ORIGINAL ARTICLE

CONTENTS

Characteristics of the mental health of employees of healthcare facilities in the conditions of war

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ABSTRACT

Aim: To study the state of mental health of staff of healthcare facilities (HCFs) of different categories (managers, doctors, nurses) 2 years after the beginning of the Russian invasion of Ukraine.

Materials and Methods: The study, using valid psycho-diagnostic methods, was conducted in 3 stages: studying the frequency of mental states, Mental Health Continuum, and occupational self-efficacy. Using descriptive and analytical statistics, we analyzed the results obtained from 114 respondents.

Results: It was found that in the majority of the study group, regardless of the position held (manager, doctor, nurse), the levels of anxiety, frustration, aggressiveness, and rigidity were low (64.0%-50.9% of respondents); flourishing and high development of occupational self-efficacy were recorded in 59.6% and 61.0%, staff of HCFs respectively. A small proportion of specialists (10.5%-4.4%) revealed a high level of manifestation of mental states; languishing and a low level of professional self-efficacy were practically absent. In other study participants, all indicators were at the borderline level.

Conclusions: Almost 2 years of functioning in the context of the war has led to the development of a certain adaptation and resilience in all categories of healthcare employees, which allows them to fulfill their professional duties. At the same time, there is a significant number of healthcare professionals who have moderate and high levels of mental stress, and problems with mental health stability, which requires systemic decisions to be made at the sectoral level to ensure the mental health of staff of healthcare facilities.

KEY WORDS: mental health, healthcare facilities, Russian-Ukrainian war

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INTRODUCTION

The global experience of the psychological consequences of war shows that military events are a significant threat to the deterioration of the population's mental health. [1]. After the outbreak of the full-scale Russian-Ukrainian war, the situation with mental health in the country deteriorated sharply, due to several factors: a sense of danger to themselves and their families as a result of constant shelling of the country's territory; migration to other regions or countries and related material and domestic problems [2].

According to the Minister of Health, the demand for psychological assistance in Ukraine in 2023 almost doubled compared to the previous year [3]. Ukrainian and international researchers call the condition of mental health of refugees who left Ukraine en masse as a result of the Russian invasion of Ukraine, catastrophic [4].

The materials of the All-Ukrainian study of the mental health of the population, conducted by the Gradus research company in September 2022, testify to the prevalence of several negative mental states among Ukrainians during the full-scale war [5].

Medical staff, who play a significant role in addressing both mental and general health issues in wartime, experience a double mental burden due to similar circumstances and systematic contact with victims in need of assistance. There is evidence that healthcare workers who constantly deal with patients who have suffered various kinds of losses as a result of war suffer from symptoms of depression, anxiety, and stress [6].

In Ukraine, research on mental health staff of healthcare facilities (HCF) is practically absent.

AIM

To study the state of mental health of staff of healthcare facilities of different categories (managers, doctors, nurses) 2 years after the beginning of the Russian invasion of Ukraine.

MATERIALS AND METHODS

Mental health was studied using a set of standardized methods professionally adapted to the Ukrainian context by the H.S. Kostiuk Institute of Psychology of the National Academy of Pedagogical Sciences of Ukraine: «Self-assessment of anxiety, frustration, aggression, and

rigidity»; «The mental health continuum - short form» «Short occupational self-efficacy scale» [7].

The cross-sectional study was conducted in January 2024. A total of 114 employees of 16 HCFs (primary health care centers, general and specialized hospitals) in the Dnipropetrovsk oblast were involved, of whom managers made up 17.5% (20.5; 24.5), doctors - 55.3% (46.2; 64.4), nurses - 27.2% (19.0; 35.4); average length of service - M±SD=20.5±12.2 years. Out of the total number of respondents, 26.3% (18.2; 34.4) were men, 73.7% (65.6; 81.8) were women; the average age of the respondents was 47.3±12.3 years; 72.8% (64.6; 81.0) had higher and 27.2% (19.0; 35.4) had secondary education. Of all respondents, 93.5% (89.0; 98.0) reported that some of their patients were victims (both civilian and military) as a result of military conflict, and the remaining 6.5% (2.0; 11,0) stated that such patients constitute the majority.

Statistical processing of the results was carried out using the software program STATISTICA 6.1 (StatSoftInc., serial number AGAR909E415822FA) and Excel-2010 using methods of parametric and non-parametric statistics. For relative values, 95.0% confidence intervals (95% CI) were calculated based on the corrected Wald method. The assessment of the validity of the differences in relative indices was carried out according to Pearson's Chi-square test (Chi-square test – $\chi 2$). The critical value of the level of statistical significance was accepted at the level of $p<0.05$ (5%).

Compliance with the principles of bioethics and medical deontology was confirmed in the conclusion of the biomedical ethics commission of the Dnipro State Medical University (protocol No. 16 of February 21, 2024).

RESULTS

The study of the mental health of HCF employees was conducted in 3 stages. At the first stage, the frequency of various mental states (anxiety, frustration, aggression, rigidity) was studied using the "Self-Assessment of Mental States" methodology.

It was found that in general, in the study group, the levels of anxiety and frustration were low in almost 2/3 of the respondents (63.2%, 95% CI 54.3-72.1 and 64.0%, 95% CI 55.2-72.8, respectively) (Fig. 1).

More than a quarter of the respondents (26.3%, 95% CI 18.2-34.4 and 31.6%, 95% CI 22.8-40.4) had medium levels of anxiety and frustration, meaning that their actions can be influenced by circumstances and emotions. A small proportion of respondents (10.5%, 95% CI 4.9-16.1 and 4.4% 95% CI 0.6-8.2, respectively) had high levels of both mental states.

Among the various symptoms characterizing these mental states, the most prevalent, not related to level characteristics, were: anxiety symptoms such as restless sleep (47.4%; 95% CI 38.2-56.6); and signs of frustration, described as «troubles make me very upset" - 54.4% (95% CI 45.3-63.5) and periodic despair - 31.6% (95% CI 23.1-40.1).

According to the aggressiveness scale, more than half of the respondents (54.4 %; 95%CI 45.3-63.5) had a low level of this mental state, and 39.5% (95%CI 30.5-48.5) had an average level of aggressiveness. Only 6.1% (95%CI 2.1-10.1) of respondents had a high level of aggression (see Fig. 1). In the total number of study participants, the most common symptoms characterizing aggression were: «I am easily angered» - 35.1% (95% CI 26.3-43.9); «I have the last word» - 32.5% (95% CI 23.9-41.1); «I am not satisfied with little, I want much more» - 50.9% (95% CI 41.7-60.1).

The results of the study of rigidity show that 50.9% (95% CI 41.7-60.1) of respondents have a low level of this mental state; 44.7% (95% CI 35.6-53.8) of respondents have an average level of rigidity; only 4.4% (95% CI 0.6-8.2) of the study group have severe rigidity.

Among the respondents, the most common signs of rigidity were: difficulty changing habits - 40.4% (95% CI 31.4-49.4) of respondents; intrusive thoughts - 37.7% (95% CI 28.8-46.6); lack of desire to take any risk - 49.1% (95% CI 39.9-58.3); and wariness of everything new - 31.6% (95% CI 23.1-40.1).

The correlation analysis revealed a weak connection between: anxiety and the position ($rs = 0.20$; $p=0.03$), i.e. a slight increase in anxiety along the trajectory of manager - doctor - nurse; frustration and gender ($rs = 0.20$; $p=0.03$) - women are slightly more frustrated than men; aggression and age ($rs = 0.19$; $p=0.03$) - in older age groups, the level of aggression increases slightly; rigidity and education ($rs = 0.22$; $p=0.04$) - people with higher education have less rigidity compared to average medical staff.

When analyzing the levels of manifestation of mental conditions in HCF employees working in different positions, the following trends were found in managers compared to doctors and, in turn, in doctors compared to nurses: 1) to a higher frequency of low anxiety; 2) to a lower frequency of low aggressiveness, which may be due to the peculiarities of the work of managers, which consist in the need to keep their feelings under control and be an authority for subordinates for successful management. However, there were no significant differences in the levels of manifestation of any of the analyzed mental states between the groups of employees (Table 1).

The second stage of the study examined the Mental Health Continuum of HCF employees. The overall level for the entire sample was 49.5±10.3 (M±SD) points on a

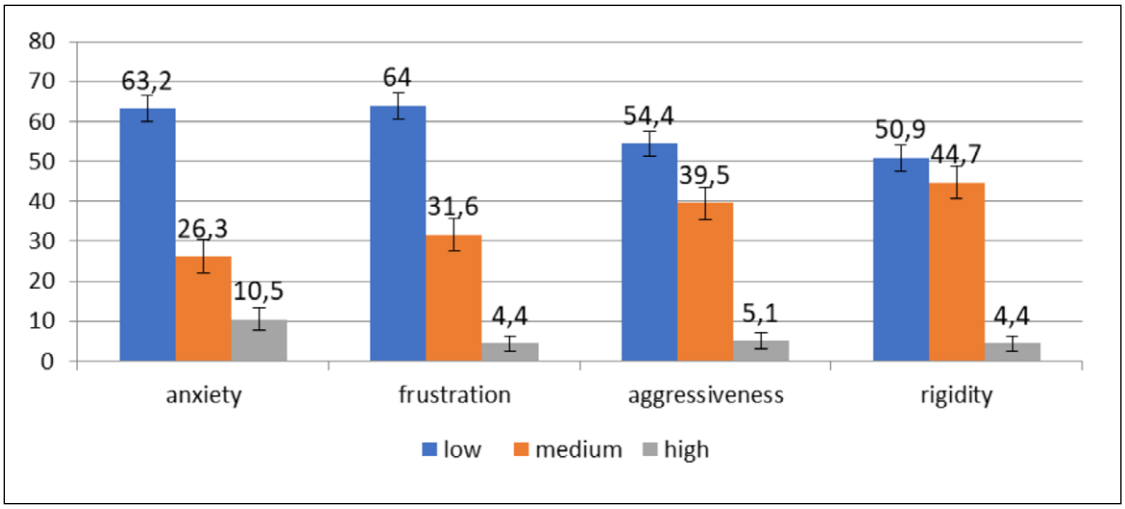

Fig. 1. Distribution of levels of manifestation of mental conditions in healthcare employees, in %.

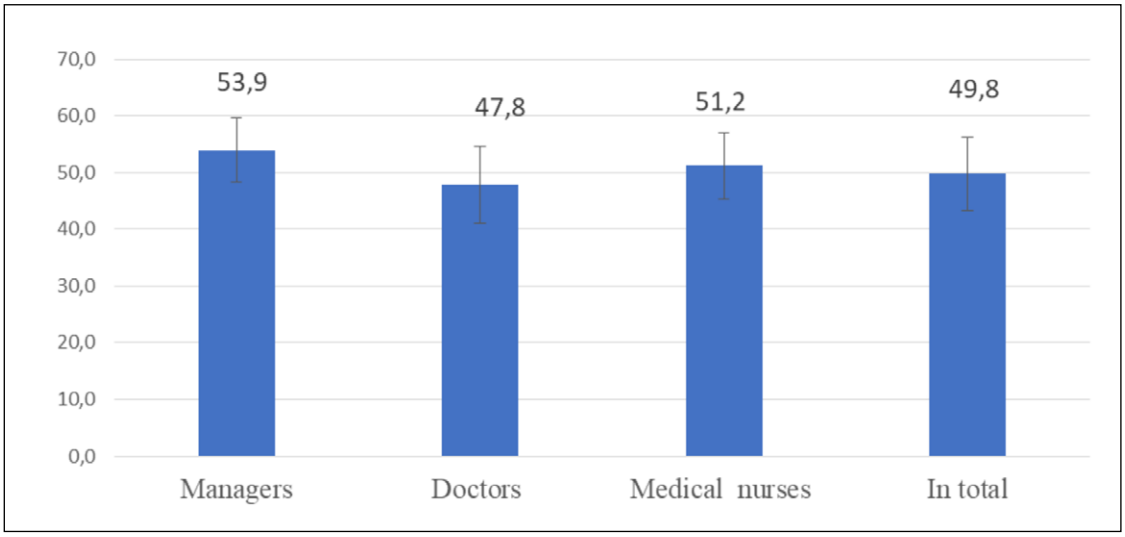

Fig. 2. Mental Health Continuum in different groups of HCF employees (scores).

70-point scale, which corresponds to the average level of this indicator. No significant differences were found between the groups of subjects (Fig. 2),

The in-depth examination of the Mental Health Continuum is based on the Mental Health Status categories, which integrate the characteristics of the subjective, social, and psychological well-being of staff. This analysis results in 3 categories: Flourishing - high level of well-being, Moderately Mentally Healthy, and Languishing or low level of well-being [7].

When analyzing the levels of mental health of HCF employees by Mental Health Status categories, it was found (Table 2) that 59.6% (95% CI 50.6-68.6) of the study participants have a harmonious level of well-being – Flourishing; 38.6% (95% CI 29.7-47.5) - Moderately Mentally Healthy, and 1.8% (95% CI -0.6-4.8) - Languishing. No significant differences were found between the groups, although there is a certain tendency to a higher level of well-being of HCF management staff. There was no association Mental Health Continuum with age, gender, education, or length of service.

At the same time, several statements indicating social disadvantage in certain positions are quite common, including doubts about their ability to make an important contribution to society (22.8%, 95% CI 15.0-30.6); about the ability of society to become better for HCF workers (48.2%, 95% CI 39.0-57.4). Symptoms of psychological distress are much less common: from the maximum value of 16.7% (95% CI 9.8-23.6) of respondents who are not satisfied with themselves as a person to 4.4% (95% CI 0.6-8.2) of respondents who do not see the purpose and meaning of life.

In the third stage, we studied occupational self-efficacy, the level of development of which on average among the staff of healthcare organizations was Me (25%;75%)=28.0 (25.0;31.0); no significant differences were found between the groups of managers, doctors and nurses ($p>0.05$). According to the levels of occupational self-efficacy development, the respondents were

Table 1. Distribution of levels of manifestation of mental conditions among HCF employees working in different positions, in %

Level	Managers of HCF n=20	Doctors n=63	Medical nurses n=31	p between groups
Anxiety				
Low	80,0 (62,5-97,5)	65,1 (53,3-76,9)	48,4 (30,8-66,0)	p>0,05
Medium	10,0 (-3,1-19,4	25,4 (14,6-36,2)	38,7 (21,6-55,9)	
High	10,0 (-3,1-19,4)	9,5 (2,3-16,7)	12,9 (1,5-24,3)	
Frustration				
Low	65,0 (44,1-85,9)	65,1 (53,3-76,9)	61,3 (44,2-78,5)	p>0,05
Medium	35,0 (14,1-55,9)	30,2 (19,5-42,7)	32,3 (15,8-48,8)	
High	0	4,8 (-0,5-10,3)	6,5 (-2,2-15,2)	
Aggressiveness				
Low	45,0 (23,2-66,8)	50,8 (38,4-63,2)	67,7 (51,2-84,2)	p>0,05
Medium	50,0 (28,1-71,9)	39,7 (27,6-51,8)	32,3 (15,8-48,8)	
High	5,0 (-4,6-14,6)	9,5 (2,3-16,7)		
Rigidity				
Low	55,0 (33,2-76,8)	42,9 (30,2-55,0)	64,5 (47,7-81,3)	p>0,05
Medium	45,0 (23,2-66,8)	49,2 (36,7-61,8)	35,5 (27,5-52,3)	
High	0	7,9 (1,3-15,1)	0	

Table 2. Mental Health Continuum in different groups of HCF employees by category (%)

Position	Mental Health Status		
	Flourishing	Moderately Mentally Healthy	Languishing
Managers	70,0 (49,9-90,1)	30,0 (9,9-50,1)	0,0
Doctors	57,1 (44,9-69,3)	39,7 (27,6-51,8)	3,2 (-1,2-7,6)
Medical nurses	58,1 (40,7-75,5)	41,9 (24,5-59,3)	0,0
All employees	59,6 (50,6-68,6)	38,6 (29,7-47,5)	1,8 (-0,6-4,8)

Notes. Level of intergroup differences p>0.05.

distributed as follows: 61% (52;70) of HCF staff had a high level of occupational self-efficacy; 38% (29;47) - an average, and 1 % (-0,8;2,8) - a low level.

DISCUSSION

Conducted using valid methods of studying mental health in employees HCF. The results of the study show that the vast majority of the study group (64.0%-50.9% of respondents), regardless of their position (manager, doctor, nurse), had low levels of anxiety, frustration, aggression, and rigidity. That is, these professionals are characterized by balance, the ability to bring things to a logical conclusion; they are resistant to failure, able to perform complex tasks in any conditions, and can easily switch from one attitude to another. More than ¼ of the

respondents have intermediate (average), and a small proportion of professionals (10.5%-4.4%) have high levels of relevant mental states. The latter is characterized by feelings of tension, nervousness or inability to relax, easy excitability, difficulties in relationships with people, as well as low self-esteem, a tendency to avoid difficulties in difficult situations, difficulty adapting to new conditions, which in general can be a significant obstacle to effective professional functioning [8].

When comparing individual symptoms of various mental conditions identified in HCF employees in our study and in the general population, obtained within the framework of the All-Ukrainian Mental Health Survey [5], despite the differences in methodological approaches, it was found that several signs in both groups occurred with almost the same frequency: Restless sleep in 47.4% of employees HCF and 41% of the population, intrusive negative thoughts - 37.7% and 35.0%; irritation - 35.1% and 38%; emotional instability - 31.6% and 29.6%, respectively. At the same time, such characteristics as indifference or apathy and pessimistic views of reality as a sign of depression were significantly less common among HCF workers than among the general population (15% vs. 35% and 11.4% vs. 24%, respectively), which is evidence of the faster formation of protective and adaptive mechanisms in people performing responsible work that allow them to adequately accept the challenges of war - Resilience, which is confirmed by the results of other studies [9].

This thesis is supported by the data obtained on the prevalence of HCF employees' Flourishing and high levels of development of self-efficacy occupational and the practical absence of Languishing and low occupational self-efficacy. It should be emphasized that high professional self-efficacy means that the personnel of medical organizations, even in the conditions of war and certain psychological stress associated with it, believe in their ability to successfully perform tasks related to professional activity [1]. At the same time, it is alarming that about 40% of respondents were characterized as Moderately Mentally Healthy and had borderline characteristics of the development of occupational self-efficacy.

The findings of a large international study «Insights in Public Mental Health» demonstrate the need for comprehensive, evidence-based measures to protect the mental health and well-being of healthcare workers so that they can properly perform their important work to maintain public health [10]. At the same time, psychodiagnostics is an important step in maintaining their mental health and, if necessary, restoring it [11].

Our study has several limitations, including the following:

1) Since the study was conducted as a cross-sectional study, it is impossible to assess the dynamics of mental health indicators of HCF employees during the war.
2) It is difficult to predict how long-term the adaptation of HCF staff will be and what consequences of chronic overstrain can be expected in the future.

CONCLUSIONS

The prolonged operation in the context of the Russian-Ukrainian war for almost 2 years has led in almost all categories of HCF employees to the development of certain adaptations, such as the ability to adjust to changing situations and expectations; and resilience, as the ability to overcome difficulties, which allows them to fulfill their professional duties.

At the same time, there is a significant number of healthcare facilities professionals who have a moderate to high degree of mental stress or its symptoms; and problems with mental health stability, which requires systemic decisions to be made at the sectoral level to ensure the mental health of healthcare facilities staff, on which both the mental and physical health of the population to some extent depends.

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CONFLICT OF INTEREST

The Authors declare no conflict of interest

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