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# The Experienced Level of Stress and Anxiety in Patients of a Multidisciplinary Medical Center

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**BACKGROUND** At the present stage of development of medicine, the delivery of psychological assistance is an important component of a systemic biopsychosocial approach. Patients and persons accompanying them undoubtedly experience anxiety during hospitalization due to the fact that the very appeal to the hospital and the preceding events are stressful. In turn, many previous studies show that stress can have both mobilizing (eustress) and negative effects (distress) on the emotional state and adaptive processes of a person.

The objective of this study is to study the level of stress and anxiety in patients (n=83) at the time of hospitalization and hospital stay. The study was conducted using three self-reporting scales (the Distress Thermometer, A. Beck Anxiety Inventory, and Hospital Anxiety and Depression Scale (HADS).

The results of the study showed that most patients (58%) experienced an increased level of distress. Distress was most often accompanied by the following emotional reactions: anxiety (51%), fear (25%), sadness (21%), and loneliness (21%). The study of emotional state showed that 22% of respondents had a high level of anxiety (according to HADS), and 5% had clinically significant symptoms of anxiety (according to Beck Inventory). Symptoms of depression are less common. In the group of patients with a significant level of distress, a greater number of patients noted high rates of hospital anxiety and depression. In addition, the authors investigated the emotional state of patients after psychological assistance received in the hospital. The results show that the level of distress was almost twice reduced.

A pilot study of a group of patients being treated in the clinical departments of an emergency hospital allows us to draw a preliminary conclusion about the positive effect of the course of psychocorrective classes on the patient's emotional state and the level of distress experienced, i.e. helps the patient resolve certain internal conflicts associated with a sudden change in life, calm down and positively set oneself up for treatment.

**Keywords:** psychological stress, distress, hospitalization, anxiety, depression, emotional reactions

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## INTRODUCTION

At the present stage of the development of medicine, medical care is provided on the basis of a systematic biopsychosocial approach, that is, the organization of care in regions and specific medical institutions (social factors) involves taking into account both somatic aspects of health (biological factors) and psychological factors. A high level of stress and, as a result, affective disturbances not only reduce the patient's quality of life, but can significantly complicate the patient's recovery process [1]. Therefore, psychological assistance is one of the important aspects of the provision of medical care at the time of hospitalization and hospital stay [2]. Most of the patients and accompanying persons experience severe anxiety caused by the illness and subsequent hospitalization, as well as the high level of uncertainty in the initial stage of the patient's stay in a medical facility during the initial survey and setting diagnosis [3]. Events preceding hospitalization (accidents, sudden aggravation or the first acute attack of the disease) may be traumatic as well and have an additional negative impact on the course of treatment of the patient. It is worth noting that, as patients stay at the stage of initial diagnosis, many of them note an increase in stress level, which is accompanied by various psychological (anxiety, negative predictions and obsessive mental return to experienced unpleasant events) and physiological (heart palpitations, sweating, weakness and dizziness) symptoms. Many patients consider staying in the hospital, worrying about their state of health, and the need for medical interventions to be the main causes of stress [4, 5].

Another factor of stress may be professional burnout and a lack of psychological training in the education of doctors [6]. At the same time, the importance of effective communication between the patient and the staff of the medical institution is noted, without which the level of stress increases [7–11].

Currently, there are many studies describing the negative effects of stress on the patient's somatic health. Stress is considered as a multidimensional process of interaction between the individual and the situation, as well as the reaction of the individual to this situation [12]. The stress reaction is adequate and normal for a person, however, in certain situations, stress can become a trauma when the result of the stressor is a mental disorder, similar to physical disorders [13]. In this case, the emotional state and cognitive functions are violated, which, in turn, negatively affects the process of recovery, adaptation of a person to new living conditions, including the situation associated with hospitalization. So, it is proved that frustrating events in everyday life have a bad effect on well-being and are felt as threatening, offensive events associated with losses [14]. Increased mobilization of internal resources in stressful situations, their overstrain can lead to failures in the processes of psychological adaptation and, as a result, mental and somatic health disorders [15]. The effect of stress on the deterioration of physical condition has been repeatedly proven due to the manifestation of negative affective states (anxiety, depression), which affect biological processes and behavioral patterns, the process of illness and treatment [16, 17].

However, the hospitalization situation as a stress factor has not yet been adequately studied, which makes it difficult to develop measures to improve the psychological state of patients entering the admission department and being treated in clinical departments. Meanwhile, the type of coping with this kind of stress can affect the entire treatment process, determining the pessimistic or conversely constructive attitudes of patients in relation to treatment, as well as their internal picture of the disease as a whole, as a major factor in adapting to treatment [18]. Researchers in the field of clinical psychology and health care psychology have relatively recently identified this problem in order to further study it [19].

The stress level of patients during diagnosis and treatment in hospital departments is an important aspect of adaptation and prevention of emotional disturbances up to the onset of clinical forms of depressive and anxiety disorders [20]. The development of skills to effectively overcome stressful situations has a positive effect on the emotional state of the patient, his/her interaction with the doctor and adherence to treatment [13, 21]. It is important to take into account the individual experience and personality characteristics of patients, their mental state, the type of cognitive processes, as well as developed strategies for coping with stress [22, 23].

The employees of the psychological service of the N.V. Sklifosovsky Research Institute for Emergency Medicine performed a pilot study of a group of patients and their relatives in a multidisciplinary hospital institute.

**Aim of study:** to identify the level of stress and anxiety in patients at the moment of hospitalization and hospital stay.

#### **MATERIAL AND METHODS**

The study involved 83 patients at the diagnostic stage in the admission or clinical departments: emergency ( $n=15$ ), toxicological ( $n=15$ ), traumatological ( $n=12$ ), surgical ( $n=12$ ), cardiological ( $n=9$ ), neurosurgical ( $n=9$ ), psychosomatic ( $n=6$ ), burn ( $n=2$ ), neurological ( $n=2$ ) and resuscitation ( $n=2$ ). The psychologist offered assistance to 8% of patients, 10% of the respondents referred to a psychologist on their own, the rest of the patients (82%) were assigned a consultation by the attending physician. By the same set of techniques, after a series of psychocorrectional sessions, 19 people from the sample were examined during their stay in the hospital. The number of sessions depended on the severity of the patient's condition and the duration of stay in the hospital and ranged from 3 to 10.

To assess the emotional state of patients, the hospital anxiety and depression scale *HADS* (*The hospital Anxiety and Depression Scale*, A.S. Zigmond, R.P. Snaith) was used. This scale is a screening tool consisting of 14 statements serving 2 subscales: anxiety and depression. The scale allows you to identify and evaluate the severity of depression and anxiety in general medical practice. The advantages of this scale are the simplicity of application and processing (filling the scale does not require a long time and does not cause difficulties for the patient), which allows recommending it for use in somatic practice for the primary detection of anxiety and depression in patients [24]; A. Beck's Anxiety Scale, which consists of 21 points, each of which includes one of the typical symptoms of anxiety: somatic or mental. This scale allows the severity of anxiety symptoms to be assessed [13].

The Distress Thermometer developed by a J. Holland which is a screening tool for assessing emotional discomfort and identifying major areas contributing to distress, was used. The instruction offers a patient to assess the level of the test de stress on a 10-point scale, where 0 indicates complete lack of it, and 10 is its highest level. The subject is also offered to note in the list of experiences those of items that he experiences due to being in a medical institution [25]. It is important to note that stress itself can have both a negative and destructive effect on the body — distress, and a mobilizing and activating effect — eustress. Due to the fact that this study is aimed at studying the negative effects of stress, further we will use the concept of distress.

The article provides descriptive statistics aimed at studying the incidence of distress, anxiety and depression symptoms in patients undergoing examination and treatment in a hospital. Partial data processing was carried out using the statistical package *IBM SPSS Statistics* 23.0. To study the relation between indicators of distress, anxiety and depression, the Spearman non-parametric rank correlation method was used. The study of differences in the emotional state of patients before and after psychocorrectional measures was carried out using the nonparametric Wilcoxon test.

#### **RESULTS AND DISCUSSION**

Most patients experienced an increased level of distress (26% — high and 36% — medium). In addition to a general assessment of the level of distress on a scale of 1 to 10, patients were asked to note which types of experiences they observe during their stay in a medical institution. It is important to note that within this scale, 4 or more points are considered elevated indicators (despite the fact that indicators of 8-10 points indicate a very high distress).

Distress was most often accompanied by the following emotional reactions: anxiety (51%), fear (25%), sadness (21%), and loneliness (21%) (Fig. 1).

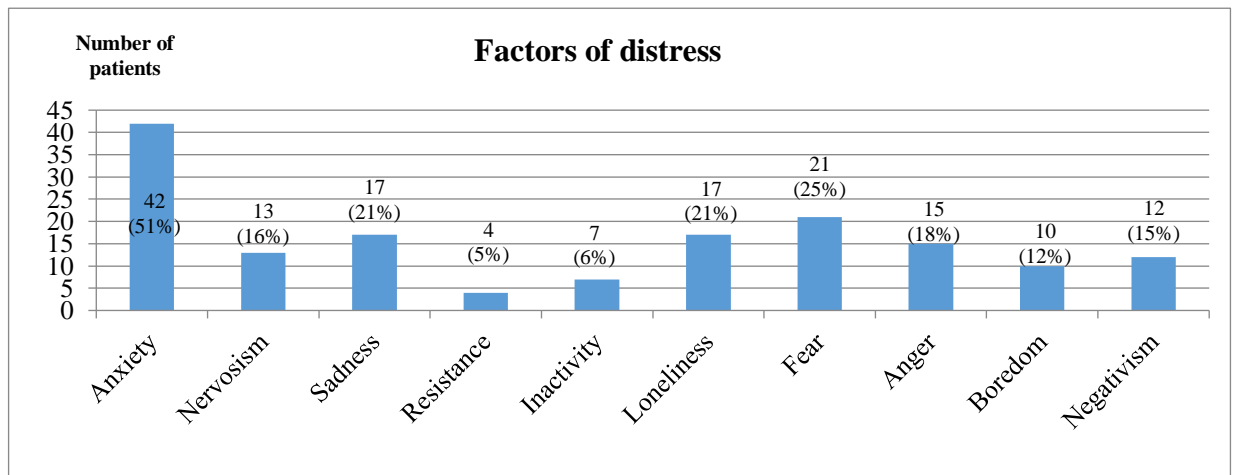


Fig. 1. Distress factors in examined patients (n=83)

Despite the fact that a rather large number of patients noted an increased level of distress, clinically expressed symptoms of anxiety and depression were present in only in some patients. It is worth noting that 22% of respondents had a high level of anxiety (according to the *HADS* questionnaire), and 5% had clinically pronounced symptoms of anxiety (the Beck Anxiety Scale) (on this scale, low anxiety was observed among respondents who scored up to 21 points, subclinical (average) level — 22–35 points, and clinical — 35 points or more). Symptoms of depression are less common (Table 1).

Table 1

The severity of symptoms of anxiety and depression in examined patients (n=83)

The severity of symptoms of anxiety and depression	Scales of anxiety and depression		
	A. Beck Inventory	HADS Anxiety Scale	HADS Depression Scale
Mild	67 (81%)	55 (66%)	69 (83%)
Moderate	12 (14%)	10 (12%)	6 (7%)
Severe	4 (5%)	18 (22%)	8 (10%)

During the correlation analysis of distress indicators with the severity of symptoms of anxiety and depression (the number of points on the scales), statistically significant positive relationships were obtained among the levels of distress, anxiety ( $r = 0.290$ ;  $p < 0.01$ ,  $n = 83$ ) and depression ( $r = 0.200$ ;  $p < 0.05$ ;  $n = 83$ ) on the *HADS* scale. However, since the binding strength we obtained turned out to be weak, this result needs additional verification in the process of further studies with an extended sample.

Options for combining the severity of the level of distress with the presence of clinical symptoms of anxiety and depression are given below. With an increase in the level of distress, accordingly, the number of patients experiencing a high level of hospital anxiety and hospital depression grows (Fig. 2, 3). To interpret the results of the *HADS* questionnaire, it is necessary to summarize each subscale (anxiety and depression) separately. The total points for each under the scale says as follows: 0-7 points describe low hospital anxiety (depression), 8-10 points on average (subclinical) level of 11 or more points - the high (clinical) level of the studied parameters.

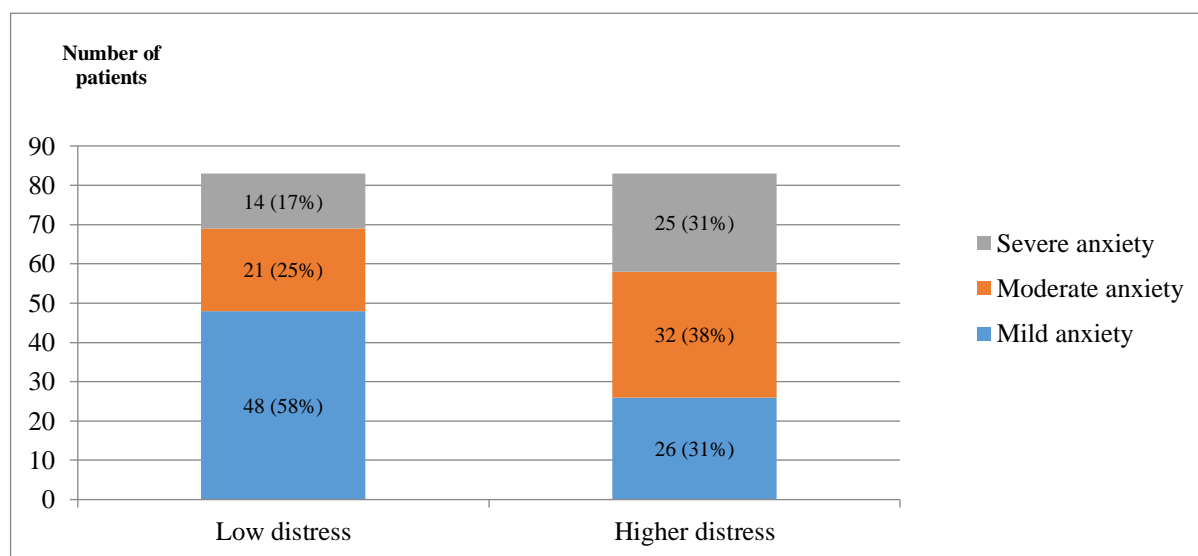


Fig. 2. The number of patients with varying severity of anxiety according to HADS depending on the level of experienced distress (n=83)

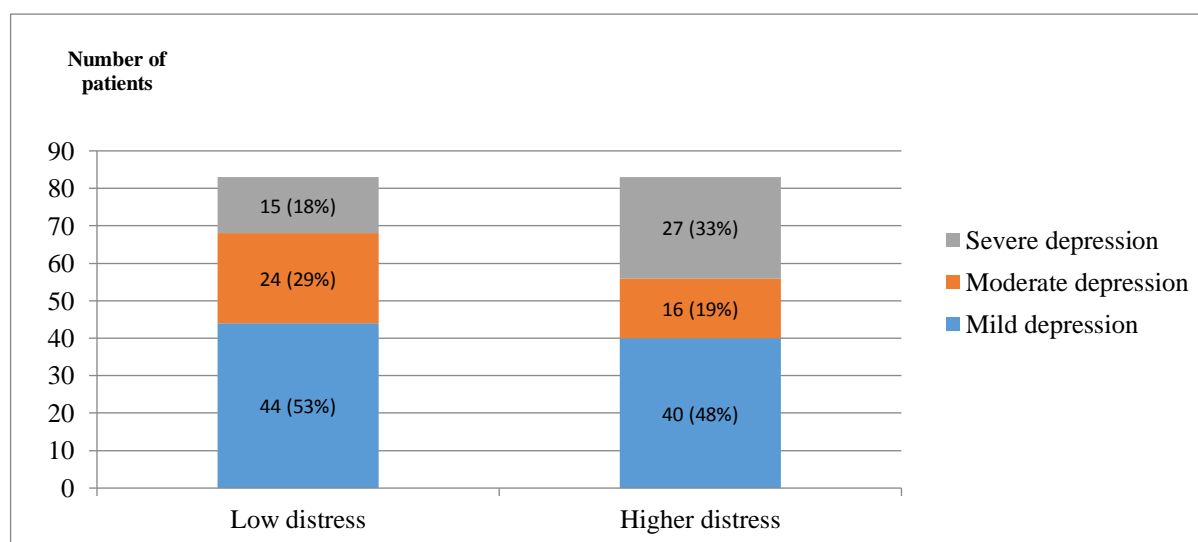


Fig. 3. The number of patients with varying severity of symptoms of depression according to HADS depending on the level of experienced distress (n=83)

Nevertheless, a group of patients with an increased level of distress and the absence of clinically pronounced symptoms of hospital anxiety and hospital depression was revealed, which can indicate different emotional reactions to distress in different patients. Since self-reporting methods were used in the study, this can be either a consequence of an adequate human response to a hospitalization situation in the form of resource mobilization, or a consequence of denial or alexithymia mechanisms, i.e. inability to recognize one's emotions and their subsequent somatization in the form of autonomic symptoms of distress. In the latter case, patients may take the vegetative symptoms of anxiety and depression as evidence of deterioration of their somatic state and a threat to health, despite objective medical indicators. Such patients, as a rule, become "difficult" for others, both relatives and doctors, as they often make various unreasonable somatic complaints. The probability of patients independently seeking this kind of help is not high, but the risk of anxiety disorders (for example, panic attacks), as well as depressive states in somatic patients with alexithymia, is quite high [26]. This reciprocal relationship of psychological and somatic symptoms of anxiety has been described as one of the laws of emotional life [27, 28]. This makes psychological diagnostics, the work of the on-duty psychologist and the attentive attitude of doctors to the emotional background of patients in the reception, clinical and resuscitation departments especially important. However, as a rule, a high level of distress is accompanied by an increase in the level of anxiety and depressive symptoms in patients, which is a reliable indicator of the risk of maladaptation and indicates the need for psychological assistance.

With a high level of distress, the number of patients with high rates of depression is almost 2 times higher than patients with a low level of distress (see Fig. 3). Based on consultation with patients, the following causes of symptoms of anxiety and depression were identified. In addition to the hospitalization situation and the deterioration of somatic state, the stress factor is also the severity of the life situation at the time of the injury (problems in the family, at work, planned trips, etc.). Anxiety about these problems can significantly reduce the motivation for treatment. In such cases, communication with a psychologist helps the patient resolve certain internal conflicts, build a treatment plan, accept his need, as well as the need to stay in a medical institution in accordance with the doctor's recommendations.

This is confirmed by data on a significant decrease in the level of distress in a group of patients ( $n=19$ ) who received a course of psychological support during their stay in the hospital. Before providing psychological assistance, the level of distress was  $6.4 \pm 2.65$  points, and after treatment it was  $4.2 \pm 2.46$  points. A statistically significant decrease in the rate of distress was also established using the non-parametric Wilcoxon test ( $W = -3.153$ ;  $p = 0.002$ ;  $n = 83$ ). This parameter is used to study statistically

significant differences in coherent samples (for example, groups of relatives, “before and after” indicators). If the indicator W has a negative value, then the indicators from the second sample are lower than in the first one (in our case, the indicators “after” are lower than the indicators “before”).

In addition to discussing the prospects of treatment and developing an optimistic attitude for the future, the targets of assistance were the processing of traumatic events that preceded hospitalization if they caused anxiety and led to symptoms of post-traumatic stress in the form of intrusive memories, as well as possible measures to resolve problems in the family and at work arising from hospitalization.

The role of the factor of psychological assistance in such dynamics remains to be identified in further studies by comparing these data with the data of the control group of patients who did not receive psychological assistance, with similar diagnoses and the severity of the underlying disease.

## CONCLUSION

1. Hospitalization is a factor of distress and often leads to emotional maladaptation of patients. According to subjective self-reports, more than half of patients experience an increase in the level of distress, which is most often expressed in an increase in the level of anxiety (51%), fear (25%), sadness (21%), and feelings of loneliness (21%).

2. Most of the examined patients experience an increased level of distress (26% - high and 36% - medium). The vast majority of patients with high levels of distress have clinically pronounced symptoms of anxiety and depression, which is a reliable indication of the need for psychological assistance. However, in some patients with an increased level of distress, anxiety and depressive symptoms are not expressed (31% and 48%, respectively), which may indirectly indicate a high level of alexithymia and somatization of anxiety.

3. A pilot study of a group of patients being treated in the clinical departments of the hospital allows us to draw a preliminary conclusion about the positive impact of the course of psycho-correctional classes on the patient's emotional state and the level of distress experienced, that is, it helps the patient resolve certain internal conflicts associated with a sudden change in life situation, calm down and positively tune in to treatment.

4. The revealed high level of symptoms of anxiety and depression in many patients upon admission to the emergency department and in the clinical departments of emergency medical facilities indicates the importance of such a link in the treatment process as psychological assistance, which not only improves their emotional state, but also positively set up for treatment and interaction with medical personnel. The presence of medical psychologists allows the work of emergency medical institutions based on modern biopsychosocial models to be organized.

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