

Strategies of dealing with stress among medical rescue workers

Wiesława Trendak¹, Karina Zielińska¹, Jarosław Hołyński²

¹Emergency and Disaster Medicine Center, Department of Anesthesiology and Intensive Therapy, Medical University of Lodz, Poland

²Department of General and Transplant Surgery, Medical University of Lodz, Poland

Author's address:

Wiesława Trendak, Department of Emergency and Disaster Medicine, ul.Żeligowskiego 7/9, 90-752 Łódź, , Poland; e-mail:wieslawa.trendak@umed.lodz.pl

Received: 2011.03.19 • Accepted: 2011.05.20 • Published: 2011.06.14

Summary:

Medical rescue workers are subject to a wide range of stressors at their workplace. That is why this profession requires special mental predispositions. Resistance to stress and appropriate coping strategies are particularly important. We presented the results of a study among medical rescue workers examining their susceptibility to stress, experienced stress level and types of coping strategies for dealing with stress.

Key words: stress, coping strategies , medical rescue workers.

Introduction

Most concepts regarding stress at the workplace refer to the interaction between expectations encountered in the work environment and workers' resources determined by their mental capacity (11). These concepts are associated with the most popular psychological theory of stress by Lazarus, which defines stress as a "specific relationship between a person and its environment regarded by one as overwhelming or exceeding one's resources and threatening to one's well-being" (17). Subject's emotional reactions are immanent components of a stressful relation, very unpleasant and tempestuous at times. A stressful situation provokes actions toward improvement of this interaction, i.e. restoration of balance between the expectations posed by the environment and individual's capabilities, as well as an improvement of the emotional state. This pattern of activity is defined as coping with stress (15, 9, 10).

Carver, Scheier and Weintraub referred to the Lazarus' theory and to the model of behavioral self-regulation when they proposed fifteen coping

strategies classified into three general styles of coping with stress: problem-oriented, emotion-oriented and avoidance-oriented. Such strategies as: *Active Coping, Planning, Suppression of Competing Activities, Restraint Coping and Seeking Instrumental Social Support* are considered problem-oriented. On the other hand, strategies such as: *Seeking Emotional Social Support, Positive Reinterpretation and Growth, Turning toward Religion, Acceptance and Denial* authors consider emotion-oriented. The remaining strategies (*Focus on and Venting of Emotions, Mental Disengagement, Behavioral Disengagement, Alcohol/Drug Use and Humor*) are classified as avoidance-oriented (1, 2).

Research studies indicate that personality traits, susceptibility to stress in particular, also influence the level of stress perception. The concept of distressed or type D personality was first introduced to literature in 1995 by J. Denolett (3). According to the author, there are two main components of type D personality regarded as relatively permanent personality traits, i.e. negative affectivity and social inhibition. Negative affectivity is expressed

as individual's tendency to experience strong emotions such as fear, anger, irritation or hostility. Social inhibition, on the other hand, relates to the avoidance of threats to one's social interactions and refers to restraint in expressing negative emotions and behaviors consistent with those emotions (6, 4).

The following are characteristic for type D personality:

- tendency to worry and experience tension in difficult situations,
- low sense of security, pessimistic perception of the world,
- discomfort in the presence of other people, especially strangers,
- shyness, weak bonds with other people, keeping distance from others and poor inclination to share emotions (4).

Moreover, type D personality is associated with such symptoms of psychological stress as susceptibility to depression, difficulties in benefiting from social support, depressed mood, low self-esteem, low level of satisfaction with life and the sense of exhaustion. Type D is considered to be at the extremity of personality dimensions that form its structure while remaining within the psychological norms (5).

Hypotheses and the goal of this work

Medical rescue workers in particular are exposed to the influence of various stressors at their workplace. Overworking, performance under pressure of time, shift system, night on-calls, responsibility for the life and health of others, contact with death and suffering, dangerous situations, difficult work conditions and often lack of environmental support make the work of rescue workers highly stressful (19, 12, 7). Because of that, this profession requires special psychological predispositions and resistance to stress is particularly necessary (19). As many research studies have shown, working under conditions of excessive burden may have negative consequences, both health-related and psychological (8, 18, 14). The negative consequences of stress at the workplace result not only from the burdens associated with work itself but also from the deficiency or depletion of resources necessary for effective coping (16). The aim of this research project was to assess the level of stress perceived by medical rescue workers, to establish the type of personality (stress-susceptible or stress-resistant) predominating in their work environment and to identify strategies of coping with stress they use at their workplace. In this study we also attempted to establish the relationship between perceived stress intensity and an adopted coping method.

Materials and methods

There were 45 rescue workers from the Warsaw rescue teams enrolled in our study. A Perceived Stress Scale (PSS-10) was used to measure stress levels. The questionnaire measures person's own evaluation of the stressfulness of life situation in the past month. Stress coping strategies were measured using a Multi-dimensional Coping Inventory - COPE (13). The type of personality was assessed using a Type D Personality Scale - DS-14 (6, 20). Computer software SPSS (version 18.0.0) was used for statistical analysis of the results. A Kolmogorov-Smirnov (K-S) test was used to check for normal distribution. U Mann-Whitney or Kruskal-Wallis tests were used to check for the differences between means. Statistical dependence between variables was assessed using Spearman's rank correlation coefficient.

Study results

1. Study group characteristics

There were 38 (84.4%) men and 7 (15.6) women in the study group (table 1).

Table 1: Study group characteristics^[1]

Sex	n	%
Women	7	15.6
Men	38	84.4
Age		
20-29	26	57.8
30-39	13	28.9
40-49	6	13.3
Education		
Secondary	29	64.4
Undergraduate (Bachelor's degree)	10	22.2
Graduate	6	13.3
Years of work experience		
1-10	35	77.8
11-20	6	13.3
21-30	4	8.9

^[1] Abbreviations used in table 5.1: n – number, % - percentage of all responses

The majority of subjects were in the 20–29 age group (57.8%). People aged 30–39 years comprised a less numerous group (28.9%) and the smallest group consisted of people 40–49 years old (13.3%).

Most of rescue workers in the study had secondary education (64.4%). The second-largest group consisted of people with undergraduate education (22.2%). The least numerous group included graduate degrees (13.3%).

A great majority of our study population consisted of people with less than 10 years of experience (77.8%). The second-largest group of subjects had between 11 and 20 years of work experience (13.3%) and the least numerous group contained workers with more than 20 and less than 30 years of experience (8.9%).

2. Strategies of coping with stress.

Type D personality.

Mean values of particular variables assessed using the Perceived Stress Scale and Multi-dimensional Coping Inventory - COPE as well as the DS-14 questionnaire are presented in table 2.

Acquired data indicate that coping strategies most commonly used by medical rescue workers are: *positive reinterpretation and growth, planning and active coping*. Least commonly used are the following: *denial, alcohol/drug use, turning toward religion and behavioral disengagement*.

Table 2: Arithmetic means and standard deviations of analyzed variables^[2]

Variables	M	SD
Perceived Stress Level (global score)	15.44	4.81
- low	3.63	0.62
- medium	5.56	0.51
- high	7.27	0.47
Strategies of Coping with Stress		
Active coping	10.47	2.20
Planning	10.82	2.98
Seeking instrumental support	9.78	2.76
Seeking emotional support	8.98	2.90
Suppression of competing activities	9.80	2.54
Turning toward religion	6.07	2.86
Positive reinterpretation and growth	10.82	2.18
Restraint coping	8.91	1.88
Acceptance	9.53	2.69

[2] Abbreviations used in tables 5.2; 5.4 – 5.7: M – arithmetic mean; SD – standard deviation;

Variables	M	SD
Focus on and venting of emotions	8.51	2.86
Denial	5.73	1.90
Mental disengagement	7.27	2.90
Behavioral disengagement	6.07	2.13
Abuse of alcohol or other psychoactive substances	5.87	3.04
Humor	8.38	2.28
Type D Personality		
- negative affectivity	9.07	5.61
- social inhibition	7.40	5.40

The mean results of Type D Personality Scale – DS-14 testing in the study group were respectively: 9.07 (SD = 5.61) for *Negative Affectivity* and 7.40 (SD = 5.40) for *Social Inhibition*. A score of 10 and higher for both dimensions, indicating type D personality (i.e. stress-susceptible personality), was noted in 24.4% of rescue workers in the studied group. The percentage distribution of studied subjects is presented in table 3.

Table 3: DS-14 scores

Type of personality	Frequency	Percentage
Type D	11	24.4%
Type other than D	34	75.6%
Total	45	100%

Perceived stress level and coping strategies

Acquired data indicate that the majority of medical rescue workers present with perception of workplace stress of medium intensity; 33% of the studied group is characterized by low stress levels and the least numerous group consists of people with high-level stress perception (table 4).

Table 4: Percentage distribution of study subjects with respect to the perceived level of stress.

Perceived stress level	Frequency	Percentage
Low	15	33.3
Medium	19	42.2
High	11	24.4

Correlation coefficients presented in table 5 indicate significant correlation between low intensity of perceived stress and such coping strategies as: *planning, seeking instrumental (social) support, positive reevaluation and growth and sense of humor*. Obtained correlation coefficients show that the more frequently subjects use above mentioned strategies,

the lower the perceived stress level. Simultaneously, results obtained in the study demonstrate poor correlation between perceived level of stress and avoidance or emotion-orientated strategies.

Table 5: Correlation coefficients for perceived stress levels and strategies of coping with stress.

Strategies of coping with stress	Level of perceived stress			
	Low	Medium	High	General score
Active coping	0.35	0.26	0.57	-0.217
Planning	0.54*	0.17	0.14	-0.169
Seeking instrumental support	0.65**	-0.15	0.46	-0.048
Seeking emotional support	0.27	-0.06	0.23	-0.059
Suppression of competing activities	0.36	0.24	0.59	-0.071
Turning toward religion	0.34	-0.02	0.21	0.235
Positive reevaluation and growth	0.60*	0.43	-0.17	0.119
Restraint coping	0.16	-0.11	0.53	0.114
Acceptance	0.33	0.06	0.30	0.130
Focus on and venting of emotions	0.27	0.08	-0.10	0.230
Denial	0.36	-0.04	0.20	0.040
Mental disengagement	0.10	-0.03	0.52	-0.066
Behavioral disengagement	-0.23	-0.31	0.26	0.058
Use of alcohol and other psychoactive substances	0.14	0.01	0.35	0.154
Humor	0.61	0.01	0.35	-0.036

Type D personality and strategies of coping with stress

In this study, we tested the correlation strength between type D personality and its two dimensions, i.e. *negative affectivity* and *social inhibition*, and strategies of coping with stress. According to the data presented in table 6, *negative affectivity* is associated with such strategies as: *restraint coping, focus on and venting of emotions, mental disengagement and use of alcohol and other psychoactive substances*, while the following strategies significantly correlate with *social inhibition*: *suppression of competing activities, turning*

toward religion and also use of alcohol and other psychoactive substances. In case of *suppression of competing activities and turning toward religion*, this relationship is negative, meaning that the greater the intensity of features comprising this dimension, the lower the frequency of using mentioned strategies.

Type D personality (without dividing it into two separate dimensions) significantly correlates with such coping strategies as: *suppression of competing activities, positive reevaluation and growth, restraint coping and use of alcohol and other psychoactive substances*. There is a negative correlation in case of *suppression of competing activities and positive reevaluation*.

It follows that people with type D personality and high intensity of features comprising its dimensions rarely use these coping strategies. However, they more often apply avoidance strategies of coping with stress, i.e. *behavioral disengagement and use of alcohol and other psychoactive substances* as indicated by a positive correlation.

No significant relationship was noted between remaining coping strategies and type D personality or its dimensions.

Table 6: Correlation coefficients for type D personality and coping strategies.

Variables	Negative Affectivity	Social Inhibition	Type D Personality
Active coping	0.040	0.001	-0.063
Planning	-0.057	-0.137	-0.170
Seeking instrumental support	0.077	-0.018	-0.012
Seeking emotional support	0.235	-0.038	0.146
Suppression of competing activities	-0.201	-0.419**	-0.312*
Turning toward religion	0.155	-0.298*	-0.013
Positive reevaluation and growth	-0.048	-0.265	-0.394**
Restraint coping	0.369*	0.181	0.228
Acceptance	0.100	0.057	0.018

Variables	Negative Affectivity	Social Inhibition	Type D Personality
Focus on and venting of emotions	0.467**	0.153	0.163
Denial	0.176	-0.070	0.047
Mental disengagement	0.325*	0.142	0.189
Behavioral disengagement	0.167	0.186	0.307*
Use of alcohol and other psychoactive substances	0.481**	0.312*	0.412**
Humor	0.089	0.024	0.137

Discussion

Analysis of obtained results indicates that people experiencing ordinary levels of workplace stress comprise the largest group among medical rescue workers, while those with high stress levels belong to the smallest group. It is undoubtedly influenced by the fact that most rescue workers do not possess the stress-susceptible type D personality. Moreover, the majority of studied subjects prefer problem-orientated strategies of coping with stress. Most often applied coping strategies, as demonstrated in studies by Ogińska-Bulik (19), are the following: active coping, seeking instrumental support, suppression of competing activities. Strategies typical for emotion-orientated coping style take the second place: seeking emotional support, religion, positive reevaluation and growth, acceptance and denial. Avoidance-orientated strategies are rarely used by medical rescue workers, i.e.: focus on

References:

- Carver CS, Scheier MF. Situational coping and coping dispositions in a stressful transaction. *Journal of Personality and Social Psychology* 1994;66:184-195
- Carver CS, Scheier MF, Weintraub J. Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology* 1989; 52:267-283
- Denollet J. DS-14: Standard assessment of negative affectivity, social inhibition and type D personality. *Psychosomatic medicine* 2005;67:89-97.
- Denollet J, Kupper N. Typ D personality, depression, and cardiac prognosis: Cortisol dysregulation as a mediating mechanism. *Journal of Psychosomatic Research* 2007;6: 607-609.
- Denollet J, de Jonge P, Kuyper A, Schene AH, van Melle JP, Ornel J, Honing A. Depression and type D personality represent different forms of distress in the myocardial infarction and depression-intervention trial. *Psychosomatic Medicine* 2008; 8:1-8.
- De Fruy F, Denollet J. Typ D personality: A five factor model perspective. *Psychology and Health* 2002; 5: 671-683.
- Dollard M, Winefield A, Winefield H (red.). *Occupational Stress in the Service Professions*. London, New York: Taylor & Francis; 2003.
- Dudek B. *Zaburzenia po stresie traumatycznym*. Gdańsk: GWP; 2003.

and venting of emotions, mental disengagement, behavioral disengagement and use of alcohol or other psychoactive substances.

These results indicate that the majority of people in the medical rescue profession are problem-oriented and prefer active approach to coping with stress. They avoid performing actions that could jeopardize the completion of the task but instead, seek for constructive information that allow for dealing with the problem in a quick and efficient manner. Rescue workers characterized by type D personality constitute the minority, only 24.4% of the group; they are more susceptible to stress and perceive stressful situations in terms of threat. In the process of coping with stress, they more often apply maladaptive coping strategies focused on emotions and avoidance, which may lead to accumulation of experienced stress, overworking and contribute to the development of burn-out syndrome or other psychological dysfunctions.

Conclusions

Analysis of the results obtained in this study indicates that:

- Medical rescue workers cope well with stress at their workplace (33.3% experience low stress levels, 42,2% - medium-intensity stress and 24% - high).
- The great majority of medical rescue workers apply adaptive coping strategies.
- The majority of studied rescue workers do not exhibit traits of stress-susceptible personality, only 24% of the studied group manifested features of type D personality.
- Subjects with type D personality more often use avoidance-oriented style of coping with stress.

74. Folkman S, Lazarus RS. Coping as a mediator of emotion. *Journal of Personality and Social Psychology* 1988; 54:466-475.
75. Folkman S, Moskowitz J. Coping: pitfalls and promise. *Annual Review of Psychology* 2004; 55:745-774.
76. Heszen-Niejodek I. Teoria stresu psychologicznego i radzenia sobie. W: Strelau J. *Psychologia*. Gdańsk: GWP; 2005; 3:465-492.
77. Hetherington A. *Wsparcie psychologiczne w służbach ratowniczych*. Gdańsk: GWP; 2004.
78. Juczyński Z, Ogińska-Bulik N. *Narzędzia pomiaru stresu i radzenia sobie ze stresem*, Warszawa: Pracownia Testów Psychologicznych; 2009.
79. Kaflik-Pieróg M. *Konsekwencje stresu zawodowego personelu ratownictwa medycznego*. W: *Zeszyty Naukowe WSHE Psychologia zdrowia*. Łódź: WSHE; 2004;1: 101-110.
80. Lazarus RS. Coping theory and research: Past, present and future. *Psychosomatic Medicine* 1993;55: 234-247.
81. Lazarus RS. *Emotion and adaptation*. New York: Oxford University Press; 1991.
82. Lazarus RS, Folkman S. *Stress. Appraisal and coping*. New York: Springer; 1994.
83. Lis-Turlejska M. *Stres traumatyczny. Występowanie. Następstwa. Terapia*. Warszawa: Wydawnictwo Akademickie Żak; 2002.
84. Ogińska-Bulik N. *Stres zawodowy w zawodach usług społecznych. Źródła. Konsekwencje. Zapobieganie*. Warszawa: Wydawnictwo Difin; 2006.
85. Ogińska-Bulik N. *Osobowość typu D. Teoria i badania*. Łódź: Wydawnictwo Wyższej Szkoły Humanistyczno-Ekonomicznej; 2009.