



Job burnout in a sample of Polish paramedics – role of work experience, age and health behaviours

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Abstract

Introduction and Objective. Job burnout is a phenomenon that results from unmanaged chronic workplace stress, which is directly related to the stressful nature of workplace, as well as experiencing chronic emotional strain and is characterized by high emotional exhaustion and depersonalization and low professional efficacy. Emergency Medical Teams are just such a workplace. Paramedics functioning in a state of prolonged, permanent stress begin to lose motivation to continue their work with their previous commitment. The purpose of this study is to answer the question of whether the paramedics surveyed feel professionally burned out, and how stress affects the performance of professional activities and health behaviour.

Materials and Method. The study was conducted from May 2019 to September 2019 among 238 (223 males and 15 females) paramedics of the outgoing Emergency Medical Service from the Mazovian province. The study used standardized tools in the form of questionnaires: Link Burnout Questionnaire – LBQ and Health Behavior Inventory Questionnaire – IZZ.

Results. The study showed high levels of psychophysical exhaustion in our sample of paramedics.

Conclusions. The problem of professional burnout among paramedics requires wider recognition as well as the development of preventive measures to minimize its negative effects. It is necessary to consider the education of paramedics on the subject in question, as well as extending increased psychological support to this professional group.

Key words

burnout, occupational exposure, paramedic, work environment

INTRODUCTION

Burnout syndrome (BOS) is a special type of work-related stress caused by prolonged and repeated workplace stress as a result of several organizational risk factors, especially high emotional demands in helping professions (e.g., healthcare workers, caregivers, social workers,

teachers, etc.) and occupations in contact with people. As described by Maslach and Leiter, BOS can be defined as a psychological syndrome characterized by high levels of emotional exhaustion, depersonalization, and low personal accomplishment. Emotional exhaustion is identified as the sensation of being depleted of energy and overwhelmed, and is the aspect of burnout most closely linked to workers' well-being [1]. Relational deterioration refers to a psychological disengagement from work and clients, often stemming from an ineffective coping mechanism to deal with emotional exhaustion. Diminished personal accomplishment represents

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a negative assessment of one's job performance and effectiveness (Maslach et al., 2001). In 2019, the World Health Organization (WHO) officially classified burnout as an occupational disease in the 11th revision of the International Classification of Diseases (ICD-11). This acknowledgement signifies that burnout is a significant health concern [2]. Many scholars have described BOS in several forms and according to different models. According to the Santinello model, BOS is characterized by four dimensions: Psychophysical exhaustion (PE), Deterioration of the relationship (DR), Professional ineffectiveness (PI), and Disillusionment (D). PE is a physical and mental high sensation of feeling tired and under pressure, resulting in exhaustion from physical and mental resources. DR is a compromised relationship with the user that becomes alienated to the point of cynicism. PI is the excessive perception that professional problems become incomprehensible situations. The last dimension, DR, is when what seemed like a passion has become a meaningless routine [3–6].

The work environment in which paramedics perform their professional activities is conducive to a variety of stressors, including, but not limited to, exposure to traumatic and emotionally taxing situations, workplace violence, physical fatigue, risk of injury, irregular working hours, including night shifts, extended shift duration, irregular rest breaks during the shift, infection by a biological agent, and contracting infectious diseases. In addition, paramedics are susceptible to more general workplace stressors, such as organizational culture and workplace conditions, which have previously been linked to BOS in other professions [7–16].

The perception of the public of paramedics is changing as a result of the increased importance of their work. Today, people expect them to be much more knowledgeable and skilled than they were a decade ago. Taking into account the scope of paramedics' professional authority, an important aspect of their work is the correct assessment of health conditions and reliable patient care to avoid complications directly related to their professional activities. The paramedic profession plays a significant role in grappling with the challenges of the broader public health and healthcare system. Thus, the profession of a paramedic is among those in which chronic stress is inherent. The work of a paramedic is associated with a special psychological burden, the source of which is another human being, often in an extreme situation. Paramedics work in situations of high and prolonged emotional tension. BOS tends to emerge if stress is not managed properly and there is a lack of support from others in difficult situations. It significantly reduces the quality of the work performed by paramedics and prevents their further professional development. The specific characteristics and requirements associated with the paramedic profession differentiate it from other professions [17–19].

The aim of this study was to investigate the prevalence of BOS among paramedics employed in emergency medical teams (EMTs), and to identify the most common factors affecting the risk of BOS.

MATERIALS AND METHOD

Study procedure. According to data from the Central Statistical Office in Poland, in 2019 there were 1,577 medical rescue teams (369 specialized and 1,208 basic) operating

within the State Emergency Medical Service System, while the number of personnel entering the medical rescue service was 12,700 people [8].

The survey is part of a joint research project conducted by the Health Department of the Provincial Office in Warsaw and the Department of Health and Social Policy of the Marshal's Office of the Masovian Province, on the occupational safety and health of paramedics employed in the State Emergency Medical Service system in Medical Rescue Teams from five operational regions of the Masovian Province: Warsaw, Płock, Ostrołęka, Siedlce, and Radom. The implementation of this part of the project was carried out from June 2019 – September 2019. The sample selection was purposeful because the largest number of EMTs operate in the Masovian Province nationwide. Participation in the study was voluntary and a total of 250 paramedics declared their willingness to participate, of whom 238 people correctly (fully) completed the survey questionnaires and were included in the final analysis. Due to incomplete data, 12 people (questionnaires) were excluded from the analysis. A return rate of 95.2% of the questionnaires was achieved.

Ethical aspects. The cross-sectional study was conducted in accordance with the principles of the Declaration of Helsinki [20], and was anonymous and voluntary. Participants were informed of the study's objectives and the possibility of opting out at any stage. Research tools were purchased from the Psychological Tests Laboratory in Warsaw.

Data analysis. Comparison of the distribution between the various dimensions of job burnout and the grouping variable defined on the basis of the standardized results of the Health Behavior Inventory tool – (sten) – was performed using the non-parametric Mann-Whitney U test. A dichotomous variable (0–1) was created from the standardized units and defines, according to the interpretation of the results of the standardized tool, a sten scale (1–10). Scores between 1–6 sten were defined as low and average, and coded with the value '0' while 7–10 were defined as high, defined as '1'. Such preparation of the variable allowed for the construction of a logistic model, where age and the factors of the LBQ tool were specified as explanatory variables. The distribution of all dimensions from the analyzed questionnaires by age of the subjects was also compared using this test, which was presented as 2 ranges. To investigate a relationship between job burnout and seniority, age, and health behaviour, Spearman's non-parametric rho test was used. A non-parametric χ^2 test was used to examine the relationship between qualitative variables. All statistical tests assumed a significance level of $\alpha=0.05$. Statistical analysis was performed using STATISTICA ver. 13.1 statistical software.

STUDY MEASURES

Link Burnout Questionnaire (LBQ). LBQ [21] was used to assess burnout in the sample of paramedics' members from the Public Emergency Medical Service in the Mazovian Province of Poland. This 24-item instrument is designed to measure four different components of the burnout syndrome: psychophysical exhaustion (PE), relational Deterioration (RD), professional inefficacy (PI), and disillusionment (DI). Each subscale consists of 8 items. Participants rated their

responses on a scale from 0 (never) to 6 (every day). The subscales showed acceptable internal reliability with a values of .78 for PE, .71 for PI, .51 for RD, and .82 for DI. The LBQ was chosen because it uniquely includes the sub-dimension 'disillusionment', which is particularly relevant for care providers working with extreme marginalization (Pines & Aronson, 1988). The manual recommends analyzing the 4 components separately, even though they measure sub-dimensions of a single construct (Tab. 1).

Health Behaviour Inventory – IZZ [22]. The Health Behavior Inventory – IZZ, a standardized questionnaire, was used to examine the health habits of the study group. The questionnaire consists of 24 statements characterizing different types of health-related behaviours and includes 4 factors: positive mental attitude, preventive behaviour, proper eating habits and health practices. Stens (1–10) for the scores obtained from the sum of the obtained results separately for women and men were also determined. The reliability of the tool was checked using Cronbach's Alpha, which was 0.90 for the entire tool, and 0.82 for the positive mental attitude factor, 0.68 for preventive behaviours, 0.82 for proper eating habits, and 0.65 for health practices (Tab. 1).

Table 1. Cronbach's alpha for the Health Behavior Inventory – IZZ and LBQ

IZZ		LBQ	
Dimensions	Cronbach's alpha	Dimensions	Cronbach's alpha
Total	0.90	Total	0.89
Positive mental attitude	0.82	Psychophysical exhaustion	0.78
Preventive behaviors	0.65	Lack of commitment to customer relationships	0.71
Proper eating habits	0.82	A sense of Lack of professional effectiveness	0.63
Professional practices	0.65	Disappointment	0.82

RESULTS

The final analysis included 238 subjects – 223 men and 15 women. Average age of the male subjects – 39.03±9.27 years; female subjects – 31.93±7.76 years ($p=0.003$).

The average work experience of the paramedics studied was statistically significantly different by gender ($p=0.000$); among men – 12.62±9.41 years, among women – 5.36±7.04. In both groups of paramedics surveyed, the shortest length of service was 6 months ($p<0.001$). Included were those with post-secondary education and vocational and higher education (Tab. 2).

Table 2. Educational level of respondents according to gender

Gender	No. of respondents N (%)	Secondary/Further Secondary Education	Professional Higher Education	Masters Higher Education	p-value
Male	223 (100.00)	48 (21.52)	132 (59.19)	43 (19.28)	0.109*
Female	15 (100.00)	1 (6.67)	8 (53.33)	6 (40.00)	

*Test χ^2 ; $p>\alpha$; $\alpha=0.05$

Differences in 4 areas of occupational burnout were examined in relation to the tenor scores (1–10) of the severity

of the factor studied in relation to the age of the paramedics surveyed. In accordance with WHO indications and the development of the questionnaires used in this study, the respondents were divided into 2 age groups: 1) up to the age of 45, 2) over 45. Psychophysical exhaustion was observed in both age groups ($Me=7$; $p=0.960$). Respondents indicated that their work is exhausting and while performing their job they felt under pressure and experienced mental tension.

Lack of commitment in the relationship with the patient was indicated more often by respondents under 45 years of age ($Me=6$) than rescuers from the older age group ($Me=5$) ($p=0.008$), in particular, they indicated that patients are more demanding and do not follow the instructions of paramedics. The lower values in the group of respondents over the age of 45 may suggest that the length of seniority may result in a better approach to patients, and the acquisition of skills in dealing with patients in crisis.

The sense of lack of professional effectiveness among the paramedics surveyed had the least impact on the respondents' professional burnout, and was comparable in both age groups ($Me=5$; $p=0.065$). Above all, the respondents point to relationships with patients and insufficient professional competence.

Disappointment with work in both age groups was comparable ($Me=7$; $p=0.488$). In this area, the respondents indicated that the work did not meet their expectations, they did not feel valued, and with the possibility of another choice of profession, they would not choose the profession they perform (Tab. 3).

Table 3. Sten scores of job burnout in relation to the age range of the paramedics surveyed

Area	Age < 45 y.o. (n=189)		Age > 45 y.o. (n=49)		p-value*
	Me (IQR)	min–max	Me (IQR)	min–max	
Psychophysical exhaustion	7 (3)	1–10	7 (3)	1–10	0.960
Lack of commitment to customer relationships	6 (2)	2–10	5 (2)	1–10	0.008**
Sense of lack of professional effectiveness	5 (3)	1–10	5 (3)	1–10	0.065
Disappointment	7 (3)	2–10	7 (2)	2–10	0.488

IQR – interquartile range; *Test U Mann-Whitney; ** $p<\alpha$, $\alpha=0.05$

Analyzing the professional burnout of the studied group of paramedics, differences were determined between the distributions of the individual dimensions of this questionnaire and the individual health behavior of the subjects. Differences were found in the distribution of the examined areas of professional burnout LBQ in the group of paramedics with unsatisfactory and satisfactory health behaviour (distribution of the examined factors was statistically significantly different at $p=0.000$). The group of respondents with satisfactory health behaviour had a lower rate of burnout (Tab. 4). It should be noted that the IZZ Health Behaviour Inventory consists of 4 factors: 1) positive mental attitude, 2) preventive behaviour, 3) proper eating habits and 3) work practices. Determination of the individual relationships of the factors studied was determined by correlation analysis.

A relationship was found between age and lack of relationship commitment. The older the respondents, the

Table 4. Results of occupational burnout in relation to the IZZ of the examined medical rescuers

Area	Unsatisfactory health behaviour (according to IZZ) n=178		Satisfactory health behaviour (1) n=60		p-value*
	Me (IQR)	min-max	Me (IQR)	min-max	
Psychophysical exhaustion	7 (2)	1-10	5 (3)	2-8	0.000**
Lack of commitment to customer relationships	6 (2)	2-10	5 (2.5)	1-9	0.000**
A sense of Lack of professional effectiveness	5 (3)	1-10	4 (3)	1-9	0.000**
Disappointment	7 (3)	2-10	5 (3)	2-10	0.000**

*Test U Mann-Whitney; **p<α, α=0.05

higher the commitment to the relationship with patients ($r=-0.242$) (a lower value of the dimension indicates positive intensity) and higher health behaviours ($r=0.223$). As seniority increased, increased disillusionment ($r=0.189$) and increased health behaviours ($r=0.166$) were observed. Increased psychophysical exhaustion correlates with Lack of commitment to client relationships ($r=0.614$), feelings of professional ineffectiveness ($r=0.379$), and disillusionment ($r=0.641$). Lack of commitment to patient relationships affected feelings of ineffectiveness ($r=0.266$) and disappointment ($r=0.526$), and feelings of professional ineffectiveness correlate with disappointment ($r=0.462$) (Tab. 5).

Table 5. Relationships between age, work experience, IZZ, and individual LBQ dimensions

Variables	1	2	3	4	5	6	Mean**	SD**
Age	-	-	-	-			38.58	9.33
Work experience	0.770*	-	-	-			12.17	9.43
IZZ	0.223*	0.166*	-	-			74.87	15.80
LBQ_1	-0.069	0.017	-0.517*	-			18.77	6.60
LBQ_2	-0.242	-0.120	-0.423*	0.614*	-		20.28	5.93
LBQ_3	0.071	0.074	-0.255*	0.379*	0.266*		10.56	4.26
LBQ_4	0.099	0.189*	-0.383*	0.641*	0.526*	0.462*	17.20	6.95

LBQ_1 – psychophysical exhaustion; LBQ_2 – lack of engagement in relationships with clients; LBQ_3 – feeling of lack of professional effectiveness; LBQ_4 – disappointment; *statistically significant correlations; p<0.05 Spearman's rho; **mean and standard deviation from raw scores of individual variables

The effect of health behaviours was found to reduce burnout among the paramedics surveyed. Positive mental attitudes and preventive behaviours reduced psychophysical exhaustion ($r=-0.540$; $r=-0.366$), job-related disappointment ($r=-0.384$; $r=-0.344$), increased commitment in relationships with patients ($r=-0.363$; $r=-0.346$), and professional efficacy ($r=-0.296$; $r=-0.247$). Proper health practices reduce psychophysical exhaustion ($r=-0.431$) and disappointment ($r=-0.311$). They also improved engagement with patients ($r=-0.362$), and did not affect feelings of professional ineffectiveness (Tab. 6).

Based on the estimated logistic regression, it can be concluded that the lower the declared psychophysical exhaustion (OR=0.644; 95%CI: 0.521–0.790; $p<0.001$) and the less there was a lack of engagement in relationships with

Table 6. Predictors of the logistic regression model

Variable	Variable Estimation of logistic regression parameter	OR (95% CI)	p-value
Intercept	2.893	18.048 (5.193-62.727)	<0.001
Psychophysical exhaustion LBQ_1	-0.440	0.644 (0.521-0.790)	<0.001
Lack of engagement in relationships with clients LBQ_2	-0.262	0.769(0,607-0,974)	0.029
Age	0.778	2.178 (1,030-4,604)	0.042

OR – odds ratio; CI – confidence interval

patients, the greater the chance of exhibiting proper health behaviours among the respondents (OR=0.769, 95% CI: 0.607–0.974; $p=0.029$). The respondents' chance of exhibiting proper health behaviours increased with age (OR=2.178, 95%CI: 1.030–4.604; $p=0.042$). A sense of lack of professional effectiveness (OR=0.874, 95%CI: 0.734–1.041; $p=0.131$) and disappointment (OR=1.210, 95% CI:0.954–1.535; $p=0.116$) did not have a significant impact on proper health behaviours. The goodness of fit for the Hosmer-Lemeshow statistic = 8.7605, with a p-value of 0.363, indicated a significant fit of the logistic regression model. Based on the analysis of the area under the ROC curve, it can also be concluded that the model was well-fitted to the data (area value – AUC= 0.808) and is characterized by a good predictive ability arising from the obtained plots of sensitivity and specificity for different probability levels.

DISCUSSION

The work of a paramedic, which involves providing emergency medical services and health services other than emergency medical services in situations that threaten people's health or life, causes members of this professional group to particularly often experience severe stress. The data presented so far identify many stresses specific to it. These are related to the fact that the paramedic is responsible for the life and safety of himself and others, witnesses' conditions that threaten the life or health of patients, or, finally, is exposed to accidents that accompany the performance of his work [7–14].

The nature of the work performed by paramedics significantly influences the occurrence of BOS. The irregular lifestyle resulting from shift work, especially at night, as well as the psychological burden associated with the enormous responsibility resulting from the performance of professional activities and the awareness that, as a result of making a mistake, a patient's health condition may worsen or may even contribute to his death, are negative features of the paramedic profession cited among those that may largely contribute to the appearance of BOS [23–26]. Studies show that 30–40% of paramedics are affected by BOS [27–32]. Crowe et al. in their study showed that among the 10,540 paramedics participating in the study, the phenomenon of BOS was common at 38.3% of those surveyed, and its connection to work was shown by 30.1%. In contrast, its connection to the patient was shown by 14.4% of those surveyed [29].

A study of 270 paramedics by Almutairi and Mahalli found that the majority of respondents experienced high

levels of depersonalization (40%) and emotional exhaustion (63%); in addition, many participants perceived low levels of personal achievement (41.9%) [33]. Sporer, in his study, showed that most paramedics participating had high levels of depersonalization, medium levels of personal achievement, and emotional exhaustion [34]. Buljan et al., based on a study of 456 paramedics, showed that they are at risk for occupational exhaustion syndrome. Risk factors were uncertainty about the work system, a sense of mental workload, poor social contacts resulting in a lack of help from others, and a lack of positive motivators at work, such as various rewards [35].

The results of own research indicate psychophysical exhaustion in the studied group of paramedics due to the nature of the work, disappointment with work, lack of appreciation, pressure during work activities, and mental tension during work, correlated with the cited studies [28–35], as well as with studies indicating causal factors contributing to BOS in this professional group [36–38].

Limitations of the study. As in all research studies, this survey has its limitations. Firstly, while using a significant number of paramedics, the findings may not be entirely representative of the broader paramedic population across different regions or healthcare systems. This group, however, represented the largest one possible in Poland at the time. The study relies heavily on subjective measures which, despite their inherent value, can introduce variability in responses to personal perceptions and biases. The cross-sectional approach captures the burnout experience at a single point in time, which may not provide insights into the longitudinal and evolving nature of BOS in the paramedic profession. External factors, such as personal life stresses or organizational support structures, were not extensively examined, potentially overlooking critical factors that might influence BOS. There is also a potential for response bias, given the sensitive nature of burnout; participants may have underreported or overreported their experiences due to concerns about professional ramifications or societal perceptions. Future research should address these limitations to provide a more comprehensive understanding of BOS in the paramedic profession. The rather late publication of the 2019 study is due to pandemic constraints, as well as organizational issues arising from the large overseas team of co-authors.

CONCLUSIONS

It is worrying that most paramedics who participated in the survey noticed exhaustion. While working, they felt under pressure and experienced psychological tension, symptoms that characterize BOS. Therefore, it is necessary to strive to reduce the adverse effects of BOS among this professional group by creating support groups in the professional environment and introducing managers to the problem at hand, since job satisfaction is an important indicator to predict the reliability and effectiveness of an employee.

In the area of BOS prevention, it is necessary to develop the personal qualities of paramedics that are protective factors against BOS, namely, social competence, professional coping competence, the ability to cope with occupational stress, the formation of emotional self-control, and the development of

positive attitudes towards life, including towards oneself and colleagues. The above competencies are essential not only for the individual well-being of the employee, but also condition effective teamwork in the profession.

The most critical element of constructive work with BOS is prevention, which is the most effective strategy, which at the individual level should be aimed at, among other things: life hygiene, sleep hygiene, healthy eating, and maintaining physical activity.

Occupational health is pivotal for both the well-being of employees and the economic success of an organization. Stakeholders must institute regular health surveillance to detect early signs of distress and implement holistic health promotion programmes that encompass both physical and mental well-being. A culture that prioritizes health, coupled with continuous feedback and education, is essential. Collaborating with health professionals can guide these initiatives, ensuring their relevance and effectiveness. Ultimately, a long-term commitment to occupational health not only ensures a productive workforce, but also enhances the overall vitality and sustainability of the organization.

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