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Pilot Study on Psychophysiological Characteristics of Occupational Burnout Syndrome among Various Medical Specialists

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Abstract

Introduction: Burnout syndrome is a real scourge of the XXI century, especially for people who work within a communication-related field. However, the issues on development and specific manifestations of occupational stress among doctors of different specialties have not been systematically studied yet.

Material and Methods: A pilot study was conducted to assess the burnout syndrome as a complex systemic state of the professional activity of various medical specialists in the Republic of Moldova, depending on their psychophysiological characteristics. The pilot study involved 73 specialists, with a mean age of 38.2 (± 1.1) years.

Results: Of the 73 medical workers tested, 38.3% of them did not suffer from burnout, while 61.6% presented various signs of burnout. The specific characteristics of the professional exhaustion among healthcare workers were revealed depending on their specialty and work experience, as well as on their psychophysiological peculiarities. The most susceptible to stress factors were the healthcare workers with <10 years of working experience, 77.1%. The constituent mental health blocks showed changes among different medical specialties under the influence of occupational exhaustion.

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Conclusion: A relationship between physician burnout, their behavioral type and level of emotional stability has been demonstrated.

Keywords

Burnout, Doctors; Mental Health; Behavioral Type; Emotional Stability

Introduction

Burnout syndrome has been now officially recognized as a medical condition, being included in the International Classification of Diseases under ICD-10: 273. Problems related to the difficulty of organizing one's own way of life. According to statistics, 25% of people experience burnout at least once in their lives [1].

This health condition is a real scourge of the 21st century, especially for people who work within a communication-related field. At the WHO European Conference, it was mentioned that the work-related negative impact is an important issue for about a third of EU citizens. In 15 EU countries, the annual economic loss due to work stress and mental health problems amounts to 265 billion euros. In the UK, 1510 people per 100,000 employees experience stress, depression, or anxiety due to work. In the United States, emotional exhaustion is the cause of more than 50% of cases of constant employee turnover in companies [2,3].

At least 20% of physicians in Austria have experienced burnout symptoms and 50% of them are at risk. The current surveys conducted on certain professions revealed that 30-35% of German teachers, 40-60% of primary and secondary medical staff and 15-30% of doctors suffer from burnout. In England, 40% of all cases of temporary disability among doctors are associated with emotional stress. The doctors undertaking private practice show a high level of anxiety (41%) and depression, clinically manifested in 26% of cases [4,5].

One of the largest studies on physician burnout was conducted in Finland. The study included 2671 doctors. The highest rates were found in men specializing in child psychiatry. Taking action to increase the distress tolerance, during training and in the follow-up process, will prevent the formation of burnout syndrome that is so common among physicians [6].

This problem has affected the Moldovan doctors, as well, as they are increasingly suffering from the symptoms. These are mainly oncologists and surgeons who spend most of their time at work. According to some data, every seventh doctor in Moldova suffers from burnout [7].

All these convincingly proves that burnout among medical professionals is an urgent problem due to their communication activity with people. Occupational stress in healthcare workers is

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due to their vulnerability, as they are always obsessed with work and are perfectionists by striving for an absolute control. All these excessive demands cause internal imbalances developing into professional stress. As a result, the phenomenon of burnout occurs, which is an alarming signal for those who are under stress before they get commonly diseased with cerebrovascular, cardiovascular, metabolic disorders, etc.

Currently, occupational health issues and personal well-being of doctors have attracted more and more attention of researchers [8-14].

First, this is due to the high "cost" of medical errors, which are likely to increase as a result a higher incidence of psycho-emotional conditions, tension and stress. Doctors are the representatives of the profession, who are required to interact intensely and considerably with people (patients, their relatives and colleagues). Medical professional stress can lead to desocialization, alienation and various professional and individual deformations, disruption of interpersonal relationships at work and within the family.

Most researchers are interested in the study of burnout syndrome as one of the commonest and most pronounced negative stress-related outcomes in medical practice [15,16]. There have been written several scientific papers, such as articles, PhD theses and monographs on emotional exhaustion or chronic fatigue syndrome, which are inevitably associated with this problem and result in professional distortions. There are a series of research papers on stress characteristics among physicians of various specialties [15,17].

However, the issues on development and specific manifestations of occupational stress among doctors of different specialties have not been systematically studied yet. Over time, this health issue has not disappeared, on the contrary, it actively "increases" its relevance. Moreover, the unknown aspects of this problem, of both today and tomorrow, will give way to new and relevant theoretical, applied and experimental research studies. The unclear picture of the interrelationship between the personal and psychophysiological characteristics of healthcare specialists regarding the symptoms and clinical presentation of occupational burnout syndrome, makes it difficult to provide appropriate means of prevention and correction of occupational stress among different categories of doctors.

The present research is a pilot survey of a questionnaire, aimed to study the peculiarities of burnout as a complex systemic health condition among healthcare professionals of various specialties in the Republic of Moldova, depending on their psychophysiological characteristics.

Material and Method

The pilot study consisted of implementing the questionnaire on "Identification of Occupational Stress Syndrome among Healthcare Workers (IOSSHW questionnaire)", which was designed on several 109 healthcare specialists working within medical institutions in the Republic of

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Moldova during 2020-2021. The questionnaire was completed online and the respondents had the opportunity to accept or refuse taking the survey. The respondents were informed about the confidentiality conditions in accordance with the provisions of the law. As participation in the study was voluntary, the informed consent was confirmed in 107 cases and 2 respondents refused to participate in the survey research.

The participants were selected according to inclusion and exclusion criteria of the study, which provided the following: the research participation agreement, being a resident of the Republic of Moldova, being a healthcare worker, working within a medical institution in the Republic of Moldova and the survey completion rate. The final sample included 73 medical specialists, which corresponded to the study purpose of establishing a possible link between the occupational exhaustion of doctors, their specialty, experience and workload, temperament and behavioral type.

The questionnaire is divided in two parts: the general one, consisting of 10 items and the special part of 131 items (the emotional and sentimental, behavioral, cognitive, communicative, individual-semantic and neurophysiological blocks), which made it possible to characterize the individual psychophysiological status and study of the burnout syndrome among healthcare workers.

The first question was related to the relationship between the doctor's specialty and burnout. According to the generally accepted classification, there are two main groups of medical specialties: the therapeutic specialties, which include doctors specializing in the diagnosis and non-surgical treatment of somatic disorders and diseases; and the surgical specialties, involving physicians using the surgical approach for treating diseases and injuries. The interviewees were divided as follows:

1. Physicians of therapy specialists who deal directly with patients (therapy, cardiology, endocrinology, gastroenterology, pneumology, etc.)
2. General practitioners and paediatricians
3. Surgical doctors
4. Healthcare providers without a direct patient contact

Results

According to the socio-demographic characteristics, 14 (19.2%) were men and 59 (80.8%) women out of the total number of the medical workers enrolled within this study. The mean age was 38.2 ± 1.1 years.

The data analysis showed that out of 73 medical workers surveyed, 28 people (38.3%) did not experience burnout syndrome, while 45 (61.6%) expressed some or other signs of burnout; in turn 38 (52.1%) and 7 (9.6%) of them were classified as having a mild level and a high level

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of burnout, respectively. It should also be noted that the highest burnout rate was registered among GPs and paediatricians (15 out of 20) and paradoxically, among specialists who have no direct contact with patients (8 out of 11); 16 out of 29 were doctors of therapeutic specialties and 6 out of 13 were surgical doctors (Table 1).

Moreover, there were reported changes in the constituent mental health blocks among doctors of different specialties under the influence of burnout. It was noted that therapeutic doctors with average level of occupational exhaustion presented frequent changes of the emotional, individual-semantic and cognitive blocks, whereas general practitioners and paediatricians of the emotional and cognitive blocks (Table 2).

Healthcare workers with a high level of burnout from these two groups displayed functional changes of the behavioral, communicative and neurophysiological block (Table 3). Occupational exhaustion in surgical doctors was characterized by frequent changes in cognitive and emotional blocks. This phenomenon, which was studied in doctors without a direct patient contact, regardless of their burnout level, was characterized by more uniform changes in all the constituent blocks.

More research was needed to further explore the relationship between work experience, work intensity and the burnout rate. The current study revealed that the incidence of occupational exhaustion was not related to the number of jobs of the respondents, however, their work experience was quite relevant. The most exposed to stressors health workers (77.1%) were those who had an experience of up to 10 years.

Furthermore, the relationship between the exhaustion of health workers, their behavioral type and their level of emotional stability was also of great interest. The research findings showed a direct connection between the healthcare worker burnout and both indicators. Thus, out of 34 physicians with an introverted behavior, 26 showed changes characteristic of emotional burnout (80%) and 53.5% among extroverts. It should also be noted that out of 36 emotionally stable employees, 61.1% referred to the group with a sanogenic state, while out of 37 interviewees only 18.9% were emotionally unstable.

As regarding the specificity of burnout characteristics among healthcare workers of different behavioral types and emotional stability levels, it should be noted that the number of introverts, characterized by changes in individual-semantic and cognitive blocks, exceeded the number of extroverts.

Medical Specialty				Work experience			Workplace		Behavioral Type		Emotional Characteristics	
Therapeutic specialists, %	Surgical specialists, %	GPs and pediatricians %	doctors with no direct contact with patients, %	>10 years, %	10-20 years %	10> years, %	1 job %	2 jobs, %	extraversion, %	introversion, %	Emotional stability, %	Emotional instability, %
Mean values of burnout level												
44.8	38.5	65	63.6	65.7	30.4	46.7	51.2	53.1	46.5	70	33.3	67.6
High values of burnout level												
10.4	7.7	10	9.1	11.5	17.4	6.6	12.2	6.3	7	10	5.6	13.5
Sanogenic condition												
44.8	53.8	25	27.3	22.8	52.2	46.7	36.6	40.6	46.5	20	61.1	18.9

Table 1: Burnout among various healthcare specialists.

	Emotional Block (%)	Behavioral Block (%)	Communicative Block (%)	Individual-Semantic Block (%)	Neurophysiological Block (%)	Cognitive Block (%)
Medical Specialty:						
<i>Therapeutic specialists</i>	42.8	100	25	55.5	50	37.5
<i>Surgical doctors</i>	9.6	-	25	11.1	-	18.7
<i>GPs and pediatricians</i>	42.8	-	25	22.3	-	37.5
<i>doctors with no direct contact with patients</i>	4.8	-	25	11.1	50	6.3
Work Experience:						
<i>>10 years</i>	61.9	100	50	55.5	100	68.8
<i>10-20 years</i>	19.1	-	25	22.2	-	18.7
<i>20> years</i>	19	-	25	22.2	-	12.5
Workplace:						
<i>1 job</i>	57.1	100	50	88.9	75	50
<i>2 jobs</i>	42.9	-	50	11.1	25	50
Behavioral Type:						
<i>extraversion</i>	52.4	-	50	22.2	50	37.5
<i>introversion</i>	47.6	100	50	77.8	50	62.5

Emotional Characteristics:						
<i>Emotional stability</i>	33.4	-	50	22.3	50	25
<i>Emotional instability</i>	66.6	100	50	77.7	50	75

Table 2: Mean values of burnout level.

	Emotional Block (%)	Behavioral Block (%)	Communicative Block (%)	Individual-Semantic Block (%)	Neurophysiological block (%)	Cognitive Block (%)
Medical Specialty:						
<i>Therapeutic specialists</i>	42.8	50	66.7	50	50	50
<i>Surgical doctors</i>	-	-	-	-	-	-
<i>GPs and pediatricians</i>	28.6	-	-	16.7	25	50
<i>Doctors with no direct contact with patients</i>	28.6	50	33.3	33.3	25	-
Work Experience:						
<i>>10 years</i>	57.1	50	33.3	50	50	100
<i>10-20 years</i>	42.9	50	66.7	50	50	-
<i>10< years</i>	-	-	-	-	-	-
Workplace:						
<i>1 job</i>	57.1	100	66.7	66.7	50	50
<i>2 jobs</i>	42.9	-	33.3	33.3	50	50
Behavioral Type:						
<i>extraversion</i>	57.1	50	33.3	25	50	-
<i>introversion</i>	42.9	50	66.7	75	50	100
Emotional Characteristics:						
<i>Emotional stability</i>	42.9	-	-	33.3	-	50
<i>Emotional instability</i>	57.1	100	100	66.7	100	50

Table 3: High values of burnout level.

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Discussion

The reviewed literature, aimed to elucidate the role of working conditions in the occurrence of burnout syndrome, provide a similar clinical picture, indicating that the increased workload and overtime hours might contribute to its development. The employees with a 12-hour working day have been shown to have a higher rate of occupational exhaustion than those with an 8-hour day. The scientific literature showed evidence that the incidence of burnout is independent of a person's age. It is commonly mediated by the length of the work experience, which correlates with the stages of professional development of specialists [17,15]. Our research agrees with these statements and shows that the highest burnout rate (80.0%) belongs to the group of specialists with less than 10 years of experience.

The researchers who have studied occupational stress among healthcare workers claim that it is likely to occur due to job specificity in general, which is characterized by intensity of interpersonal communication, increased workload and strict labour regulation, personal high-involvement work practice and responsibility. The scientific literature show evidence that the highest level of exhaustion is reported among resuscitators and surgeons compared to therapists who commonly experience an average level of burnout, which may be due to high emotional stress and responsibility levels of the first two professions [17]. The primary assumption of our research on the main factors contributing to the onset of burnout was the direct contact with patients. However, the research results show that although general practitioners and paediatricians are ranked first (75%) in terms of the burnout incidence among selected groups of specialists, healthcare workers without direct patient contact in their professional activity are placed on the second place (72.8%). This index is 46.2% among the group of anaesthetists and surgeons and 55.7% in the group of therapists. In our opinion, this may be due to the professional specificity, which requires a broader range of activity for the first two specialties, while the narrower specializations are inherent for surgeons and therapists.

There have been reported that stress in surgeons might be associated with worsening of the overall health condition, followed by anxiety and aggression, as well as signs of exhaustion, while in therapists the main stress manifestations are the worsening of the overall condition, anxiety and depression [17]. Our study showed that burnout syndrome among therapists, family physicians and paediatricians is manifested by a change in the emotional and cognitive areas, while therapists are more likely to develop symptoms related to the individual-semantic block. The occupational stress among specialists from the other two groups is characterized by a more uniform involvement of all mental health components.

Studies aimed at determining the nature of the relationship between burnout syndrome and the type of temperament, are of particular interest since they highlight the significant link between melancholic and choleric temperaments and emotional exhaustion syndrome, in other words, the burnout syndrome occurs more frequently in healthcare workers with these types of

temperaments [18,19]. This can be explained by unstable nervous system of choleric and melancholic patients, their sensitivity to low level of stress resistance, the predominance of excitation over inhibition processes, which combined with high-level stressors, can lead to neuropsychiatric diseases and occupational burnout. The N-Kruskal-Wallis test shows that groups differ by their temperament types, having a statistically significant value of $p < 0.001$ in terms of emotional exhaustion and depersonalization, thus, melancholic and phlegmatic people show signs of emotional exhaustion to a greater extent, while melancholic and choleric express depersonalization [19]. There are data on the association between the emotional exhaustion and temperament, as well as anxiety and stress resistance, which exhibit a considerable impact of personality traits on this syndrome. Thus, for example, melancholic people commonly express exhaustion, while phlegmatic people might display emotional stress [18].

The analysis of our study results has confirmed these data by providing evidence of the dependence of occupational burnout rate on the type of temperament and levels of emotional stability. Moreover, our research adds information to the database about the range of changes and the particularities of the building mental health blocks among healthcare workers of different behavioral types.

Conclusion

1. The problem of burnout prevalence among doctors of various medical fields is one of the most important research directions today
2. The present study highlighted the interdependent relationship between the changes in the functions of the constituent mental health blocks, various specialties and psychophysiological characteristics
3. This research registered the interrelationship between doctors' burnout, their behavioral types and levels of emotional stability
4. Insufficient knowledge regarding this problem requires further theoretical, applied and experimental research studies

Conflict of Interests

The authors declare no conflicts of interest.

Ethical Approval

The study was approved by the Ethics Committee of the Nicolae Testemitanu, State University of Medicine and Pharmacy from the Republic of Moldova. Dated on 24.11.2020; no. 1.

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