MENTAL HEALTH DISORDERS IN PHYSICIAN ASSISTANTS AND OTHER HEALTHCARE WORKERS DURING A PANDEMIC

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Abstract

The purpose of the study was to determine the manifestations of depression, stress and anxiety in physician assistants using a self-report scale and to compare with other healthcare workers. The validated self-report scale DASS 21 was used, which contains three subscales with 7 questions to measure depression, anxiety and stress, evaluated on a four-point scale. The study was performed in October 2022 among 68 physician assistants and 597 other healthcare workers from ambulatory, hospital and emergency medical care. Comparing the frequency of mental health disorders showed that the relative proportions of physician assistants with varying degrees of depression (34%), anxiety (46%) and stress (28%) were higher than for other occupational groups. For anxiety this frequency was significantly higher ($p < 0.001$). Comparing group mean levels of mental health disorders across occupational groups showed significantly higher levels of anxiety among physician assistants compared to physicians ($p < 0.001$). This indicates that physician assistants are a particularly vulnerable group in terms of anxiety symptoms. It is a positive fact that mild and moderate degrees of mental health disorders prevail. More than half (51%) of physician assistants were found to have some type of mental health disorder. The most common were the cases where depression, anxiety and stress were simultaneously present (19%). Significant correlations were found between the severity of depression, anxiety and stress ($p < 0.0001$). These results provide a clear signal for the need of professional assistance for mental health prevention in healthcare workers, especially in physician assistants during the pandemic.

Key words: *mental health, Covid-19, healthcare workers, physician assistants*

Introduction

In December 2019, the severe acute respiratory syndrome coronavirus 2 (SARS – CoV – 2) infection spread around the world, starting from Wuhan, China. According to current data from the World Health Organization, 771,820,937 people have been infected with the virus worldwide, and the number of deaths is 6,978,175 [1]. In Bulgaria, there are currently 1,324,998 confirmed cases of infection with SARS-CoV-2 since the beginning of the pandemic, and among healthcare workers the number of infected people is 26,705 [2].

Patient care is provided by medical specialists in ambulatory, hospital and emergency care. In addition to the danger for the staff's health, the negative psychological impact of the pandemic should not be underestimated. In order for the care for these patients to be adequate, it is necessary for health workers to be trained and reassured in their own safety and that of their families.

In various studies during previous pandemics, high levels of anxiety [3] and stress [4] were found among medical professionals. Similar are the results in the current Covid 19 pandemic - with manifestations of anxiety, stress and depression among all those working in healthcare

[5,6]. There is not enough information about the frequency of these manifestations among physician assistants, who are among the healthcare workers in closest contact with infected patients.

The aim of our study is to use a self-report scale to determine the manifestations of depression, stress and anxiety during a wave of Covid-19 in physician assistants and to compare them with other healthcare workers.

Materials and methods

The study was conducted among 68 physician assistants and 597 other healthcare workers (physicians, nurses, laboratory assistants, orderlies and non-medical staff) from three multidisciplinary hospitals for active treatment, two specialized hospitals for active treatment of pulmonary diseases, centers and affiliates for emergency medical assistance, two diagnostic-consultative centers and two laboratories from a total of 10 larger and smaller settlements in Southern Bulgaria. The validated four-level self-report scale DASS-21 (Depression, Anxiety and Stress Scale) was used, which contains three subscales with 7 questions each for depression, anxiety and stress [7]. DASS-21 is a short version of DASS-42 and is commonly used to help with clinical diagnosis and follow-up, as well as a screening tool in non-clinical settings.

Each of the three DASS-21 scales contains 7 items/statements, corresponding to the most common symptoms of each emotional state:

• Depression: dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest, anhedonia and inertia.

• Anxiety: autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect.

• Stress: levels of chronic nonspecific arousal, difficulty relaxing, nervous arousal, and being easily upset, irritable, over-reactive and impatient.

The tested subjects are requested to circle the number 0, 1, 2 or 3 to indicate how much the statement applied to them over the past week. The rating scale is as follows:

0 - Did not apply to me at all, or never

1 - Applied to me to some degree, or some of the time

2 - Applied to me to a considerable degree, or a good part of the time

3 - Applied to me very much, or most of the time

The scores are presented as a total score and a score for each of the three subscales. In addition, scores for each subscale are categorized into normal, mild, moderate, severe and extremely severe [7].

The respondents were surveyed in October 2022, preserving their anonymity and with informed consent for their participation. IBM SPSS Statistics 19 was used to process the results. The frequency (relative proportion) of physician assistants and other healthcare workers with varying degrees of depression, anxiety and stress was determined. A t-test was used to compare relative proportions within groups. Differences between average group levels of mental disorders in different occupational groups were assessed. For this purpose, the Mann-Withney U-test was used to test hypotheses due to a non-normal distribution of cases. A non-parametric Spearman correlation analysis was used to determine the correlation between the levels of depression, anxiety and stress.

Results and Discussion

Comparing the relative proportions of cases of depression among physician assistants (34%) and among other health care workers (29%) showed no statistically significant difference. In both groups, cases with mild and moderate depression prevailed. The incidence of severe and very severe depression was a total of 4% in both groups (Figure 1). No significant differences were also found between mean levels of depression when comparing the different occupational groups using the Mann-Withney U-test. Similar results were found in a Latvian study by L. Valain et al., according to which levels of depression among physicians, nurses, and physician assistants were similar [8].

The relative share of physician assistants with manifestations of anxiety (46%) turned out to be significantly higher ($t = 3.35$ at $p < 0.001$) than that of the rest of the healthcare workers (26%). A positive fact is that even here the cases of mild (19%) and moderate anxiety (18%) prevail. Severe anxiety is present in 3%, and very severe – in 6% of physician assistants (Figure 2). The search for differences between the mean anxiety levels in the studied occupational groups showed that anxiety levels were significantly higher among physician assistants than among physicians. It is likely that this is due to the fact that physician assistants are among the medical workers with the closest contact with infected patients. They participate in the triage, examination and manipulations carried out in hospital and outpatient care. Accordingly, the risk to their health is higher, which would explain the results we obtained. Similar observations were also made by Annegret Dreher et al. in a study of the manifestations of stress and anxiety among medical assistants in Germany during the Covid-19 pandemic [9]. There were no significant differences from the other professional groups in our study.

The frequency of stress, in contrast to the described above, was less disturbing - 28% of physician assistants and 22% of other healthcare workers had varying levels of stress, and the difference was not statistically significant. Cases of mild and moderate stress predominated (Figure 3). No significant difference was found when comparing the average group stress levels in the different occupational groups.

Figure 4 shows that more than half (51%) of the physician assistants and 40% of the remaining respondents had some type of mental health disorder. In both groups, in the cases with mental disorder, the largest relative share were those who had depression, anxiety and stress simultaneously - 19% for the medical assistants and 13% for the rest of the healthcare workers. This gave us reason to search for a correlation between the various mental health disorders. We found significant correlations between levels of depression and anxiety (Spearman's rho $\rho = 0.865$; $p < 0.0001$), between depression and stress ($\rho = 0.746$; $p < 0.0001$), as well as between anxiety and stress ($\rho = 0.726$; $p < 0.0001$) for the medical assistants. This shows that workers who are vulnerable to the impact of psycho-social risk factors most often have mental health disorders of all three considered types – depression, anxiety and stress.

It is inevitable when all medical professionals are placed in extreme and unexpected conditions, as is the case with the widespread SARs CoV 2, to observe numerous mental and psychological effects - manifestations of stress, depression, anxiety [10,11]. In the conditions of a pandemic, in addition to the risks to their own health, they also face many other factors - extended working hours, an extremely increased number of patients, a lack of sufficient staff and/or lack of efficient personal protective equipment [10]. All this, as well as the concern for their relatives, regardless of whether they are in a risk group or not, expectedly leads to

manifestations of various changes in mental health. According to some authors, the Covid-19 virus alone is a sufficient cause of such disorders in healthcare professionals [12, 13]

It is difficult to say which of the medical professionals are most vulnerable to depression, anxiety and stress in the conditions of the Covid-19 pandemic. Our research shows that physician assistants have the highest percentage of disorders. It has been commented in the literature that one of the factors for greater resistance is older age [12,14], which is associated with greater experience and skills for dealing with stressors in the workplace [15]. As a relatively new specialty in Bulgaria, it can be assumed that physician assistants are among the youngest part of medical specialists, which may also explain the results we obtained. There are quite a few studies in the literature that support this thesis [16,17,18].

Nevertheless, the risk for the mental well-being and observed deviations are evident in all healthcare workers. This sends a clear signal about the need for professional help for mental health prevention in healthcare workers, especially during a pandemic.

Acknowledgments

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Figure legend:

Figure 1: Relative proportion of Physician Assistants and Other Medical Professionals with manifestations of varying degrees of depression

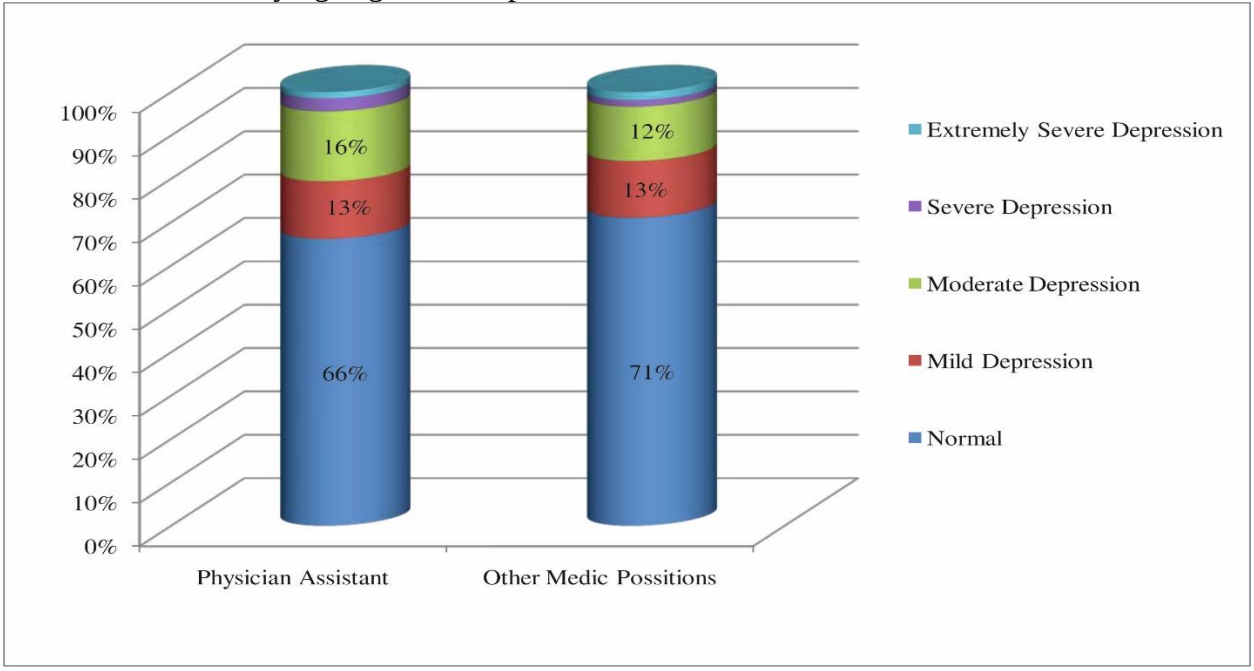

Figure 2: Relative proportion of Physician Assistants and Other Medical Professionals with manifestations of varying degrees of anxiety

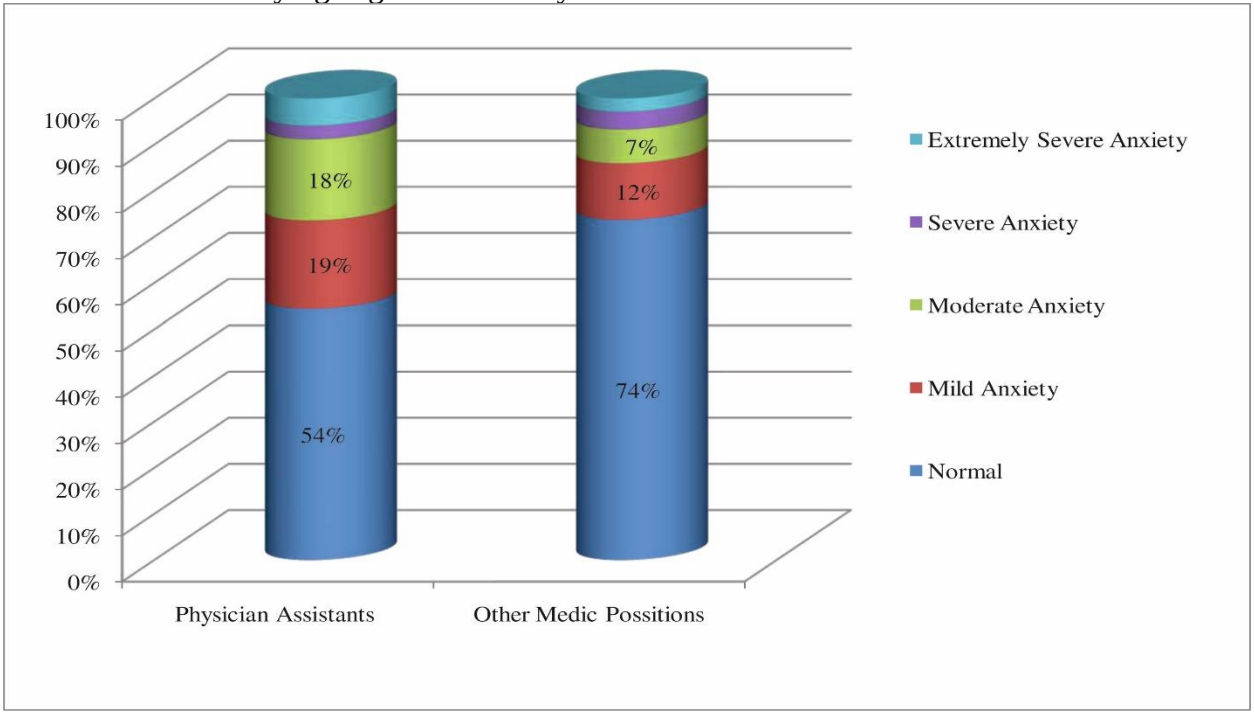

Figure 3: Relative proportion of Physician Assistants and Other Medical Professionals with manifestations of varying degrees of stress

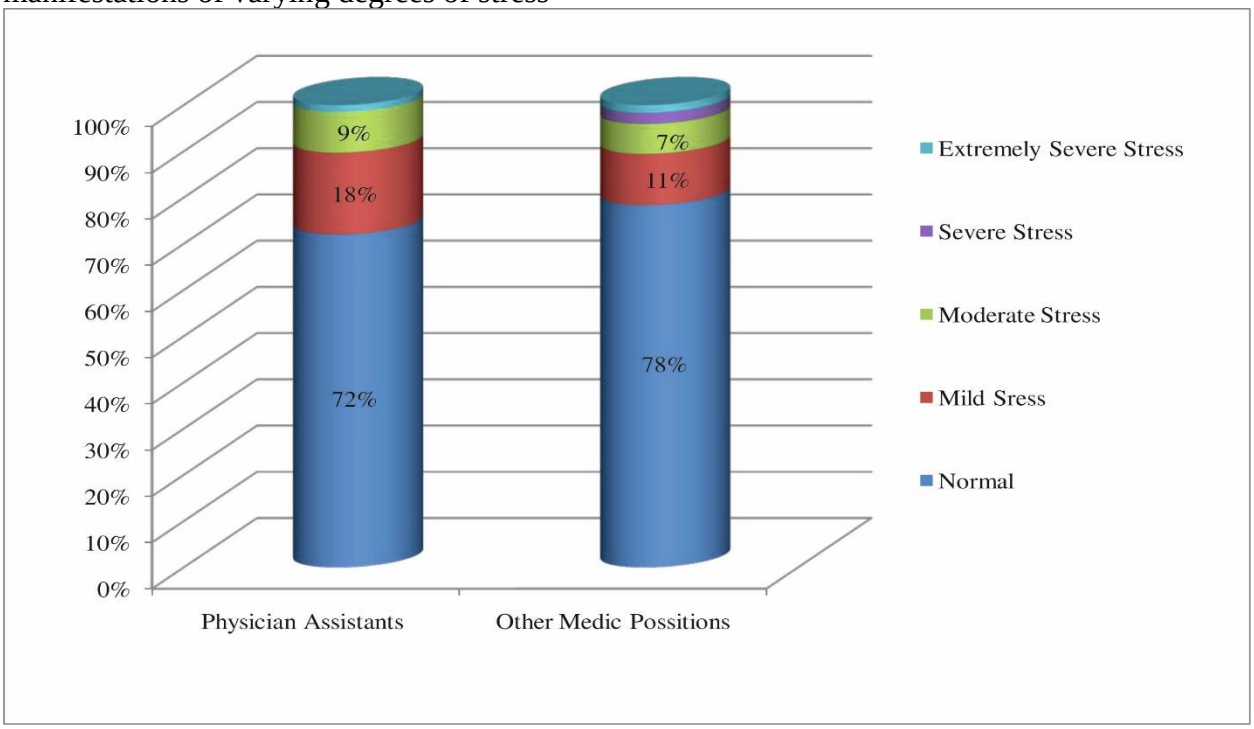

Figure 4: Relative proportion of different mental health disorders in healthcare workers by occupation