

PEST-Analysis of Factors of Medical Workers' Professional Burnout

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ABSTRACT

Objective: Testing the PEST-analysis for assessing of influence of environmental factors on the emotional state of the medical personnel of the Volgograd Region State Budgetary Healthcare Institution "Central District Hospital of the Dubovsky Municipal District" in the context of professional burnout.

Results: Determination of the level of professional burnout showed that the hospital's health workers are subject to emotional burnout, which is associated with a busy schedule and high responsibility. The formation of professional burnout (exhaustion) is 20% of the respondents, while 17% have already formed it. The staff's opinion regarding the influence of environmental factors on the emotional state of health workers coincided with experts' opinion, economic and socio-cultural factors were highlighted by them as priorities. The most significant contribution was decreasing the population's real disposable income with an increase in tariffs for paid medical services (81.7%). Among the internal environment factors, the most significant influence on the psycho-emotional state of medical workers, according to the respondents, is exerted by relationships with colleagues within the team (51.7%) and material incentives (70.0%).

Conclusion: PEST-analysis allows to supplement the overall picture of assessing medical workers' professional burnout to develop programs to prevent this phenomenon.

Keywords: External environment, PEST-analysis, Professional burnout, Healthcare, Medical organization.

1. INTRODUCTION

We are witnessing a kind of "division" of Medical organizations (hereinafter – MO) operate in an external environment, which includes numerous and varied factors that have both indirect and direct impact on the work of the MO.

Lack of information on the external environment inevitably leads to uncertainty, which negatively affects various aspects of the organization's activity, including affecting workers' emotional state to develop professional burnout.

From the point of view of E.Z. Usmanova, A.V. Raikov, M.D. Makhmudzhanova, professional burnout is

understood as the state of physical, emotional and intellectual exhaustion, which is formed in workers of al-oriented professions, which, in particular, include medical personnel [1, p.68]. According to Q. Zhang, et al., and F. Sanfilippo, et al., burnout syndrome is manifested in the medical profession due to the high intensity of activity [2,3] and the influence of several factors [4,5], among which from the point of view of A. Sabitova, S.Z. Sajun, S. Nicholson, et al., economic factors are of great importance [6]. In the context of a coronavirus infection pandemic, the problem of burnout of medical workers tends to worsen [7].

The use of management methods, in particular PEST-analysis, allows not only to determine the degree of

various factors influence on the process of employee burnout but also to carry out strategic planning of the activities of the MO, considering the influence of each of the manifested political, legal, economic, socio-cultural, technological factors.

Our study's objective was to test the PEST-analysis for assessing the influence of environmental factors on medical workers' emotional state in the context of professional burnout.

2. RESEARCH METHODS

The study was based on the medical personnel of the State Budgetary Healthcare Institution "Central District Hospital of the Dubovsky Municipal District" of the Volgograd Region (hereinafter referred to as the CDH). The studies were conducted in February 2020, before the onset of the coronavirus pandemic.

The analysis of the factors of professional burnout of employees of the CDH was carried out based on the use of PEST-analysis, the method of V.V. Boyko, which allows assessing the phase of emotional burnout and the severity of specific characteristic symptoms in each of its three phases [8], and oral questioning of 60 medical workers.

In the sample, approximate gender and age equality were observed (32 people - women and 28 - men, the respondents' age was from 30 to 45 years). The experts were 2 doctors of the studied medical institution and one of the co-authors of this study.

3. RESULTS

The CDH at the beginning of 2020 had a hospital for 174 beds, of which 54 were for daytime patients and a polyclinic designed for 360 visits per shift, including paediatric department. The number of people served by the CDH is 29570 people [9].

The hospital includes the following departments: therapeutic, surgical, paediatric, gynaecological, infectious, paediatric, palliative care, anaesthesiology and resuscitation department, emergency department. The work of the polyclinic is organised in two shifts. Laboratory, X-ray, ultrasound, functional diagnostics, endoscopy are carried out.

The CDH is not fully staffed with medical personnel and paramedical personnel. As of the beginning of 2020, doctors' vacancies have opened: district paediatricians (2 posts), a general practitioner (3 posts), a surgeon. Vacancies for mid-level medical personnel: medical laboratory technician (paramedic-laboratory assistant) - 2 staff units, an ambulance paramedic, a district nurse [9].

At the beginning of 2020, the total number of paramedical personnel in the CDH was 137 people, and 34 doctors were employed. The coefficient of part-time

work among doctors is 1.4 (calculated as the ratio of the full-time employees' number to the number of those working in the MO). Achievement of the indicator's critical value (1.5) shows that medical personnel work with overload, and adjustments to personnel's employment are necessary. Otherwise, employees' emotional state may deteriorate with the emergence of a risk of reducing job duties' quality of performance [10].

It should be noted that the CDH annually conducts a special assessment of the working conditions of specific categories of medical workers according to the following indicators [9]: chemical and biological factors; aerosols of predominantly fibrogenic action; assessment of noise levels, infrasound, airborne ultrasound; general and local vibration; non-ionising radiation; microclimate; light environment; the severity and intensity of the labour process; the final class (subclass) of working conditions; the final class (subclass) of working conditions, taking into account the effective use of personal protective equipment; the presence of an increased amount of wages; the presence of an additional annual paid leave; reduced working hours; preventive nutrition; preferential pension provision.

Thus, in the considered MO, the state of factors of the organization's internal environment is monitored. The influence of environmental factors on the emotional state of employees is not assessed. Thus, management activity considers the personal characteristics and factors of the internal environment exclusively.

The data obtained by us on the PEST-analysis of the CDH are shown in table 1.

Considering that the PEST-analysis is a form of express research and represents only a part of the SWOT-analysis (the optimised study of the opportunities and threats of the macroenvironment), it allows in a short period to identify the critical subsystems and factors of the macroenvironment.

The fluctuations probability is assessed on a 5-point scale, where 1 means the minimum probability of a change in the environmental factor, and 5 – the maximum probability [11]. Our data are presented in table 2.

Based on the presented score, the most significant for the activities of the CDH are economic factors - their overall assessment was 20.4 points. In second place in terms of importance are socio-cultural factors, their overall score is 12. These factors are likely to significantly impact the level of professional burnout of the studied medical organization's medical staff.

An analysis of the responses of medical workers of the MO showed that many of them showed signs of different levels of formation of the phases of emotional burnout (table 3).

Table 1. Matrix of PEST-analysis of the CDH

Political and legal factors
1. Changes in sectoral legislation, adoption of the Concept to develop the Russian Federation's healthcare system until 2030, implementing the national project "Health Care" and the program "Zemsky Doctor". 2. Reforming Health Care. 3. Development and implementation of standards and procedures for the provision of medical care.
Economic factors
1. Increase in inflation and, as a consequence, expenses of the MO. 2. Rising prices for imported medical equipment and pharmaceuticals. 3. Changes in patient financing under the state guarantee program. 4. Completion of the transition to a single-channel financing system. 5. Decrease in real disposable income of the population.
Sociocultural factors
1. Deteriorating demographic indicators. 2. The prevalence of drug addiction and alcoholism increases the number of suicides among adolescents. 3. General deterioration in the mental health of the population. 4. Age composition of medical personnel. 5. Population's preference for economy-class medical services.
Technological factors
1. The growth of scientific developments in medicine. 2. The emergence of high-quality new domestic medical equipment and pharmacological agents. 3. The high cost of scientific research in medicine.

Table 2. Scoring PEST-analysis of the CDH

Factors	Influence of the factor	Expert assessment			Average assessment
		1	2	3	
Political and legal factors					
Factor 1	2	5	4	4	4,3
Factor 2	2	4	3	3	3,3
Factor 3	2	2	2	2	2,0
The final score for the indicator					9,6
Economic factors					
Factor 1	3	5	5	4	4,7
Factor 2	2	3	3	3	3,0
Factor 3	2	5	4	5	4,7
Factor 4	3	4	4	4	4,0
Factor 5	3	4	4	4	4,0
The final score for the indicator					20,4
Sociocultural factors					
Factor 1	3	3	2	3	2,0
Factor 2	2	3	4	5	4,0
Factor 3	2	2	2	3	2,3
Factor 4	2	3	4	4	3,7
The final score for the indicator					12,0
Technological factors					
Factor 1	2	5	4	4	4,3
Factor 2	2	4	3	3	3,3
Factor 3	1	2	2	1	1,7
The final score for the indicator					9,3

Table 3. Analysis of the emotional burnout of health workers of the CDH (according to V.V. Boyko)

Phase	Formation level	Number of res-pondents	%
Over-pressure	Not formed (less than 36 points)	42	70
	Phase at the stage of formation (in the range of 37-60 points)	18	30
	The phase is formed (from 61 and more points)	0	0
Resi-stance	Not formed	35	58
	Formation phase	18	30
	Phase formed	7	12
Ex-haustion	Not formed	38	63
	Formation phase	12	20
	Phase formed	10	17

It seems possible to have an upbeat assessment that 70% of respondents did not have a stress phase when emotional burnout occurs. Only 30% are at the stage of forming a resistance to destructive changes in the psycho-emotional state, which may be related to the conditions of the organizational environment and their professional activities' specifics. In 35 people, the phase of resistance is not formed, i.e., resistance and counteraction to emotional burnout; therefore, it is a risk group exposed. The exhaustion phase in 12 medical workers is in the formation stage, and in 10 respondents it is already formed.

To assess the impact of environmental factors on medical workers' emotional state, we conducted a survey of the CDH on the same factors used by experts in our study. Also, the survey assessed internal factors that could influence the burnout rate of medical personnel. The most frequently encountered factors were selected from the answers of the respondents. The results of a survey of 60 respondents are presented in table 4.

4. DISCUSSION

In carrying out professional activities, emotions perform certain subjective-personal functions, namely, functions that act as an internal regulator of activity, assessment and internal motivation. They cause some degree of mobilisation of the health worker's physical and mental health reserves in stressful situations. Quite clearly, different health workers' reactions to non-standard situations are manifested under extreme conditions [12, p.18].

The main features of an adequate response, in this case, are the increase in search activity to preserve health and improve the indicators of professional behaviour (for example, the speed and accuracy of performing the assigned tasks increases, actions become streamlined and logical, the algorithm of work based on stress resistance

skills changes by eliminating unnecessary actions from it), the predominance of socially significant civic motives for fulfilling a duty. With a discrepancy between the situation's requirements and the health worker's physical and socio-mental state capabilities, tension may develop, developing into a bad reaction with destructive consequences (somatic breakdowns of adaptation and exacerbation of chronic diseases). At the same time, the fixation on negative experiences, failures lead to disorganization of the health worker's activity [13, p.76].

The first phase is increasing emotional stress, which is characterised by dissatisfaction with oneself, depressive states characterised by somatic abnormalities of general health (fatigue, insomnia, excessive excitability, etc.). The second phase ("resistance") is the person's unconscious desire for psychological comfort through emotional defences. Emotional and moral disorientation arose, expressed in an inadequate response to colleagues' actions, a desire to facilitate their duties by unauthorised reduction [14, p.135].

The third phase is emotional exhaustion, which manifests itself in a decrease in vitality, a weakening of the nervous system; in fact, "burnout" is characterised by emotional deficit and detachment. For this phase, psychosomatic and psycho-vegetative disorders are characteristic features. The employee becomes indifferent to his professional duties, complete indifference towards people and society in general arise. Devastation passes from professional activity to the personal sphere [15, p.41].

The study of the emotional burnout of health care workers showed that it is combined with low subjective indicators of the significance of activities, low adaptability, lack of the ability to self-regulation, a tendency to destructive problem solving or avoidance and care in difficult situations, accompanied by states of anxiety, anxiety and fear.

The main determinants of mental burnout are behavioural factors, including non-constructive models of overcoming behaviour –avoidance, manipulation.

An important factor that reduces the importance of the activities of health workers of the CDH is the difficulty of professional growth and promotion. This tendency is because a higher position presupposes a large amount of official competence and a higher level of responsibility.

According to V.V. Boyko, determination of the level of professional burnout showed that the health workers of the CDH are subject to emotional burnout, which is associated with a busy schedule and high responsibility. The formation of professional burnout (exhaustion) is 20% of the respondents, while 17% have already formed it.

The staff's opinion regarding the influence of environmental factors on the emotional state of health workers coincided with experts' opinion, economic and socio-cultural factors were highlighted by them as priorities. The most significant contribution was decreasing the population's real disposable income with an increase in tariffs for paid medical services (81.7%).

Among the factors of the internal environment, the most significant influence on the psycho-emotional state of medical workers, according to the respondents, is exerted by relationships with colleagues within the team (51.7%) and material incentives (70.0%).

5. CONCLUSION

The general picture of the severity of the emotional burnout of medical workers of the CDH indicates the advisability of taking measures aimed at increasing the satisfaction of medical workers with their work.

PEST-analysis and a survey of the medical staff regarding the external environment's factors on professional burnout showed similar results: the main ones are economical and socio-cultural factors. Also, the medical organization's internal environment (relationships in the team and material incentives) impacts workers' psycho-emotional state.

Our study's results on the hospital example showed that PEST-analysis allows us to supplement the overall picture of assessing the level of professional burnout of medical workers to develop programs to prevent this phenomenon.

REFERENCES

[1] E.Z. Usmanova, A.V. Raikov, M.D. Makhmudzhanova, The relationship between professional burnout, socio-psychological attitudes, and the Dark Triad qualities in physicians with

different professional experience, *Bulletin of Moscow University* 4 (2017) 68–84.

- [2] Q. Zhang, M-c Mu, Y. He, Z-l Cai, Z-c. Li, burnout in emergency medicine physicians: a meta-analysis and systematic review, *medicine* 99:32 (2020) e21462.
- [3] F. Sanfilippo, G.L. Palumbo, A. Noto, S. Pennisi, M. Minieri, F. Vasile, et al., the prevalence of burnout among intensive care physicians: a systematic review, *Rev Bras Ter Intensiva* 32(3) (2020) 458–467.
- [4] Xj. Zhang, Y. Song, T. Jiang, N. Ding, Ty. Shi, Interventions to reduce burnout of physicians and nurses: an overview of systematic reviews and meta-analyses, *medicine* 99:26 (2020) e20992.
- [5] E.N. Tkachenko, V.L. Adzhienko, A.S. Popov, Emotional burnout syndrome in ambulance doctors (on the example of a small town), *Bulletin VolgSMU* 1(41) (2012) 41–43.
- [6] A. Sabitova, S.Z. Sajun, S. Nicholson, et al., Job morale of physicians in low-income and middle-income countries: a systematic literature review of qualitative studies. *BMJ Open* 9 (2019) e028657. DOI: <https://doi.org/10.1136/bmjopen-2018-028657>
- [7] G. Salazar de Pablo, J. Vaquerizo-Serrano, A. Catalan, C. Arango, C. Moreno, F. Ferre, J.I. Shin, S. Sullivan, N. Brondino, M. Solmi, P. Fusar-Poli, Impact of coronavirus syndromes on the physical and mental health of health care workers: Systematic review and meta-analysis, *J Affect Disord* Oct. 1 275 (2020) 48-57. DOI: <https://doi.org/10.1016/j.jad.2020.06.022>
- [8] N.P. Fetiskin, V.V. Kozlov, G.M. Manuilov, Socio-psychological diagnostics of the development of personality and small groups, Publishing house of the Institute of Psychotherapy, 2002, 490 p.
- [9] SBHI "Central District Hospital of Dubovsky Municipal District". Retrieved from: <http://www.dubovkacrb.ru/>
- [10] How to calculate the doctor's part-time rate? Retrieved from: <https://russiansu.ru/sovmetitelstvo/kak-rasschitat-koefficient-sovmestitelstva-vrachey.html>
- [11] Step-by-step instructions for compiling a PEST-analysis. Retrieved from: <http://powerbranding.ru/biznes-analiz/pest/example/>
- [12] V. Belyaeva, Emotional burnout of medical workers: prerequisites and prevention practices, LAP Lambert Academic Publishing, 2019, 100 p.

- [13] T.B. Kodlubovskaya, Features of the manifestation of signs of emotional burnout in doctors, *Questions of psychology* 2 (2014) 75–80.
- [14] Yu. V. Bessonova, Value determinants of burnout syndrome: [report], *Materials of the final scientific conference of the Institute of Psychology of the Russian Academy of Sciences*, February 11-12, 2019, pp. 132–147.
- [15] A.I. Bogatyrev, L. Moskalenko, Burnout syndrome: diagnostics, prevention, correction, *A practical guide for medical workers of different skill levels*, Yekaterinburg, Palmarium, 2019, 72 p.