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# Wiadomości Lekarskie Medical Advances



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## ORIGINAL ARTICLE

# PREDICTORS OF THE DEVELOPMENT OF EMOTIONAL BURNOUT AND THE MOTIVATIONAL COMPONENT OF THE MEDICAL STAFF OF HEALTH CARE INSTITUTIONS IN UKRAINE

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## ABSTRACT

**The aim:** To study the stages and diseases of occupational and emotional burnout syndromes and characterize the changes in the psychophysiological state of the medical staff of health care institutions.

**Materials and methods:** Manifestations and levels of predictors of the development of emotional burnout (PDEB), motivation of medical workers in the Vinnytsia region, and preventive measures of PDEB to improve the motivational component of medical workers. Statistical processing of the research results was performed in the licensed standardized package "Statistica 6.1 for Windows", and included the analysis of the nature of the distribution of characteristics using the Shapiro-Wilk's *W* test, and the analysis of differences using the Mann-Whitney test. The content analysis of domestic and foreign scientific sources and biblio-semantic and analytical research methods were used in the work. A sociological study was conducted on the dynamics of changes in the psychophysiological state of health of medical staff of psychiatric hospitals and medical staff of general health care facilities (CHP) in the Vinnytsia region, depending on gender and positions.

**Results:** A survey has been conducted using psychodiagnostic methods of emotional burnout by Boyko V.V. and the adapted approach of Vodopyanova N.E. According to the results of K. Zamfir's method in A. Rean's modification, it was established that external negative motivation exceeds external positive motivation in health care staff, as in male doctors and female doctors from  $3,2 \pm 0,8$  to  $2,7 \pm 1,0$  score and the average medical staff of psychiatric profile in men  $3,2 \pm 1,8$  and  $3,0 \pm 1,3$  and the average medical staff of general profile  $3,6 \pm 1,0$  and  $3,2 \pm 1,1$ , respectively, which reflects the negative attitude of the medical staff at the present stage to the implementation of professional activities.

**Conclusions:** Predictors of the development of emotional burnout are noted in the average female medical workers working in psychiatric institutions: "Stress" –  $41.3 \pm 19.2$  points versus  $33.6 \pm 22.2$  points ( $p > 0.05$ ), "Resistance" –  $56.6 \pm 21.4$  points against  $40.5 \pm 16.6$  points ( $p < 0.05$ ), "Exhaustion" –  $41.5 \pm 21.4$  points against  $39.4 \pm 27.4$  points ( $p > 0.05$ ) compared to men, who may be at risk of transition from a pre-morbid state (mild, moderate form of SPV) to a severe form of chronic psychosomatic or psychovegetative disorder.

**KEY WORDS:** mental health, emotional burnout, motivation, health professionals, health, prevention

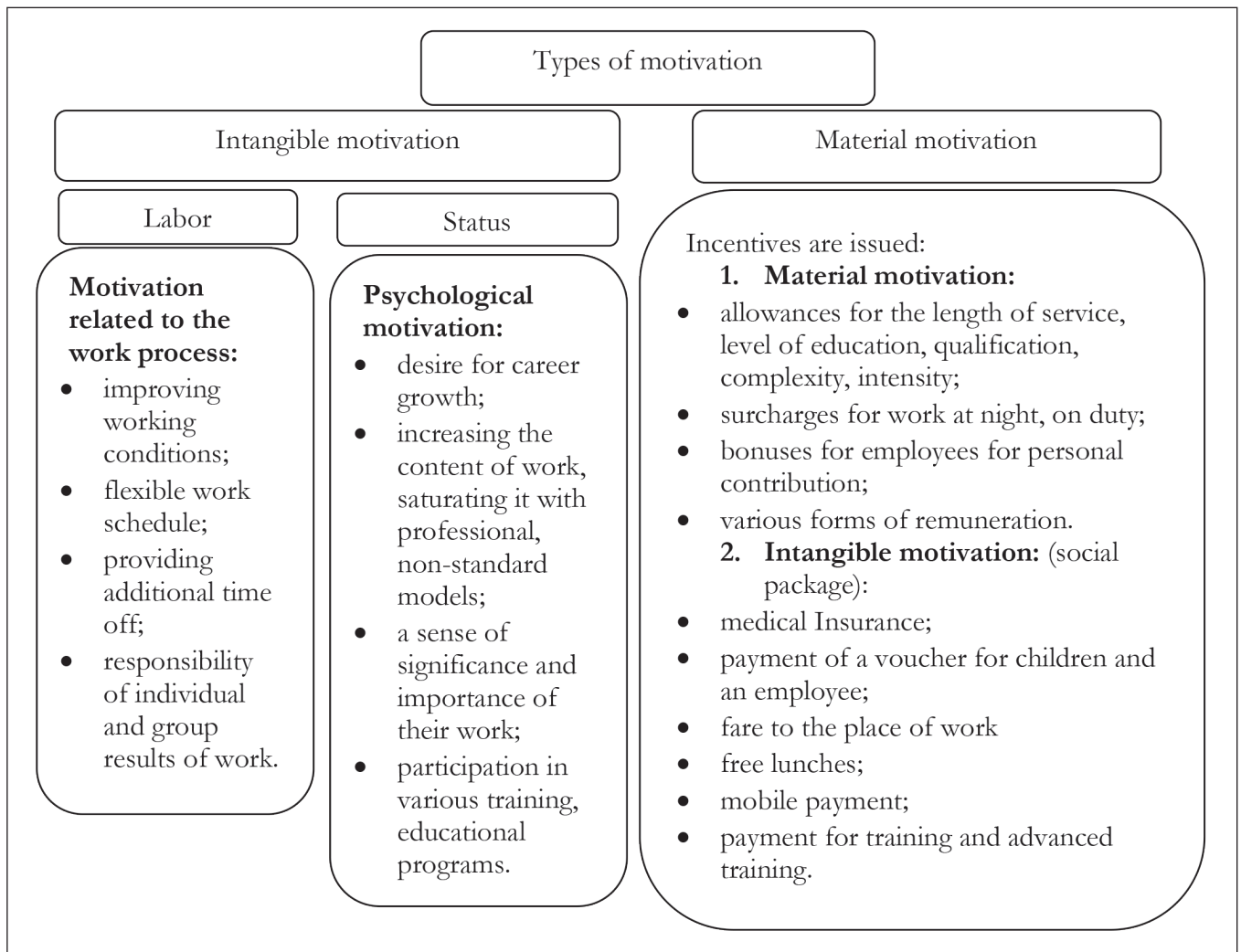
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## INTRODUCTION

The phenomenon of "emotional burnout syndrome" (EBS) or "predictors of the development of emotional burnout" (PDEB) has been studied in the medical field of health for many years from the healthcare professional making an immediate decision, intellectual effort, confidentiality, compassion and respect for the patient and their relatives while maintaining high efficiency in extreme conditions. Working in extreme/stressful conditions has an impact on the health of the health worker and is a risk of occupational disease, but also affects the quality of medical care. European plan for a comfortable stay at the WHO workplace for 2013-2020 introduced several measures/recommendations that will help maintain a balance between personal life and work, value employees, identify early signs of

burnout, introduce stress management and improve the provision of quality, highly specialized care to the world's population [1-7].

Lack of motivation of health workers in constant stressful situations in the workplace in the field of health affects the quality of medical services in the field of mental health of the population of Ukraine and the EU [6,7]. In Ukraine, the birth, morbidity, disability, life expectancy, and mortality rates have been steadily deteriorating in recent years, pointing to a deep health crisis and the need to modernize the health care system. Incomplete reform in the field of health care in Ukraine creates conditions that are not able to regulate the processes of motivation of medical staff due to underfunding in this area, leading to a deterioration in the quality of medical care to the population of Ukraine [8].



**Fig. 1.** The scheme of the motivational component of the professional activity of health workers (compiled by the authors of scientific research)

According to Suleiman-Martos N., Zhang S., Azam K., and many scientific studies around the world, the burn-out rate among physicians and health care professionals is in the range from 31,4% to 85,8%, but in Ukraine, this figure is higher and ranges from 73,0% to 89,3% [2-4].

The UN has declared the development of health care facilities (HCFs) and the provision of human/medical resources, and the creation of appropriate working conditions for them until 2030 as a priority policy of many countries [5].

The purpose of the work is to determine the manifestations and level of PDEB, the motivation of medical workers in the Vinnytsia region, and the development of preventive measures for PDEB and to improve the motivational component of medical workers.

**THE AIM**

This study aims to study the stages and diseases of occupational and emotional burnout syndromes and to characterize the changes in the psychophysiological state of the medical staff of health care institutions.

**MATERIALS AND METHODS**

Our sociological study involved 326 health workers of the Vinnytsia region, of which men – 17,5% and women – 82,5%. The number of psychiatrists who took part in the survey was 23,0%, and the average number of psychiatric and general medical staff (SME) was 77,0%. Experience of professional activity among physicians was 20,4±12,8 years, and among SMP 16,1±11,2 years of the experimental group (psychiatric medical staff) and 22,5±11,8 years of control group (general medical staff)). The average age among psychiatrists was 44,5±12,7 years, among SMP 38,0±11,4 years of the experimental group (medical staff of psychiatric profile) and 42,1±11,3 years of the control group (general medical staff).

A sociological study was carried out using the method of emotional burnout Boyko V.V. and the adapted method of Vodopyanova N.E., which had evaluated by the following gradations: low, medium, high, and very high level of change (points).

According to the results of K. Zamfir’s method in A. Rean’s modification, this method allows determining

the relevance of types of motivations: external positive motivation (EPM) - achieving career growth, external negative motivation (ENM) – unpleasant to receive criticism from management.

Statistical processing of the research results was performed in the licensed standardized package «Statistica 6.1 for Windows,» and included the analysis of the nature of the distribution of characteristics using the Shapiro-Wilk's W test and the investigation of differences using the Mann-Whitney test.

## RESULTS

An analysis of scientific research and current legislation to study the problem of motivation and burnout syndrome of medical workers shows that these issues have not been resolved at the state level. We conducted a sociological study on the dynamics of changes in the psychophysiological state of health of medical staff of psychiatric hospitals and general staff of health care institutions (CHC) in the Vinnitsa region, depending on age and length of service.

The main factors of professional burnout are individual factors – psychophysiological processes of the human body (temperament, character, traits); factors that affect a person from the outside – working conditions, excessive work demands, communication between colleagues, insufficient conditions for rest or relaxation, psychological comfort in the team, low financial status (low wages), etc. (Table I) (Compiled by the authors on scientific research).

We conducted a sociological study on the dynamics of changes in the psychophysiological state of health of medical staff of psychiatric hospitals and medical staff of health care institutions (HCI) in the Vinnytsia region, depending on age and length of service. A survey has been conducted using psychodiagnostic methods of emotional burnout by Boyko V.V. and the adapted technique of Vodopyanova N.E. Using the practice of Boyko V.V. an assessment of three phases of development of predictors of emotional burnout (DPEB): the phase of stress, resistance, and exhaustion [9]. Furthermore, according to the results of the questionnaire "Professional burnout" (PV), adapted method Vodopyanova NE identified: "emotional exhaustion", which is characterized by loss of energy, the appearance of signs of psychophysiological fatigue, signals of anxiety and depression, anger, aggression, a sense of exhaustion; "Depersonalization", which is characterizing by increased psychological distancing from work, decreased empathy and cynical attitude towards others, patients, pessimistic thoughts about work; "Reduction of professional achievements", which is characterized by negative self-esteem, indifference to the performance of their professional duties and reduced professional efficiency, reduced professional motivation and self-esteem.

According to the results of the psychodiagnostic method of emotional burnout Boyko V.V concerning the phase "Stress" among the average medical staff of psychiatric profile in women is the largest –  $41,3 \pm 22,2$  points compared to men –  $33,6 \pm 19,2$  points ( $p < 0,05$ ) while in the control group on the contrary in men  $39,0 \pm 23,3$  points, and in women  $34,8 \pm 23,4$  points ( $p < 0,05$ ).

In the phase of "Resistance," the highest degree had established in women of the average medical staff of a psychiatric profile –  $56,6 \pm 21,4$  points in comparison with men –  $40,5 \pm 16,6$  points ( $p < 0,05$ ), thus in the control group both among women and among men, indicators steel  $50,0 \pm 22,9$  points against  $50,4 \pm 22,9$  points ( $p < 0,05$ ).

In the phase of "Exhaustion," the highest rates had found in the experimental group among women of the secondary medical staff of psychiatric profile –  $41,5 \pm 21,4$  points against  $39,4 \pm 27,4$  points in men ( $p < 0,05$ ), while in the group of average medical personnel of a general medical profile, the indicators were lower and did not differ significantly between men and women (table II).

But among psychiatrists, high rates in the "stress" phase were  $40,1 \pm 24,7$  points for women doctors and  $38,5 \pm 22,8$  points for men ( $p > 0,05$ ). The highest rates of the following phases were lost in male physicians: the "Resistance" phase in male physicians –  $54,6 \pm 19,7$  points, and in female physicians –  $52,3 \pm 22,0$  points ( $p > 0,05$ ); phase of "Exhaustion" in male doctors –  $42,0 \pm 18,7$  points, and in female doctors –  $34,9 \pm 20,0$  points respectively ( $p > 0,05$ ); In comparison with doctors and nurses in all three phases of STIs, high rates were also found in women on paramedical nursing staff.

However, depending on the gender characteristics, the excess of female workers in all phases was determined: in the phrase "Stress" –  $41,3 \pm 19,2$  points against  $33,6 \pm 22,2$  points ( $p > 0,05$ ), "Resistance" –  $56,6 \pm 21,4$  points against  $40,5 \pm 16,6$  points ( $p > 0,05$ ), "Exhaustion" –  $41,5 \pm 21,4$  points against  $39,4 \pm 27,4$  points ( $p > 0,05$ ) respectively. Women are most vulnerable to deteriorating psychophysiological conditions and are prone to rapid transition from pre-morbid conditions (mild, moderate forms) to severe chronic psychosomatic or psychovegetative disorders, especially among women paramedics working in psychiatric institutions.

These data had confirmed by the method of the questionnaire "Professional burnout" (OT) according to the adaptation of Vodopyanova N. on emotional exhaustion (Table III).

Emotional exhaustion among women of the average medical staff of psychiatric profile was –  $20,3 \pm 8,3$  points in comparison with women of the average medical staff of the general profile of the CHC –  $19,3 \pm 8,4$  points ( $p > 0,05$ ). Among men, this figure was much higher. At men of the average medical staff of the general profile –  $20,6 \pm 9,9$  points against  $18,3 \pm 9,8$  points ( $p > 0,05$ ) accordingly.

**Table I.** Stages and symptoms of occupational and emotional burnout syndromes

Syndrome of professional burnout	Syndrome of emotional burnout
<p>Stages of SPB Development</p> <p>The first stage (easy form)</p> <p>The second phase (middle form)</p> <p>The third phase (severe form, chronic psychosomatic/psychovegetative disorders)</p>	<p>Stages of SEB Development</p> <p>The phase «alarm voltage» (harbingers)</p> <p>Phase «resistance» (resistance to increasing stress)</p> <p>Depletion phase</p>
<p>Symptoms</p> <p>psychophysical</p> <p>psychovegetative</p> <p>behavioral</p>	<p>Symptoms</p> <p>emotional deficit</p> <p>emotional alienation</p> <p>personal removal, or depersonalization</p>

**Table II.** Formation of emotional burnout syndrome (by phases of formation) in health care workers in Vinnytsia region, (M ± SD), points

Phases	Voltage phase «Alarm voltage»	Resistance Phase	Phase «Exhaustion»
<b>Medical staff</b>			
Average medical staff of a psychiatric institution, n = 137			
Men (n=9)	33,6±19,2	40,5±16,6	39,4±27,4
Women (n=128)	41,3±22,2*	56,6±21,4*	41,5±21,4*
The average medical staff of the general medical profile of health care institutions, n=101			
Men (n=23)	39,0±23,3	50,4±22,9	38,3±16,8
Women (n=78)	34,8±23,4*	50,0±22,9*	35,7±20,1*

Note.\* - the presence of statistically significant (p<0.05 and less) differences compared to the control group

**Table III.** Formation of emotional burnout syndrome according to the method of «Professional burnout» in health care workers in the Vinnytsia region, (M ± m)

Forms	Emotional Exhaustion	Depersonalization	Professional Success
<b>Medical staff</b>			
Paramedics of a psychiatric institution, n=137			
Men (n=9)	18,3±9,8	9,4±5,1	28,8±6,6
Women (n=128)	20,3±8,3*	12,0±5,0	25,6±8,3
The average medical staff of the general medical profile of health care institutions, n=101			
Men (n=23)	<b>20,6±9,9*</b>	<b>14,0±4,8</b>	<b>29,0±7,0</b>
Women (n=78)	19,3±8,4	11,6±4,5	27,5±7,4

Note.\* p <0.05 significance of changes in the cohort comparison group

“Depersonalization /Cynicism” is characterized by increased psychological distancing from work, decreased empathy and indifference/cynicism towards others/patients, and pessimistic views on work, which also affect the attitude to their own family. Depersonalization among women again gave high rates, it was noted in women of the secondary medical staff of psychiatric profile – 12,0±5,0 points against 11,6±4,5 points (p>0,05). Professional success was noted in medical staff of general medical profile in men – 29,0±7,0 points and women – 27,5±7,4 points (p>0,05).

According to the results of the method “Motivation of professional activity” by K. Zamfir in the modification of A. Rean allows determining the relevance of types of motivations as 1 – material reward; 2 – the desire for career growth; 3 – the desire not to be criticized by management and colleagues; 4 – the desire to avoid possible punishments or troubles; 5 – focus on prestige,

respect from others; 6 – satisfaction from a job well done; 7 – social utility of labor. After the survey, the following scale from 1 to 5 points was used: 1 point – “to a very small extent”; 2 points – “to a fairly small extent”; 3 points – “not big, but not small”; 4 points – “to a large extent”; 5 points – “to a very large extent.”

According to the analysis in Table IV, it had been found that male doctors and male SMP psychiatric institution external negative motivation exceeds external positive, which corresponds to the following motivational complex VM> ZPM <ZNM. Thus, in most health workers working in a psychiatric institution, we can observe a decrease in interest in work, a decrease in psychological well-being (lack of purpose in life, negative attitude towards others, lack of desire for career growth, lack of self-perception, indifference to work, etc.), which can negatively affect the quality of medical care and interpersonal relationships in the team and at home.

**Table IV.** Types of motivation of professional activity in medical workers of psychiatric health care facilities, the average value (points)

Motivation	Doctors		Paramedics (Experimental Group)		Paramedics (control group)	
	Men (n=25)	Women (n=62)	Men (n=9)	Women (n=128)	Men (n=23)	Women (n=78)
	M±SD	M±SD	M±SD	M±SD	M±SD	M±SD
Internal	3,9±0,9*	3,6±0,9	3,9±1,4	3,3±0,9	3,5±1,0	3,4±0,9
External positive	2,9±0,6	2,7±0,7	3,4±1,5*	2,8±0,9	3,4±0,9	2,9±0,8
External negative	3,2±0,8	2,7±1,0	3,2±1,8	3,0±1,3	3,6±1,0*	3,2±1,1

Note. \* - the presence of statistically significant ( $p < 0.05$  and less) differences compared to the control group

**Table V.** Social benefits – «Cafeteria», which are using by health workers of the HCF on the principle of choosing «Menu» (compiled by the authors)

«Menu №1»	«Menu №2»	«Menu №3»
Payment for food	Payment for gasoline of UAH 500	Payment for training and advanced training
Fare for work	Mobile payment	Payment for travel on public transport
Vacation for a child (in a summer camp or sanatorium)	Vacation for yourself	Vacation for yourself
Payment for a company car	Medical Insurance	Medical Insurance

According to Table IV, women doctors have a motivational complex  $VM > ZPM = ZNM$ , which indicates a desire for career growth and the need to receive financial incentives, but they are uncomfortable receiving criticism from management.

According to our research, the highest score was the internal motivation of all health workers in the Vinnytsia region, which was expressed in understanding the usefulness of their work and the desire to engage and improve their professionalism (Table IV).

Another motivational complex is found in men-SMP, who have been working in a psychiatric institution for  $7,8 \pm 7,5$  years and  $VM > ZPM > ZNM$ , which emphasizes the predominance of understanding the usefulness of their work, desire to engage and improve their professionalism and strive for punishment growth and for this to receive material rewards, bonuses. They are not afraid to be criticized for their work. In-that is the best motivational complex. The shorter the work experience, the greater the internal positive motivation, the greater the circumstances, and the greater the internal negative motivation and signs of emotional burnout.

Types of motivation (Fig. 1), which we propose to use in the state or municipal CHCs of Ukraine, both tangible and intangible interests of health workers to create an effective motivational mechanism are given in Fig.1.

## DISCUSSION

One of the most popular measures of the management system in the EU today is social motivation, the purpose of which is to provide a social package. The social package in the EU countries has the following components: health, work motivation, education, training, social support, recreation, and entertainment. Abroad, the main

cost of the social package is up to 50% for various types of insurance, but the main one is health insurance. In Ukraine, the spread of the social collection is typical only for employees of large domestic companies, which are developing rapidly and want to enter the international markets of European countries, and which adhere to the civilized principles of social responsibility for their employees [10].

European medical institutions use a system of motivation such as a "cafeteria" for various types of social benefits, the so-called "menu". This system allows medical staff to independently (with the consent of the head of the HCF) choose the type of compensation for different classes: "Menu №1", "Menu №2", "Menu №3", which will be sufficiently motivated and ready to perform their work (Table V).

The practice of many domestic medical CHPs has shown the imperfection of the motivational mechanism if it does not complement the material incentives or moral (intangible). Optimization of intangible motivation on a corporate basis will facilitate and accelerate the process of implementing effective incentives for their work, as well as increase the likelihood of achieving successful results in the world [11,12].

The introduction of high-quality corporate relations to improve the quality of service will be the basis for the sustainable development of treatment facilities. Therefore, to increase the motivation of professional activity of health professionals as a factor in maintaining their health, the following measures are proposed: to develop and implement various trainings, educational programs, refresher courses to motivate communication in the team; to consider the possibility of exchanging experience in improving the microclimate in the group with other medical HCFs of Ukraine and HCFs of foreign

countries; to introduce the hazard of communication of medical workers in an informal environment (office of psychological relief, participation in sports, cultural events, tourist trips); based on the experience of foreign medical institutions to create self-governing groups (organizations) for independent decision-making on any issues related to the planning of their work and the effective functioning of the medical institution; development of self-government of HCFs with a multi-channel system of their financing, which are not prohibited by law (formation of salaries, bonuses, social benefits on the basis of "cafeteria") and adoption (at the local government level) of regulations on intangible and material motivation of professionals local HCFs [13,14].

Thus, the above areas of optimization of motivation and stimulation of health care workers by analogy with European standards are aiming at improving their productivity, career growth, professional development, recognition and approval of colleagues, and management of their professional results, as well as prevention of occupational diseases [15].

Reforming and multifaceted health care economy and multi-channel financing, combining state guarantees with demonopolization and competition; decentralization of public administration, development of self-government of institutions, and independence of health care workers (activities on a contractual basis), provided by the Basic Law of Ukraine, "Fundamentals of Health Care Legislation", and the need to implement European standards of motivation based on changes in psychological state. The implementation of intangible and material motivation measures will increase the level of medical services, prevention of occupational diseases of health workers, and thus preserve and strengthen the health of the population and the implementation of the cooperation agreement between Ukraine and the European Union (Association Agreement Chap-

ter 22, "On Public Health", articles № 426, № 427) and gradual integration of Ukraine into European health care networks.

## CONCLUSIONS

1. Predictors of the development of emotional burnout are clearly observed in nurses who work in psychiatric institutions: "Stress" – 41,3±19,2 points against 33,6±22,2 points ( $p>0,05$ ), "Resistance" – 56,6±21,4 points against 40,5±16,6 ( $p<0,05$ ), "Exhaustion" – 41,5±21,4 points against 39,4±27,4 points ( $p>0,05$ ) compared to men who may be at risk of transition from a pre-morbid condition, moderate form of STD) in severe chronic psychosomatic or psychovegetative disorders.
2. The motivational component of CHP staff found that external negative motivation exceeds external positive motivation of CHP medical staff, both male and female doctors from 3,2±0,8 points to 2,7±1,0 points, and in the average medical staff psychiatric profile in men 3,2±1,8 points and 3,0±1,3 points and the average medical staff in general profile 3,6±1,0 points and 3,2±1,1 points, respectively, which reflects negative attitude of the medical staff at the present stage to the implementation of professional activities.
3. The less experience (7,8±7,5 years,) the motivational component is as follows (VM>ZPM>ZNM) and has a greater understanding of the usefulness of their work, the desire to engage in and improve their professionalism and strive for career growth and for this to receive material rewards, bonuses.
4. To prevent severe forms of chronic psychosomatic or psychovegetative disorders and low motivational components, it is necessary to constantly monitor medical teams to identify and put a stop to the causes of the formation and conduct preventive measures to minimize them.

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#### **Conflict of interest:**

*The Authors declare no conflict of interest.*

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