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FEAR OF COVID-19 AMONG BULGARIAN HEALTHCARE WORKERS AND RECOVERED PATIENTS DURING THE COVID-19 PANDEMIC

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Abstract. *The COVID-19 pandemic made a significant impact on global psychological wellbeing. To investigate the impact of COVID-19 on different groups' behavior, the current study assessed fear of COVID-19, anxiety, depression and sleep quality among medical professionals and patients. The study was proceeding during the period February-June 2021 following the highest number of pandemic-related deaths in Bulgaria. The fear predicted elevated levels of anxiety, depression, and sleep quality were assessed. Purpose: The aim of the study is to assess fear of COVID-19 among frontline healthcare workers in comparison with patients, recovered after the disease. Materials and Methods: The study was a questionnaire-based analytical incorporating four questionnaire-based tools. First questionnaire was used to assess fear of COVID-19. The second was for sleep disturbances assessment, the third questionnaire was used to assess general depression and the forth - anxiety. Results: In terms of sleep status, their average PSQI score was 7.6 (SD = 3.5) points, with a range from 0 to 16 points. According to the cut point of PSQI, 58(42.9%) of medical professionals were suffering from sleep disturbances. On the contrary - average PSQI score was 3.4 (SD = 2.6) points, with a range from 0 to 16 points. According to the cut point of PSQI, 43(41.2%) of recovered patients were suffering from sleep disturbances. Anxiety, depression and fear of COVID-19 were more common in healthcare workers than in patients. Conclusions: 81.9% of female nurses shared sleep disturbances comparing with 15.1% of male medical professionals and 41.2% of male and female patients. During the epidemic period, particular attention must be paid to the mental well-being and sleep quality*

Keywords: *1, anxiety, 2. COVID-19 pandemic, 3. depression, 4. fear, healthcare workers, 5. sleep quality*

1. INTRODUCTION

The COVID-19 pandemic made a significant impact on global psychological wellbeing. To investigate the impact of COVID-19 on different groups of people, the current study assessed fear of COVID-19, anxiety, depression and sleep quality among medical professionals and patients.

The COVID-19 pandemic has not only posed a severe threat to physical health but has also taken a toll on the mental well-being of individuals worldwide [1]. In addition, the COVID-19 pandemic has brought about significant psychological consequences for both health care workers and recovered patients, but the impact is more pronounced on health care workers due to the unique challenges they face in their roles. Healthcare workers, including doctors, nurses, and other frontline staff, are at the forefront of fighting the virus and providing care to affected individuals. However, this also exposes them to a higher risk of contracting the disease [2,3].

Several factors contribute to the fear of COVID-19 experienced by healthcare workers:

1.1. Risk of infection: Healthcare workers have a higher chance of being exposed to the virus due to their close proximity to infected patients. This fear is intensified by the limited availability of personal protective equipment (PPE) and the potential for inadequate protection [4].

1.2. Transmission to loved ones: Healthcare workers fear transmitting the virus to their family members and loved ones. The fear of unintentionally infecting their vulnerable family members, particularly the elderly or those with underlying health conditions, can cause significant distress.

1.3. Lack of knowledge and understanding: In the early stages of the pandemic, there was limited information about COVID-19, its transmission, and effective treatment options. This lack of knowledge contributed to fear and uncertainty among healthcare workers [5].

1.4. Burnout and exhaustion: The pandemic has placed an enormous burden on healthcare workers, leading to increased stress, burnout, and exhaustion. The fear of contracting the virus, coupled with the overwhelming workload and emotional toll, can exacerbate mental health issues [6].

1.5. Moral distress: Healthcare workers may experience moral distress when faced with difficult decisions, such as resource allocation or providing care in challenging circumstances. The fear of making mistakes or not being able to provide optimal care can contribute to their anxiety [7].

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1.6. Stigmatization: Some healthcare workers have faced stigmatization and discrimination due to their profession and potential exposure to the virus. This can add to their fear and stress levels [8].

Addressing the fear of COVID-19 among healthcare workers is crucial for their well-being and the effective management of the pandemic. It requires providing adequate PPE, ensuring access to accurate and up-to-date information, implementing effective infection control measures, facilitating mental health support, and promoting a supportive work environment. Additionally, recognizing and appreciating the sacrifices and efforts of healthcare workers can help alleviate their fear and boost morale.

2. The Aim of the Study

In this study, we delved into the psychological consequences experienced by health care workers and recovered patients in the aftermath of the pandemic, aiming to determine who is more impacted by these challenges. The fear predicted elevated levels of anxiety, depression, and sleep quality were assessed.

3. Methods

The study was proceeding during the period February-June 2021 following the highest number of pandemic-related deaths in Bulgaria. Questionnaire-based tools: Fear of COVID-19 questionnaire. Sleep disturbances assessment, Depression questionnaire Anxiety questionnaire

3.1. Sleep Disturbances questionnaire

The sleep disturbances were identified and measured using the Pittsburgh Sleep Quality Index (PSQI) Cronbach's alpha = .72 [9].

The PSQI contains 19 items and generates 7 components, including subjective sleep quality (C1), SL (C2), sleep duration (C3), habitual SE (C4), sleep disturbance (C5), use of sleeping medication (C6), and daytime dysfunction (C7) during the past month. Two typical items for the used scale: 6. During the past month, how often have you taken medicine to help you sleep (prescribed or "over the counter")? 7. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?

3.2. Beck Anxiety Inventory (BAI)

The Beck Anxiety Inventory was used to assess the participants' self-reported anxiety. The BAI contains 21 items. The possible score for each item ranges from not at all (0) to severely—I could barely stand it (3), with the different items covering each symptom of anxiety over the past week. The sum of the scores ranges from 0 to 63. Cronbach's alpha = .91 [10]. Two typical items for the used scale: Indicate how much you have been bothered by that symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom: 4. Unable to relax; 5. Fear of worst happening

3.3. Beck Depression Inventory–II (BDI-II)

The Beck Depression Inventory–II was used to assess the participants' self-reported depression. The BDI-II contains 21 items with four response options for each item. Cronbach's alpha = .78 for the Cognitive dimension (corrected item-total correlations between .45 and .62); Cronbach's alpha = .77 for the Somatic dimension (corrected item-total correlations between .42 and .56); and Cronbach's alpha = .70 for the Affective dimension [11].

The possible score for each item ranges from 0 to 3. On each item, the respondent is asked to choose the statement best describing their attitude toward the item for the past week. The sum of the scores ranges from 0 to 63. Two typical items for the used scale:

4.

1. I get as much satisfaction out of things as I used to.
2. I don't enjoy things the way I used to.
3. I don't get real satisfaction out of anything anymore.
4. I am dissatisfied or bored with everything.

5.

1. I don't feel particularly guilty
2. I feel guilty a good part of the time.
3. I feel quite guilty most of the time.
4. I feel guilty all of the time.

3.4. Fear of COVID-19 questionnaire

The participants indicate their level of agreement with the statements using a five- item Likert type scale. Answers included "strongly disagree," "disagree," "neutral" "agree" and "strongly agree". The minimum score possible for each question is 1, and the maximum is 5. A total score could be calculated by adding up each item score (ranged from 7 to 35) Two typical items for the used scale: 2. I will not be able to access health care that I need for my condition. 4. I will need to be isolated for longer than others because of my condition. Cronbach's alpha = .86 [12].

4. Participants

4.1. Healthcare workers

A total of 143 healthcare workers have been invited to participate in the study. Participants ranged in age from 22 to 65 years old from Bulgaria, Stara Zagora region. All of them work in Multi-profile hospitals for active treatment. 109 female nurses with more than 1 year of working experience and 26 male nurses and other medical staff were invited to answer the study questionnaires.

The exclusion criteria were pregnant and/or undergoing psychiatric therapy. Questionnaires have been completed from August to December, 2021. The total response rate was 94.4% - 135 participants completed the study questionnaires. Family status:

Married – 72; Single – 28; divorced/or were widowed – 35.

4.2 Patients

128 recovered patients have been invited to participate in the study. 74 male patients and 54 female patients were invited to answer the study questionnaires.

The exclusion criteria were pregnant and/or undergoing psychiatric therapy.

Questionnaires have been completed from June to December, 2022. The total response rate was 82.0% - 105 participant completed the study questionnaires. Participants ranged in age from 28 to 75 years old. All participants were current resident in Bulgaria. Participant's education: Primary and secondary school – 17; High school – 39; Bachelor degree – 29; masters'/doctorate degrees – 20.

5. Results

5.1. Healthcare workers

The percentages of participants with severe anxiety (BAI score: 26-63), moderate anxiety (BAI score: 16-25), and mild anxiety (BAI score: 8-15) were 3.8%, 17.2%, and 35.9%, respectively.

Participant's average BDI-II score was 11.6 (SD = 7.3) points, with a range from 0 to 38 points.

The participants' rates of severe depression (BDI-II score: 29-63), moderate depression (BDI-II score: 20-28), and mild depression (BDI-II score: 14-19) were 2.7%, 9.8%, and 16.1%, respectively.

In terms of sleep status, their average PSQI score was 7.6 (SD = 3.5) points, with a range from 0 to 16 points. According to the cut point of PSQI, 58(40.6%) of them were suffering from sleep disturbance.

Among the 135 medical professionals working in COVID-19 departments, 77(56.9%) were in an anxiety state (BAI>8 points) and 39(28.6%) had depression (BDI > 14 points).

Of the 135 respondents, 58 (42.9%) were classified as subjects with poor sleep quality. The proportion of medical professionals working in COVID-19 departments with poor sleep quality is grater in group divorced/or were widowed subjects in comparison with those who are married or single.

Studies showed that females had a higher perception of COVID-19 risk and saw this pandemic as more dangerous for the population [13, 14]. Besides, females express their emotions easily, whereas males tend to suppress them and appear strong [15].

The most vulnerable to the fear of COVID-19 were female health care workers in comparison of other study participants [16].

5.2. Patients

The percentages of patients with severe anxiety (BAI score: 26-63), moderate anxiety (BAI score: 16-25), and mild anxiety (BAI score: 8-15) were 1.2%, 16.1%, and 28.5%, respectively.

Participant's average BDI-II score was 10.1 (SD = 6.4) points, with a range from 0 to 36 points.

The participants' rates of severe depression (BDI-II score: 29-63), moderate depression (BDI-II score: 20-28), and mild depression (BDI-II score: 14-19) were 1.2%, 9.3%, and 14.9%, respectively.

In terms of sleep status, their average PSQI score was 7.8 (SD = 3.7) points, with a range from 0 to 16 points. According to the cut point of PSQI, 43(41.2%) of them were suffering from sleep disturbance.

Among the 105 recovered patients, 48(45.8%) were in an anxiety state (BAI>8 points) and 27(25.4%) had depression (BDI > 14 points).

Of the 105 respondents, 43(41.2%) were classified as subjects with poor sleep quality.

A positive correlation was found between fear and depression and a negative correlation between the level of knowledge and fear, while age and type of faculty stood out as significant predictors of fear [13, 14].

People with masters'/doctorate degrees had lower anxiety than others. These results showed a decrease in fear associated with the COVID-19 pandemic, as awareness increased with education. [15]

The multivariate regression analyses showed that the most important predictors for fear about pandemic diseases after coronavirus disease (COVID-19) recovery was gender (β = −0.123), explaining 1.3% of the variance in the score, followed by education level (β = −0.092, 0.6%). The table 1 reveals some interesting findings, as gender and education are significant and the education is negatively correlated. This means that higher scores on the education decrease the risk of contracting COVID-19 [16].

Table1. Multivariate regression on fear about pandemic diseases

	β	SE	p-value
Gender	-0.123	0.47 ***	<0.01
Education	-0.092	0.55 ***	<0.01
Age	- 0.02	−0.10	0.38

6. Conclusion

The psychological consequences of the COVID-19 pandemic are profound for both health care workers and recovered patients. It is crucial to recognize and address the mental health needs of both groups to ensure their well-being and resilience in the face of future challenges However, the impact is more pronounced on health care workers due to the nature of their work and the challenges they face on the front lines of the pandemic.

During the epidemic period, particular attention must be paid to the mental well-being and sleep quality of female medical staff and the follow up is needed now. 81.9 % of female nurses shared sleep disturbances comparing with 15.1 % of male medical professionals and 41.2 % of male and female patients.

By shedding light on the psychological impact of the pandemic on health care workers and recovered patients, we can foster a greater understanding of the

challenges they face and advocate for the support and resources needed to address their mental health needs effectively.

Ethical standards

The authors confirm that all the procedures contributing to that study comply with the ethical standards of the relevant national and institutional committees on human research and with the Helsinki Declaration of 1975, as revised in 2008.

Limitations

The study was based on self-reports that could be a possible factor for social desirability bias. The sample was based on relatively small amount of health care workers and recovered patients and cannot be generalized to the general Bulgarian society. Finally, Age differences in the perceived relative importance of mental and physical health, may further influence the interpretation of the psychological consequences of the disease.

Future studies could aim to incorporate more socioeconomic, cultural and demographic variables in the analytical framework.

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