

## EFFECT OF PSYCHOLOGICAL CLIMATE ON RISKS OF BURNOUT SYNDROME IN A TEAM OF HEALTHCARE PROFESSIONALS

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Healthcare professionals deal with the greatest prevalence of burnout syndrome (BS). The object of this paper is to study the effect of psychological climate and working conditions on risks of burnout in a team of healthcare professionals. Working conditions of 136 healthcare workers from the Saratov region who underwent little training were examined according to Regulation 2.2006–05. The level of burnout was estimated in accordance with the method of V. V. Boyko, and the psychological climate in a team was analyzed using A. F. Fiedler's questionnaire. The results were processed with the help of Microsoft Excel 10 for Windows. Based on the research results, the BS signs were recorded in 52.3% of healthcare workers. Physical and emotional symptoms were predominant BS signs. Factors predisposing to BS in healthcare workers have been determined. It is established that there is a dependence between a harmful factor of working conditions and probable BS. The dependence acquires significance at 3.2 level of working conditions. It is determined that the risk of BS was 74.3% in the most unfavorable psychological climate, and didn't reach 21% if the climate was favorable.

**Keywords:** medical workers, working process conditions, psychological climate in a team, burnout syndrome

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**Compliance with ethical standards:** the trial was approved by the Local Ethics Committee of V. I. Razumovsky Saratov State Medical University (protocol No. 5 as of 02.03.2021). Voluntary informed consent was obtained from every trial participant and signed by all those examined by healthcare professionals. The trial corresponded to the requirements of biomedical ethics. No participant was exposed to danger.

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## ВЛИЯНИЕ ПСИХОЛОГИЧЕСКОЙ ОБСТАНОВКИ НА РИСК РАЗВИТИЯ ЭМОЦИОНАЛЬНОГО ВЫГОРАНИЯ В КОЛЛЕКТИВЕ МЕДИЦИНСКИХ РАБОТНИКОВ

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Распространенность синдрома эмоционального выгорания (СЭВ) остается наибольшей среди работников медицинских профессиональных групп. Цель работы — изучение влияния психологической обстановки и условий труда на риск развития эмоционального выгорания в коллективе медицинских работников. Изучены условия труда 136 малостажированных медработников лечебных учреждений Саратовской области согласно Руководству 2.2006–05. Уровень эмоционального выгорания оценивался по методике В. В. Бойко, анализ психологической обстановки в трудовом коллективе — по опроснику А. Ф. Фидлера. Обработка результатов исследования проводилась с помощью прикладных статистических программ Microsoft Excel 10 for Windows. По результатам исследования у 52,3% медицинских работников регистрировались признаки СЭВ. Среди групп симптомов СЭВ преобладали: физические и эмоциональные симптомы. Определены факторы, предрасполагающие к возникновению СЭВ у медработников. Установлено, что между фактором вредности условий труда и вероятностью развития СЭВ имеется зависимость, которая становится значимой при классе условий труда 3.2. Определено, что при максимальном уровне неблагоприятной психологической обстановки в коллективе риск развития СЭВ составлял 74,3%, при благоприятной обстановке — не превышал 21%.

**Ключевые слова:** медицинские работники, условия трудового процесса, психологическая обстановка в коллективе, синдром эмоционального выгорания

**Вклад авторов:** Елисеева Ю. В. — научное руководство, концепция и дизайн исследования, написание статьи, утверждение рукописи для публикации; Ратушная Н. Ш. — сбор, получение и обработка данных, анализ и интерпретация результатов, написание статьи; Дубровина Е. А. — сбор, получение и обработка данных, анализ и интерпретация результатов, написание статьи.

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One of the most important tasks of hygienic science and sanitary practice includes preservation and promotion of health among medical workers [1–6]. To solve the task, it is necessary to develop a real methodology analyzing professional risks for health of medical workers based on the study of working conditions [7–23], and on detailed analysis of the ‘climate’ in teams, conditions of stressful circumstances and possible concurrent burnout (BS) among medical personnel. During the last 10 years, prevalence of BS among medical workers has been increased by 1.5–2 times [24]. BS significantly exceeds the level noted in any other professional team for now and reaches critical levels in healthcare industry [25–29]. Analysis of the outcomes obtained through implementation of the suggested methodology can result in subsequent correctly substantiated development of preventive activities designed to decrease occupational morbidity of healthcare workers.

The purpose of the paper consisted in studying the effect of psychological climate and working conditions on risks of burnout in a team of healthcare professionals who underwent little training.

## MATERIALS AND METHODS

The conditions of occupational environment, severity and intensity of the working process when surveying 136 working positions of medical professionals who underwent little training (1 to 5 years of work) from health facilities of the Saratov region were examined in accordance with Guideline 2.2006–05 ‘Hygienic estimation of environmental factors and working process. Criteria and classification of working conditions’. The level of burnout in healthcare professionals was assessed following the generally accepted method by V. V. Boyko [30]. The method allows to record separate signs or symptoms of burnout (12 of them in total) associated with subsequently developed stages (phases) of stress: tension, resistance and exhaustion. The psychological climate among employees was analyzed using A. F. Fiedler's questionnaire. It was used to estimate words with an opposite meaning by a number of bipolar scales. For this, cognitive studies were conducted by the technique of semantic differential of verbal antonyms.

The technique is interesting due to a combination of a scaling procedure selecting the most significant (up to 8 scores) response out of 10 points in the anonymous examination. As a result, the final indicator of the psychological climate among employees can reach 10 (the most positive result) to 80 points (the most negative result). The study results were processed with the help of Microsoft Excel 10 for Windows. The level of difference significance ( $p < 0.05$ ) was determined using a Mann-Whitney U-test for non-parametric values.

## TRIAL RESULTS

Based on the trial results, initial signs of BS (tension phase) were recorded in the majority of examined healthcare professionals (52.3%). BS prevalence in various professional teams was estimated at the average level of 30–60%.

Physical (tiredness, physical fatigue, exhaustion, weight change, poor sleep, a rise in arterial blood pressure, cardiovascular diseases) and emotional symptoms (lack of emotions, pessimism, cynicism, indifference, tiredness, feeling of helplessness and despair, aggressiveness, irritability, anxiety, increased irrational anxiety, inability to concentrate; depression, feeling of guilt, loss of ideals, hopes or professional perspectives, increased depersonalization) were predominant BS signs.

According to the opinion of healthcare professionals, the most frequent factors leading to BS included tight schedule and working conditions; the level of salary not corresponding to applied physical efforts; impossibility to influence the activity result; monotonous, dead-end job; necessity to show emotions that don't correspond to inner feelings; lack of time; necessity to work during free time; frequent negative labor estimation; chaotic organization of working time; unhealthy competition in the employment setting.

It is established that the factors of a working process determining levels of working conditions among healthcare professionals produced a direct effect on risks of BS in medical personnel from the studied MPI of the Saratov region (table 1). Thus, considering the conducted working process, the risk of burnout at 2.0 level of working conditions and in 5 years of working experience amounted to 30.7%. In 46.6% of cases, BS was developed at 3.2 level of working conditions and with a similar period of working experience. Taking into account the obtained data, an interrelation between the harmful factor of working conditions and risk of BS can be suggested.

Our studies have shown that the maximum risk of BS was associated not only with 3.2 level of working conditions, but also with the level of unfavorable psychological climate among healthcare professionals (table 2). Thus, when the maximum level of unfavorable psychological climate in a team of healthcare professionals reaches the score of 80, the risk of BS was 74.3%. Under the favorable conditions (the score of 20) the risk of BS didn't exceed 21%.

## DISCUSSION OF RESULTS

In accordance with literature data presented by Russian authors, over half of different healthcare professionals in Russia report constantly high psychoemotional tension. The latter is accompanied with a significant growth of the so-called burnout syndrome among healthcare professionals with reasonable dismissal and subsequent reduction of qualified staff. There is an opinion that burnout produces a negative effect on a doctor's working capacity, his/her health and quality of aid, but it can also play a protective role.

Burnout symptoms probably occur to protect the mind from subsequent damage when there is no way out [28–29]. In all works presented by the authors, BS is reasonably related either to the profession of a medical worker (psychiatrist, narcologist, oncologist) or to age-related traits of a specialist and his or her professional experience [25–27]. However, it should be noted that unlike our trials, the abovementioned authors failed to analyze the interrelation between BS and unfavorable psychological climate inside a team, and study the severity and intensity of doctors'

**Table 1.** Risk of BS at the stage of exhaustion among medical personnel (in %) considering the effect of working conditions (level) and employment term

Working conditions (level)	Employment term (completed years)				
	1 year	2 years	3 years	4 years	5 years
2.0	–	–	12.2	24.3	30.7
3.1	–	16.2	18.8	28.6	33.4
3.2	–	19.8	23.4	36.8	46.6

**Table 2.** Risk of BS at the stage of exhaustion among medical personnel (in %) considering the effect of working conditions (level) and various level of unfavorable psychological climate in a team of people with similar 5 years of employment

Working conditions (level)	Level of unfavorable psychological climate in a team of healthcare professionals with completed 5 years of employment (in scores)			
	20	40	60	80
2.0	4.7	12.3	24.2	32.4
3.1	16.2	24.6	33.2	58.5
3.2	21.0	38.6	48.9	74.3

harmful working conditions. Meanwhile, the study conducted by us has fully confirmed our hypothesis about the interrelation between BS and intensity of psychological ill-being in a medical team and harmfulness level of working environment.

The results obtained during the conducted trial provided strong evidence for current dependence of medical workers' health protection not only on working conditions, but also on the nature of unfavorable psychological climate in a team. This resulted in development of burnout syndrome among healthcare professionals.

## CONCLUSION

1. In a half of examined healthcare professionals with up to 5 years of employment, initial signs of burnout were determined during the conducted trials.
2. In the permissible limit of working conditions, the prevalence of burnout was determined in 30.7% of cases, whereas in harmful conditions of 2 degree it was defined in 46.6% of cases.
3. In the most unfavorable psychological climate (in scores) the risk of burnout among healthcare professionals was 74.3%.

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