into physical, emotional and behavioral. There are various ways to prevent the occurrence of stress, as well as how to reduce the effects of stress if it occurs. Significant factors affecting the effectiveness of firefighters during intervention are firefighting equipment, techniques and tactics. However, if the firefighter is not mentally prepared, motivated and trained, the outcome of firefighting intervention could be unpredictable. Therefore, the role of the psychologist is to provide psychological assistance to firefighters after difficult interventions.*

Key words: *firefighters, psychological selection, occupational stress.*

INTRODUCTION

The job of a firefighter is, by all means, one of the most demanding occupations in the world. Everyday effort and stress, as well as the dangers and risks of this profession, make it one of the noblest and one of the most difficult occupations at the same time. If we take into account the state of Serbian institutions, we conclude that firefighters in Serbia have an even more difficult task to respond to constant challenges.

In the United States, among "civilian occupations", the job of a firefighter is assessed as the most stressful [1]. During work, firefighters are exposed to various sources of stress that can cause psychological difficulties [2]. Psychologists deal with these problems of mental readiness, professional stress and motivation. By acting at different command levels in firefighting, psychologists can make a strong contribution to readiness and contribute to human resource challenges.

The job of firefighters

The work of firefighters is characterized by exposure to all forms of physical, chemical and biological endangerment of life and health, and is often performed in uncontrolled working conditions. Its key features are stress and risk. Their long-term impact on health and work ability is constantly emphasized. In the Republic of Serbia, firefighting is defined as a professional, but also humanitarian activity of exceptional national importance. Firefighting also involves the implementation of preventive measures against fire and explosion, firefighting and rescue of people and property endangered by fire and explosion, providing technical assistance in accidents and dangerous situations and performing other tasks in various accidents. Given the many potential dangers, harms and damage to health to which firefighters are exposed

during firefighting interventions, firefighters' health surveillance must be comprehensive and continuous if we want to detect deviations on time and prevent further deterioration of health. If we desire to assess the degree of difficulty and the psychophysical efforts of firefighters, the following criteria should be taken into account: the urgency of action, the unpredictability of operations, long-term shift work and constant state of readiness, and psychophysical responses during the intervention [3].

Firefighters mainly work during peacetime; however, they are equally involved in war-related interventions. In peacetime, firefighters participate in disaster response, emergency actions to rescue people and material goods. The modern way of life requires the use of new chemicals and materials with different properties and behavior in the combustion process as well as the use of novel technologies, so it is very difficult to predict and plan all types of interventions [4]. Interventions can be roughly divided into three types: accidents, fires, technical interventions. Accidents can be classified as follows: water accidents, construction site accidents (pumping water-closing water-gas), accidents in industry, traffic accidents and accidents-events where no people are involved. Fires can be divided as follows: chimney fires, landfill fires, surface fires that are fueled by grass, shrubs, low-lying vegetation, and forest fires; transportation fires, fires in buildings, fires in industry or production facilities and fires-events where no people are involved. Technical interventions in the frame of firefighting include: technical assistance such as the emergency opening of apartments, technical interventions on a building, technical interventions in the open space - repairing / removing obstacles, firefighter interventions to rescue people and animals, technical interventions in traffic

[5]. The likelihood of risk occurrence for a particular intervention is represented in five categories: very unlikely, unlikely, possible, likely, and very likely.

It is theoretically possible that all types of risks occur with each intervention under certain conditions. These risks, as well as the probability of their occurrence during the intervention, were assessed based on the experience of the interviewed firefighters. In all types of interventions, there is a physical effort (dynamic and static), as well as psychophysiological effort (stress), which differ in type and intensity depending on the work performed within a particular job [6]. Workplace risks have been assessed for the following jobs: unit commander, deputy unit commander, shift commander, deputy shift commander, fire brigade leader, firefighter/driver, firefighter.

Risks, hazards and efforts that firefighters face can be divided into the following groups [7]:

- mechanical hazards: handling chainsaw, hydraulics, falls from heights, falls on a single level and falls to a lower level, dangers of mines and explosives, dangers of landslides
- dangers of electric shock
- thermal hazards: hot parts, subcooled parts (technical gases)
- chemical hazards: dust, gases, vapors, mists, liquids, etc.
- biological hazards: bacteria, fungi, viruses (all human and animal secretions)
- dangers from domesticated and farm animals, and wild animals (e.g. bites, etc.)
- microclimate: work in all weather conditions (heat, cold, humidity)
- insufficient lighting during the intervention
- physical exertion: lifting, carrying loads, working in an unfavorable posture, overhead working, kneeling, lying position
- psychophysiological efforts (stress, uncertainty, working in a time gap, human casualties, etc.).

Due to the very specific working conditions and numerous risks that cannot be completely eliminated, it is important to keep records of fire brigade interventions and possible injuries at work, in order to apply the best possible measures and reduce the occurrence of injuries.

Sources of psychological stress

Stress is a topic that has been extensively discussed in the last twenty years since the modern way of life triggers various situations that are inherently stressful. As a result, an increasing number of people are affected by stress and suffer from its consequences. There are different types of stress - physiological, sociological and psychological.

Physiological stress occurs as a reaction of the organism to harmful stimuli, while sociological stress is a reaction of a social community exposed to stressors [8]. Psychological stress has the strongest negative impact on firefighters. Stress, generally, represents a

situation in which the balance is disrupted in a certain way and the resulting change requires a person's psychological adjustment.

If the personal balance is shifted or disrupted significantly and if the pressure is extremely high, the person must make considerable effort to adapt. This is known as the situation of intense psychological stress. Whether a situation will be stressful for a person depends on whether the person perceives the situation as threatening or not [9]. The same situation can be experienced by two or more people in different ways, i.e. for some it can be extremely stressful, and for another person, it may not be stressful at all, and they can even enjoy it. For example, driving a fire truck at high speed to arrive at the scene of an intervention can be extremely stressful for some firefighters, while others could enjoy this kind of driving. Moreover, there are differences in stress tolerance among people. Some people can easily manage higher levels of stress compared to others. We usually distinguish between high, limited and low resistance to stress. This should be taken into account when assessing the individual abilities of firefighters and assigning individual tasks within the unit. Firefighters are exposed to various sources of mental stress during work. In firefighters, we distinguish between "organizational" and "non-organizational" sources of stress, and sources of stress that are related to the "state of readiness" and those directly related to firefighting intervention [10]. In addition to the usual sources of stress that have a negative impact, there are specific sources of stress for firefighters. The most significant sources of stress related to the work of firefighters are:

- feeling of lack of personal competence and/or competence
- lack of prescribed procedures or standard operating procedures,
- unclear, ambiguous, incomplete or contradictory procedures,
- insufficient training and work with rescue equipment,
- the need for quick decision-making, with insufficient information,
- high risk of collapse and risk of injury or victims trapped under the rubble,
- inability to quickly access a victim in need of immediate assistance,
- exposure to disturbing, highly stressful and potential traumatic events (severely injured and/or fatally injured persons, seeing mutilated bodies, body parts, etc.),
- exposure to the media and the public,
- contacts with the victims' family and friends,
- the need to assist victims (eg first aid, psychological assistance, etc.),
- limitations in objective rescue possibilities (lack of resources, extremely unfavorable rescue conditions, etc.),

- managing untrained groups of volunteers who spontaneously get involved in search and rescue,
- poor coordination and difficult cooperation with other rescue teams at the scene of an accident or disaster, etc.

Certain signs help firefighters more easily recognize the state of stress among them and other fellow firefighters. Signs that indicate the existence of stress in firefighters can be classified into physical, emotional and behavioral [11].

Physical signs of stress in firefighters are:

- frequent headaches,
- rapid heartbeat,
- stiff neck and pain in the shoulders,
- rapid breathing,
- back pain,
- trembling or muscle tension,
- sweating, sweaty palms,
- stomach pain,
- high blood pressure,
- dry throat,
- dizziness, etc.

Emotional signs of stress in firefighters are:

- fear or anxiety,
- emotional tension,
- aggressiveness,
- guilt,
- job dissatisfaction,
- tension,
- anxiety,
- irritability,
- boredom,
- apathy,
- sadness,
- depression.

Cognitive symptoms are:

- forgetfulness,
- fluctuation of attention,
- observation errors,
- decreased concentration,
- slow or too fast decision making,
- decline in creativity,
- thought blocking, intrusive thoughts and increased suggestibility.

Behavioral changes:

- reduced productivity,
- absences from work,
- eating disorder,
- increased consumption of addictive substances,
- sleep disturbance,
- propensity of conflict,
- withdrawal.

Psychological preparation and training

Given that psychological stress can have an extremely negative impact on firefighters, during the action itself, but also after its completion, it is important to prepare and train firefighters to successfully deal with stressful and potentially traumatic situations. It is necessary to conduct psychological preparation of firefighters, on several levels. Planning and implementation of psychological support for firefighters are carried out by qualified psychologists in cooperation with fire commanders at the strategic, tactical and operational levels [12]. Psychological preparation should be carried out:

- during the implementation of various training programs for members of the fire brigade, or
- immediately before taking action (if possible in time), and in particular before sending the rescue team as part of international assistance to other countries affected by a major disaster or catastrophe.

In such situations, it is necessary to implement the psychological preparation programme of the families of firefighters who are sent to international rescue operations. The appropriate form of psychological support is mandatory after the rescue operation, especially if firefighters were members of the Rescue Team exposed to highly stressful or potentially traumatic events (finding and caring for the dead and seriously injured, serious injury or death of rescue team members, etc.). The task of the psychologist is to carry out the procedure of disaster relief training and thus accelerate the psychological recovery, and prevent the occurrence of severe psychological difficulties such as post-traumatic stress disorder (PTSD) and suicide among firefighters.

As part of the psychological preparation, firefighters need to be trained in the basics of psychological first aid as early intervention during the rescue operations under the rubble [13]. Accidents, and especially major accidents and catastrophes, have a strong psychological effect on both firefighters, and Rescue Team members, and the injured. Rescuers should be aware not only of the material needs of the victims but also of their psychological needs and be prepared to provide first aid.

Effects and consequences of psychological stress

Exposure to highly stressful and/or traumatic experiences during rescue operations can result not only in certain psychological difficulties but also mental disorders. As a result of experiencing a traumatic event, a person may suffer from anxiety, depression and PTSD, and even the risk of suicide and suicide attempts [14]. An analysis of a large number of professional and scientific papers in the field of accident and disaster psychology [15] found that disasters cause a strong psychological impact on

rescuers, which is associated with various factors divided into three categories:

- factors before the rescue operation (working conditions, special training and preparation, life experience and health),
- factors related to the accident (exposure to the undesirable event, engagement at the scene and time of arrival, emotional involvement, exposures to trauma, role-related stressors, safety perception, level of threat and risk, personal injury, social and professional support) and
- factors after a disaster (professional psychological support, the impact of a harmful event on life, life experience, media, etc.) [16].

The importance of education and training of the fire brigades and teams

The level of competencies and training of the Rescue Team, in addition to efficiency, also contributes to psychological resilience to highly stressful and potentially traumatic situations. In addition to training to work with wreck rescue equipment and implementing standard operating procedures, it is very important to train firefighters and team members on how to successfully deal with stressful situations during the rescue. The high level of competence and training of the Rescue Team strengthens self-confidence and self-esteem and indirectly alleviates the level of psychological stress during the rubble rescue operation. This is supported by a study comparing the psychological status of members of rescue teams who had formal training (firefighters, members of the Red Cross and Red Crescent) and student volunteers who did not have formal training to deal with traumatic situations during rescue under the rubble in the earthquake in the city of Bam in Iran in 2003. The quake affected the province of Kerman in southeastern Iran, and the city of Bam was the worst hit, killing more than 26,000 people and injuring more than 30,000. The results of the study showed that student volunteers who did not have formal training to deal with stressful and traumatic situations found a significant number of those who had criteria for diagnosing PTSD and showed more pronounced anxiety compared to those who underwent formal training to deal with stressful situations [17].

The importance of psychological orientation and selection

Saving human lives is one of the most demanding jobs that firefighters do. In addition to extremely high physical fitness, ability to handle various tools, skills and knowledge of various rescue techniques, an extremely important aspect is a high level of cognitive functioning, mental stability and resistance to psychological stress. In determining the ability of knowledge and skills of candidates, it is necessary to conduct screening of candidates (psychological testing and psychological interview). Psychological selection aims to select the candidates who are strongly

predisposed to work as firefighters [18]. By giving a good assessment of suitability for the role of firefighters, and candidates for the Rescue Team, we select the candidates who will be ready to deal with the greatest challenges and difficulties. No matter how strong one's motivation to join the Rescue Team, it is necessary to select those candidates who will be able to rescue the injured in the most difficult physical and mental conditions relying on their abilities, knowledge and skills.

Ways of overcoming stress in firefighters

There are various ways to prevent the occurrence of stress, or how to mitigate the effects of stress if it occurs. One of the most effective and simplest ways to prevent and alleviate stress in firefighters is physical exercise [19]. The fire brigade should develop a positive attitude towards exercise and encourage firefighters to acquire and maintain the required level of daily physical fitness, and create conditions for its practice. Diet plays an important role in maintaining health and preventing many diseases. Proper nutrition, with foods that belong to "healthy food", affects various body systems that have an impact on the occurrence of stress. Various breathing and relaxation techniques, stretching exercises, yoga, massage, aromatherapy, etc., help the firefighter feel relaxed and thus strengthen the body's resistance to stress [20]. It is important to avoid excessive consumption of alcohol, cigarettes, taking medication without medical supervision, etc. Developing a positive attitude towards life and optimism, creating good social relationships, and laughter which is a great form of stress relief can help people relax and reduce stress. Finally, it is necessary to emphasize the importance of psychological evaluation of candidates - Firefighter Candidate Assessment - for enrollment in the School of Fire Services. In that way, only candidates who, among other necessary predispositions, have a high resistance to stress will be selected.

CONCLUSION

Common factors affecting the effectiveness of firefighters during interventions are firefighting equipment, techniques and tactics. However, if a firefighter is not well-prepared, motivated and psychophysically trained, the outcome of firefighting intervention remains uncertain. Therefore, the role of the psychologist is to prevent and provide psychological assistance to firefighters after difficult interventions. Unfortunately, in the Republic of Serbia, there is no organized system of providing such kind of help since psychology has been completely left out from the curriculum. Through teaching psychology, firefighters would gain, among other things, a basic knowledge of stress psychology. It is especially important to emphasize the activities on the organization and coordination of teams to provide psychological assistance to firefighters after "severe" interventions (interventions in which there are severely

injured and/or fatally injured). Talking to a psychologist is a form of psychological support that teaches people how to help themselves, and prevent the development of more severe psychological issues that may result in the occurrence of post-traumatic stress disorder. Luckily, the need for psychologists who will help firefighters has been recognized, which is supported by the research results conducted among professional firefighters, and an increasing number of journal papers on this topic.

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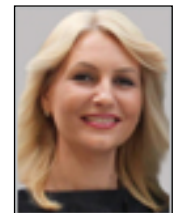
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STRES I ZNAČAJ PSIHOLOŠKE PRIPREMA VATROGASACA

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Rezime: Posao vatrogasaca je jedan od najzahtevnijih zanimanja na svetu. Svakodnevni napor, stres i opasnosti na radu, čine je jednim od najzahtevnijih i najtežih zanimanja. Vatrogasci su izloženi različitim izvorima stresa koji mogu izazvati određene psihološke teškoće. Znakovi koji ukazuju na postojanje stresa kod vatrogasaca mogu se klasifikovati u fizičke, emocionalne i bihevioralne. Postoje različiti načini da se spreči i ublaži stres. Važni aspekti koji utiču na efikasnost vatrogasaca u vatrogasnim intervencijama su svakako vatrogasna oprema, tehnika i taktike, ali ako vatrogasac nije dovoljno psihofizički spreman, motivisan i obučen, ishod vatrogasne intervencije je vrlo neizvestan. Uloga psihologa bila bi u pružanju psihološke pomoći vatrogascima nakon teških intervencija.

Ključne reči: vatrogasci, psihološka selekcija, profesionalni stres.