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Psychological Consequences of COVID-19: Analysis of Risk Factors and Patient Characteristics

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Abstract The aim of the study was to determine the level of anxiety and depression in patients after experiencing COVID-19, as well as to identify key risk factors for their development. The study involved 200 patients who had experienced COVID-19 of varying severity. Standardized scales were used to assess the psychological state, as well as statistical analysis methods for determining risk factors. The results showed that patients with a severe course of the disease showed a significant increase in the levels of anxiety and depression compared to the group with a mild form. Risk factors such as age ≥60 years, duration of symptoms longer than 4 weeks, lack of social support, and presence of chronic diseases were identified. The findings highlight the need to implement comprehensive psychological support and rehabilitation programs for patients after COVID-19.

Keywords COVID-19, Cardiovascular diseases, Psychological state, Anxiety, Depression, Quality of life

1. Introduction

The COVID-19 pandemic coronavirus pandemic has had a global impact not only on the physical health of the population, but also on the psychoemotional state of patients. According to numerous studies, COVID-19 survivors have an increased prevalence of anxiety disorders, depression, and post-traumatic stress disorder [1,2] (PTSD) (Smith et al., 2021; Lee et al., 2022). These disorders can persist for a long time after recovery and negatively affect the quality of life of patients. Despite the growing number of studies on the psychosocial consequences of COVID-19, the risk factors for developing mental disorders in this category of patients remain poorly understood [3,4,5,6,7]. An important aspect is to understand which groups are most susceptible to these disorders and what conditions contribute to their development.

The aim of this study is to assess the level of anxiety and depression in patients after experiencing COVID-19 and identify risk factors for their occurrence. This will make it possible to develop recommendations for the prevention and timely correction of psychoemotional disorders in the post-covid period.

2. Materials and Methods

The study included 150 patients aged 40 to 75 years with confirmed cardiovascular pathology (coronary heart disease, hypertension, heart failure) who had had COVID-19 in the last 6 months. The control group consisted of 50 patients with a similar pathology without a history of COVID-19. The following methods were used:

Assessment of the psychological state

To assess the level of anxiety, the Hamilton Anxiety Rating Scale was used Scale, which includes 14 points according to the severity of anxiety symptoms. Values ≥18 indicate the presence of clinical anxiety. TheBeck Depression Inventory, consisting of 21 items, was used to assess depressive symptoms. Values ≥16 indicated the presence of moderate or severe depressive symptoms. TheMultidimensional Scale of Perceived Social Support was used Perceived Social Supportto assess the level of support from family, friends, and significant others. Data were also collected on the duration of symptoms of COVID-19, the presence of chronic diseases, the level of stress during the illness (on the Perceived Stress Scale), as well as demographic characteristics. The data were processed using SPSS v25. 0 software. Student's t-test for continuous variables and $\chi 2$-test for categorical data were used to compare groups. To determine the risk factors, we used logistic regression analysis with the calculation of Odds Ratio (OR) and confidence intervals (CI). Statistical significance was assumed at $p<0.05$.

3. Results

General characteristics of participants. The average age was 58 ± 9 years; women — 62%, men-38%. The distribution by

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severity of the disease was uniform: for the mild/moderate group-100 people; for the severe group-100 people.

The average Hamilton score for the entire sample was 17 ± 5 points. In the severe group, it was significantly higher — 22 ± 4 points versus 12 ± 3 points in the mild/moderate group ($p<0.001$). Participants who had experienced severe COVID-19 had a level of clinically expressed anxiety (scores ≥18) of 68%, while in the group with mild or moderate COVID-19, this indicator was significantly lower — 22%. As for depressive symptoms, the average Beck score for the entire sample was 15 with a spread of ±6. In the group with a severe course of the disease, this indicator reached 20 ±3, and in the group with a mild or moderate form — 11 ±2. The percentage of participants who showed signs of depression (scores ≥16) in the severe group was 60%, while in the less severe group it was only 15%.

Risk factor analysis

Table 1. Logistic regression analysis of the developmentof anxiety and depressive symptoms

Factor	Odds Ratio (OR) factor	Confidence interval (95% CI)	p-value
Age ≥60 years	2.3	[1.2-4.5]	0.01
Severe COVID	3.1	[1.8–5.4]	<0.001
Duration of symptoms >4 weeks	2.0	[1.1–3.7]	0.03
Lack of social support	2.7	[1.5–4.8]	<0.01
Presence of chronic diseases	1.8	[1.02-3.2]	0.02

Similar factors were found to be significant in the analysis of depressive symptoms.

4. Discussion

The results confirm the high prevalence of psychoemotional disorders in patients with COVID-19, especially in those who have suffered a severe form of the disease or had a long recovery period. Age ≥60 years is an important risk factor for developing anxiety and depression [3]; this is consistent with other studies on the increased vulnerability of older people to mental disorders after infectious diseases (Khan et al., 2022). The severe course of the disease is associated with more pronounced psychological consequences due to the intensity of treatment, hospitalization in intensive care units, and possible complications. Lack of social support significantly increases the risk of developing anxiety and depressive states-this confirms the importance of a social environment in the process of restoring mental health. The duration of COVID-19 symptoms for more than four weeks is associated with increased levels of stress and psychological stress, which contributes to the development of emotional disorders. These data highlight the need to introduce systematic psychological support for this category of patients immediately after recovery or during rehabilitation.

5. Conclusions

The level of anxiety and depression is significantly higher in patients after a severe course of COVID-19. The main risk factors are age ≥60 years, severe course of the disease, duration of symptoms for more than four weeks, and lack of social support.

The results indicate the need for a comprehensive approach to rehabilitation of patients with cardiovascular diseases after COVID-19, including psychological support. An important aspect is the early detection and correction of psychoemotional disorders to improve the overall condition and improve the effectiveness of treatment. It is necessary to integrate psychological assistance into rehabilitation programs for patients with COVID-19. Prevention work among high-risk groups is important to prevent the development of chronic mental disorders. Further research is needed to develop effective methods for the prevention and correction of psychoemotional disorders in the post-covid period.

The transmission of COVID-19 in patients with cardiac pathology is associated with a high level of psychoemotional distress. Systematic measures are needed to provide psychological assistance to reduce the risk of developing chronic mental disorders and improve the quality of life of this category of patients.

6. Practical Recommendations

Introduction of screening programs to detect anxiety and depressive symptoms in patients with cancer. Development of psychological support programs for high-risk groups. Training of medical personnel in the skills of early diagnosis of mental disorders. Create interdisciplinary teams for a comprehensive approach to the rehabilitation of patients after COVID-19.

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