

ŁASKAWIEC-ŻUŁAWIŃSKA, Daria, WLAZŁO, Marika, GRAJEK, Mateusz, SZLACHETA, Patryk and KORZONEK-SZLACHETA, Ilona. Self-esteem, stress and anxiety among health care workers during the COVID-19 pandemic. *Journal of Education, Health and Sport*. 2023;20(1):78-89. eISSN 2391-8306. DOI <http://dx.doi.org/10.12775/JEHS.2023.20.01.009>
<https://apcz.umk.pl/JEHS/article/view/44603>
<https://zenodo.org/record/8160252>

The journal has had 40 points in Ministry of Education and Science of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of December 21, 2021. No. 32343. Has a Journal's Unique Identifier: 201159. Scientific disciplines assigned: Physical Culture Sciences (Field of Medical sciences and health sciences); Health Sciences (Field of Medical Sciences and Health Sciences). Punkty Ministerialne z 2019 - aktualny rok 40 punktów. Załącznik do komunikatu Ministra Edukacji i Nauki z dnia 21 grudnia 2021 r. Lp. 32343. Posiada Unikatowy Identyfikator Czasopisma: 201159. Przynależność dyscypliny naukowej: Nauki o kulturze fizycznej (Dziedzina nauk medycznych i nauk o zdrowiu); Nauki o zdrowiu (Dziedzina nauk medycznych i nauk o zdrowiu).
© The Authors 2023;
This article is published with open access at Licensee Open Journal Systems of Nicolaus Copernicus University in Torun, Poland
Open Access. This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author (s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non commercial license Share alike. (<http://creativecommons.org/licenses/by-nc-sa/4.0/>) which permits unrestricted, non commercial use, distribution and reproduction in any medium, provided the work is properly cited.
The authors declare that there is no conflict of interests regarding the publication of this paper.
Received: 17.06.2023. Revised: 21.06.2023. Accepted: 13.07.2023. Published: 18.07.2023.

Self-esteem, stress and anxiety among health care workers during the COVID-19 pandemic

Daria Łaskawiec-Żuławińska¹, Marika Wlazło², Mateusz Grajek³, Patryk Szlacheta⁴, Ilona Korzonek-Szlacheta⁴

1 Department of Prevention of Metabolic Diseases, Faculty of Health Sciences in Bytom, Silesian Medical University in Katowice, Piekarska 18, 41-902 Bytom, d201081@365.sum.edu.pl, ORCID: 0000-0003-0006-7603

2 Department of Prevention of Metabolic Diseases, Faculty of Health Sciences in Bytom, Silesian Medical University in Katowice, Piekarska 18, 41-902 Bytom, s78061@365.sum.edu.pl, ORCID: 0000-0003-0476-3585

3 Department of Public Health, Faculty of Public Health, Bytom, Silesian Medical University in Katowice, Piekarska 18, 41-902 Bytom, mgrajek@sum.edu.pl, ORCID:

4 Department of Prevention of Metabolic Diseases, Faculty of Health Sciences in Bytom, Silesian Medical University in Katowice, Piekarska 18, 41-902 Bytom, pszlacheta@sum.edu.pl, ORCID: 0000-0002-5651-3767
ikorzonek@sum.edu.pl, ORCID: 0000-0003-4736-7806

Abstract

Introduction: The effects of the impact of the COVID-19 pandemic on the mental health of many individuals are now becoming increasingly apparent, especially among health care workers, who not infrequently develop the so-called post-pandemic stress syndrome, referring in essence to post-traumatic stress disorder. This is a consequence of the fact that medics, especially those who worked on the front lines during the pandemic experienced enormous challenges and difficulties every day that burdened and/or exceeded their individual abilities to adapt.

Purpose: The purpose of this study was to assess well-being and the incidence of stress and anxiety among health care workers during the COVID-19 pandemic.

Material and Methods: 182 people participated in the study, belonging to the representatives of medical personnel. The study used a questionnaire technique, by providing a survey with questions in electronic form. The survey consisted of both original questions and standardized psychometric tools, i.e. WHO-5, PSS-10, GAD-7.

Results: Based on the scales, 78.6% of respondents were found to have elevated levels of stress and anxiety with a concomitant decrease in well-being in relation to COVID-19 work.

Conclusions: Disturbing mental health implications were found among health care workers. Those surveyed showed elevated levels of experiencing anxiety and stress, as well as reduced well-being while working during

the COVID-19 pandemic. To ensure optimal mental well-being among medical professionals, he recommends guaranteeing access to mental health support and assistance programs for health care workers.

Keywords: COVID-19; mental health; well-being; stress; anxiety

Introduction

The COVID-19 pandemic, which emerged in 2019, continues to pose an extremely significant challenge to society around the world today. As we all know, coronavirus was first identified among a cluster of patients showing signs of pneumonia of unknown cause [1]. Despite the fact that it affected the human respiratory system and it was in the respiratory system that it had direct health effects, today its effects on the mental health of many individuals are particularly noticeable [2]. The tremendous impact of the COVID-19 pandemic is particularly noticeable among high-risk occupations, which certainly include health care workers, a key occupational group in the fight against the disease [3].

A health care system ill-suited to a sudden mass influx of patients often in imminent life-threatening conditions presented professionals with numerous ethical dilemmas. Medical professionals, especially those who worked on the front lines during the pandemic experienced enormous challenges and countless difficulties every day. Working under these extraordinary conditions and increasing emotional strain meant that the risk of mental health disorders began to increase [4]. Medical personnel constantly making life-and-death decisions were constantly exposed during the COVID-19 pandemic to traumatic events such as an increasing number of infections and deaths, excessive workload, fear of contracting the disease, or the risk of transmitting it to their loved ones [5]. Significant stressors certainly also included a shortage of personal protective equipment (PPE), restrictions on contact with family/friends, and a lack of social support, all of which caused medical workers to live in constant anxiety and fear [6,7].

The identified negative factors, in addition to affecting the mental state of medical personnel directly during the pandemic, also now contribute to the development of depression and the so-called post-pandemic stress syndrome (PPSD), the symptoms of which become even more pronounced just after the end of the pandemic period [8]. Unlike short-term stress, PPSD refers to long-term and chronic stress symptoms that persist despite the cessation of the pandemic threat. Despite the fact that PPSD has not been distinguished as an independent disease entity, but only highlighted from another entity such as post-traumatic stress disorder (PTSD), the presence of PPSD is becoming increasingly noticeable in more and more people. For, in fact, post-pandemic stress syndrome is the resultant of a number of smaller distressing experiences that have the hallmarks of trauma, among which can be distinguished quarantine, isolation or fear of infection - so it is characterized by a set of symptoms similar to PTSD. Among them indicate: intrusive thoughts, concentration problems, sleep disturbances, feelings of social withdrawal, mood swings or so-called flashbacks of traumatic events [9,10]. The term PPSD was introduced by Owen O'Kane in 2021, and is still a significant problem occurring among many people today, resulting in an increasing number of scientific papers studying the phenomenon [8,10].

It's also worth noting that the mental health disorders occurring among medical professionals and linked to the COVID-19 pandemic pose not only individual challenges to individuals, but also to the quality of health care as a whole. Well, health care workers with problems in maintaining their mental well-being may also have difficulties in fulfilling their professional duties, which will inevitably affect both the safety of future patients and the functioning of the health care system as a whole.

The aforementioned repercussions of the COVID-19 pandemic support the need for further research on this topic, in order to lead to identifying the scale of the problem, finding appropriate solutions and providing

adequate assistance and working conditions conducive to the mental health of medical professionals. It is for this reason that this study was created, with the aim not only to identify the mental health problems of medics, but also to raise awareness of the need to support this professional group.

Material and methods

The questionnaire with questions was made available electronically. It consisted of both original questions and standardized measurement tools, i.e. the Well-Being Index (WHO-5), The Perceived Stress Scale (PSS-10), Generalized Anxiety Disorder (GAD-7) Questionnaire.

The WHO-5 questionnaire consists of five statements constructed to assess one's well-being over the past two weeks. It scores each response to each statement accordingly: "all the time" - 5 points, "almost all the time" - 4 points, "more than half the time" - 3 points, "less than half the time" - 2 points, "occasionally" - 1 point, "never" - 0 points. The total score ranges from 0 to 25 and is obtained by summing the scores of the responses to each of the five statements. With the assumption that 0 represents the worst possible quality of life, while 25 represents the best. A raw score of less than 13 indicates poor overall well-being and also prompts additional testing for depression using the Major Depression Inventory (ICD-10). Conducting the ICD-10 test is also recommended if you answer 0 to 1 on any question. In addition, in order to monitor any changes in well-being, a percentage score is used, obtained by multiplying the total score times 4. A 10% difference in score indicates a significant change.

The PSS-10 scale is concerned with assessing the level of stress related to personal life situations over the past month. Its questions address various subjective feelings about personal problems and events, behaviors or ways of coping. This scale is primarily intended for research purposes, less frequently in practice. People surveyed using this scale are asked to indicate their answer to each of the 10 questions, which are then scored accordingly according to the scale's guidelines. Thus: never - 0 points, almost never - 1 point, sometimes - 2 points, quite often - 3 points, very often - 4 points. The overall score is the sum of all points and ranges from 0 to 40 points. A higher score is associated with a higher level of severity of perceived stress. However, it is worth knowing that for the PSS-10 scale there are so-called Sten Norms, which are used to interpret the results. The most common assumption is that scores within 1-4 sten are low, while scores within 7-10 sten are high. In contrast, scores within 5 and 6 sten are considered average.

The GAD-7 questionnaire is used to determine the feelings associated with generalized anxiety syndrome. The survey questions arranged on its basis are a kind of screening test, by which is meant that they are not conclusive, as they only indicate the likelihood of generalized anxiety syndrome. The result obtained informs about the necessity, or lack thereof, of continuing diagnostics in this area and visiting a psychologist/psychiatrist. The questionnaire consists of a total of 7 questions from the past 2 weeks. Individuals surveyed with the GAD-7 are asked to select the answer they feel best expresses the frequency of the described feelings one at a time in each question. The answers are then scored as follows: 0- not at all, 1- for a few days, 2- more than half of that period, 3- almost every day. The overall score is the sum of the individual scores for each question. A score above 10 indicates the presence of clinically significant symptoms of generalized anxiety syndrome.

The survey was completely anonymous and participation was voluntary. The survey covered a group of 182 people in the period from 06.04.2023r. to 31.05.2023r.

One of the non-random sampling methods, which is purposive selection, was used in the selection of the sample. The key of selection, which is also a criterion for inclusion in the study, was professional membership in the health care system.

The largest age group among respondents was those in the 23-29 age range (44%). There were 55 respondents aged 30-39 (30.2%), and 36 respondents aged 40-49 (19.8%). The smallest age group was those aged 50-60 (6%).

Among the health care workers participating in the survey, nurses were the most numerous professional group, with 63 respondents (45.31%). This was followed in turn by paramedics - 63 people (32.81%), doctors - 22 people (11.46%), midwives - 10 people (5.21%). Also taking part in the survey were people in the professions of paramedics, medical caregivers, medical secretaries, electroradiology technicians, and dieticians - two people

from each of the listed professional groups, thus making up a total of 10 people (5.21%). In terms of place of work, the largest number of respondents are professionally affiliated with the Hospital Emergency Department (ED) - 64 people (30.77%), as well as the Emergency Medical Team (EMT) - 37 people (17.79%). This question was a multiple-choice response question.

Results

Among respondents, the most common length of seniority was 4 years, which was chosen by 25 survey participants (13.74%). The average length of service of all respondents is 9.02 years. The most common average number of on-call duties per week, assuming that 1 on-call duty lasts 12 hours among respondents was 4 on-call duties, which was chosen by 78 people (42.9%).

The next question concerned contact with a COVID-19 patient during professional work. Almost all respondents - 178 people (97.8%) - declared that they had such contact in their professional work. Only 4 people (2.2%) declared that they had no such contact.

In the question regarding whether the respondents had contracted COVID-19, the majority said they had contracted COVID-19 - 121 people (66.5%). In contrast, 61 people (33.5) answered that they had not been ill with COVID-19.

To the question of whether there was a problem of shortage of personal protective equipment at the workplace of the person taking part in the survey during the pandemic, 95 people (52.2%) answered in the affirmative, thus indicating the said problem. The opposite was answered by 87 people (47.8%).

When asked which of the negative feelings associated with COVID-19 bothered them the most, respondents mostly chose that it was fear of getting sick - 56 people (30.8%). This was followed sequentially by fear of quarantine/isolation/hospitalization - 40 people (22%); further by anxiety over lack of contact with family/friends - 32 people (17.6%); anxiety over difficult access to medical services - 29 people (15.9%); anxiety over public misinformation - 23 people (12.6%); and fear over loss of employment - 2 people (1.1%).

Among the respondents, the vast majority vaccinated for COVID-19 - 167 people (91.8%). Only 15 people (8.2%) had not vaccinated. The next question was addressed only to those who declared that they had vaccinated for COVID-19. It concerned the number of doses of vaccination received for COVID-19. Most respondents declared that they had received 3 doses of vaccination - 93 people (55.7%). 2 doses of vaccination were taken by 49 people (29.3%), and 4 doses by 13 people (7.8%). The least number of people took 1 dose of vaccination, regardless of the type of vaccine - 12 people (7.2%).

The next part of the survey included questions about the state of well-being according to the WHO-5 scale, which is described in the "Materiał i metody" section. Respondents were asked to indicate the answer that best described the frequency of the feelings described in the question. This section of the questionnaire, dedicated to the WHO-5 scale, included five standardized statements to which respondents chose the answers that best described how they felt over the past two weeks. In the first statement, "I felt cheerful/feeling cheerful and in a good mood," the most respondents selected the answer: "more than half the time". - 57 people (31.3%). This was followed sequentially by 51 people (28%) who chose the answer "almost all the time," 43 people (23.6%) chose the answer "occasionally," 17 people (9.3%) chose the answer "less than half the time," 13 people (7.1%) marked the answer "all the time," while 1 person (0.5%) chose the answer "never." In the second statement, "I felt calm and relaxed/I felt calm and relaxed," the largest number of respondents selected the answer "occasionally" - 58 people (31.9%). This was followed sequentially by 49 people (26.9%) selecting the answer "more than half the time," 36 people (19.8%) selecting the answer "almost all the time," 21 people (11.5%) opting for the answer "less than half the time," 11 people (6%) selecting the answer "never," and 7 people (3.8%) selecting the answer "all the time." The third statement: "I felt active and energetic/I felt active and energetic" received the most responses of "more than half the time," which was selected by 58 survey takers (31.9%). Slightly fewer, 54 respondents (29.7%) chose the answer "occasionally." 37 people (20.3%) marked the answer "almost all the time," 16 people (8.8%) chose the answer "less than half the time," 9 people (4.9%) marked the answer "all the time," and 8 people (4.4%) chose the answer "never." The fourth statement: "I woke up feeling refreshed and rested/I woke up feeling refreshed and rested" gathered the most respondents around the answer "occasionally," which was selected by 72 of them (39.6%). The choice of the remaining responses was as

follows: 40 people (22%) chose the answer "more than half the time," 28 people (15.4%) chose the answer "never," 24 people (13.2%) marked the answer "almost all the time," 14 people (7.7%) answered "less than half the time," and 4 people (2.2%) chose the answer "all the time." In the last statement: "My daily life was filled with things that interested me," the respondents' answer choices were as follows: 52 people (28.6%) - "occasionally", 49 people (26.9%) - "more than half the time", 45 people (24.7%) - "almost all the time", 20 people (11%) - "less than half the time", 10 people (5.5%) - "never", 6 people (3.3%) - "all the time".

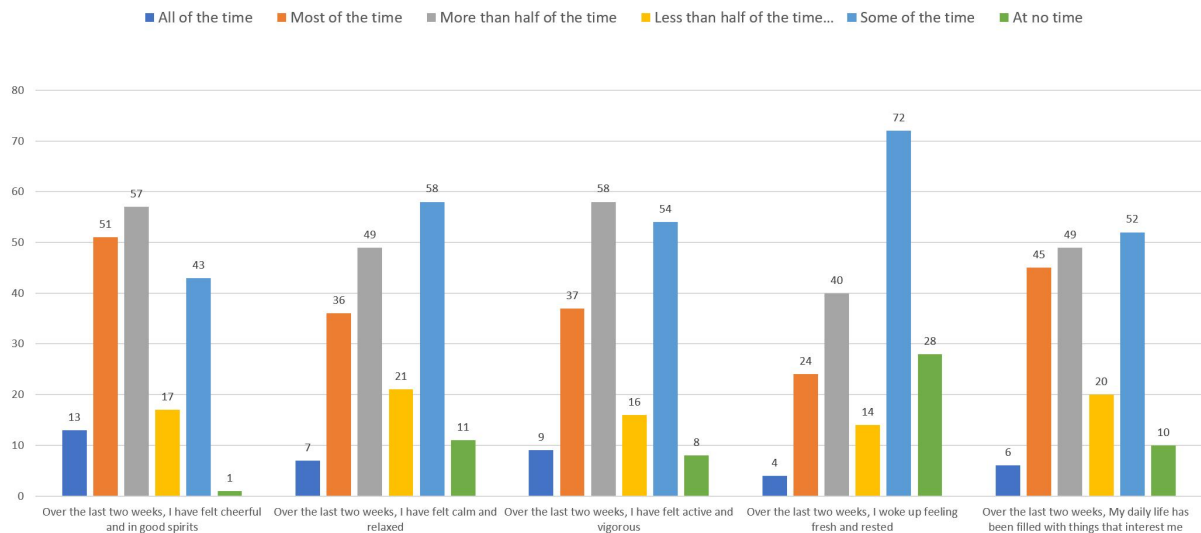


Figure 1: Respondents' self-perception according to the WHO-5 scale.

The next part of the survey included questions based on a scale used to measure the level of perceived stress - the PSS-10 scale, described in the "Material and Methods" section. This part of the survey consisted of 10 questions. The first question asked: "How often in the past month have you been upset because something unexpected happened?" the responses were as follows: 90 people chose the answer "sometimes," 44 people marked the answer "quite often," 30 people chose the answer "almost never," 14 people marked the answer "very often," and 4 people chose the answer "never." In the second question: "Over the past month, how often have you felt that important things in your life are out of your control?" the largest number of respondents answered "sometimes." - 70 people. This was followed sequentially by: 51 people indicated the answer "almost never," 32 people chose the answer "quite often," 17 people chose the answer "very often," and 12 people marked the answer "never." In the third question: ". How often in the past month have you felt nervousness and tension?" respondents answered as follows: "sometimes" - 67 people, "quite often" - 54 people, "almost never" - 39 people, "very often" - 18 people, "never" - 4 people. To the fourth question, "How often in the past month have you been convinced that you are able to cope with personal problems?" the largest number of respondents answered "sometimes" - 93 people. Then the respondents answered in turn: "quite often" - 41 people, "almost never" - 36 people, "very often" - 8 people, "never" - 4 people.

In the fifth question: "Over the past month, how often have you felt that things are going your way?" the largest number of respondents answered "sometimes." - 81 people. This was followed sequentially by: "quite often" - 54 people, "almost never" - 35 people. Both the answer "never" and "very often" were chosen equally by 6 people each. In the sixth question: "How often in the past month have you found that you can't handle all your responsibilities?" the respondents' answers were as follows: "sometimes" - was selected by 79 people, "almost never" - marked 42 people, "quite often" - selected 36 people, "never" - marked 14 people, and "very often" was selected by 11 people. To the seventh question, "How often in the past month have you been able to control your irritability?" the largest number of respondents answered "sometimes" - 87 people. This was followed sequentially by: 44 people selected the answer "quite often," 30 people answered "almost never," 14 people marked the answer "very often," and 7 people chose to answer "never." To the eighth question, "In the past month, how often did you feel that things were working out for you?" respondents answered as follows: 84 people chose the answer "sometimes," 55 people marked the answer "quite often," 28 people chose the answer "almost never," 10 people answered "very often," and 5 people chose the answer "never." To the ninth question,

"During the past month, how often did you get angry because you had no control over what happened?" most respondents answered "sometimes" - 74 people. This was followed sequentially by: 41 people marked the answer "quite often," 35 people chose the answer "almost never," 17 people chose the answer "very often," and 15 people answered "never." For the final, tenth question, "During the past month, how often have you felt that you could not overcome increasing difficulties?" most respondents answered "sometimes." 49 survey takers chose to answer "almost never," 30 chose to answer "quite often," 28 answered "never," and 12 marked the answer "very often."

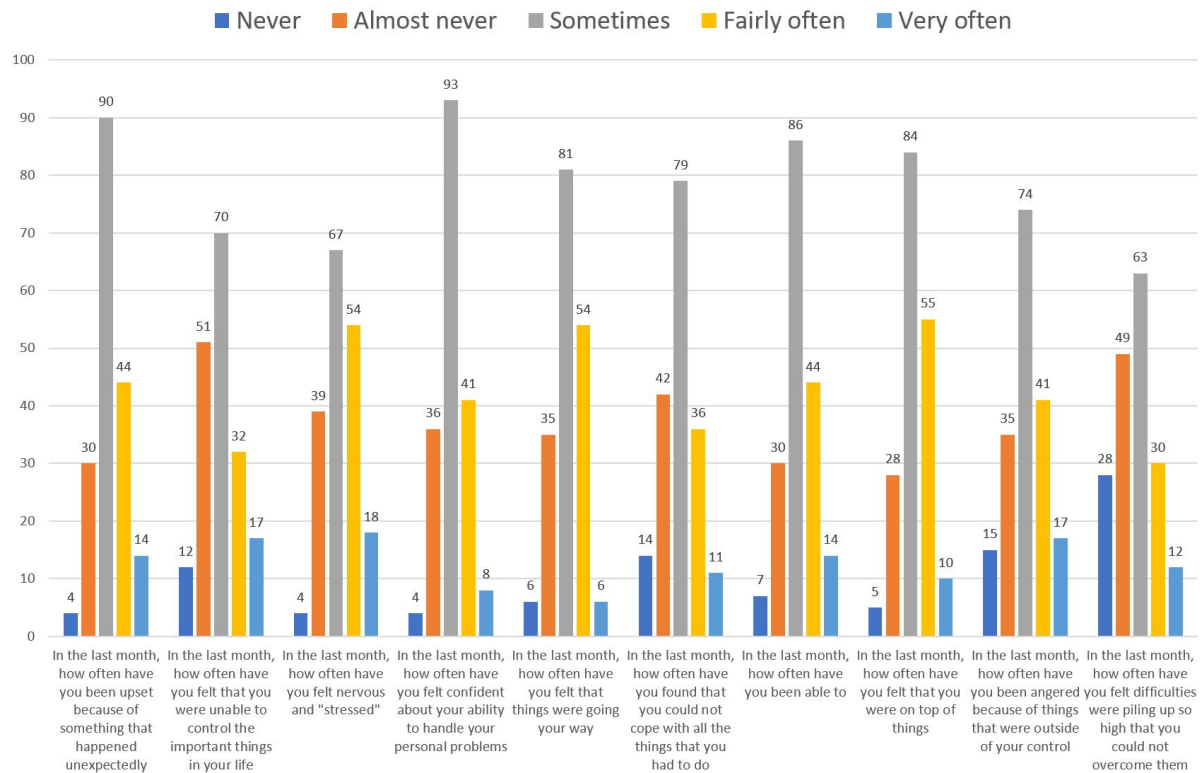


Figure 2: Stress among respondents according to the PSS-10 scale.

In the next part of the survey, subjects were asked questions based on a scale on generalized anxiety - the so-called GAD-7 scale, described in the "Material and Methods" section. This part of the survey consisted of 7 questions. In the first question, "Have you felt irritated, anxious, highly tense?" the largest number of respondents indicated the answer "for several days," which was selected by 91 people. This was followed comparatively: 36 people chose the answer "for more than half of that period," 31 people marked the answer "not at all," and 24 people chose the answer "almost every day." In the second question: "You could not stop worrying or get it under control". 77 people answered "for several days," 55 people marked the answer "not at all," 27 people chose the answer "for more than half of that period," and 23 people chose the answer "almost every day." The third question, "You worried too much about various things," gathered the most responses "for a few days," which was chosen by 79 respondents. This was followed comparatively by: 37 people marked the answer "for more than half of that period," 35 people chose the answer "not at all," and 31 people chose the answer "almost every day." In the fourth question: "Have you had difficulty relaxing?" respondents answered as follows: 69 people - "for several days," 54 people - "for more than half of that period," 34 people - "not at all," and 25 people - "almost every day." In the fifth question: "Were you so restless that you could not sit still" the largest number of respondents chose the answer "not at all". - 71 people. Slightly fewer, 65 people, marked the answer "for several days." This was followed by 30 people who chose the answer "for more than half that period" and 16 people who answered "almost every day." For the penultimate, sixth question, "You easily became irritated or annoyed," the largest number of respondents answered "for several days" - 85 people. This was followed sequentially by: 39 people answered "not at all," 35 people chose the answer "for more than half

of that period," 23 people marked the answer "almost every day." In the final seventh question: "You were afraid, as if something terrible was about to happen", most respondents selected the answer "not at all". 49 people marked the answer "for a few days." 26 people chose the answer "for more than half of that period." 16 people answered "almost every day."

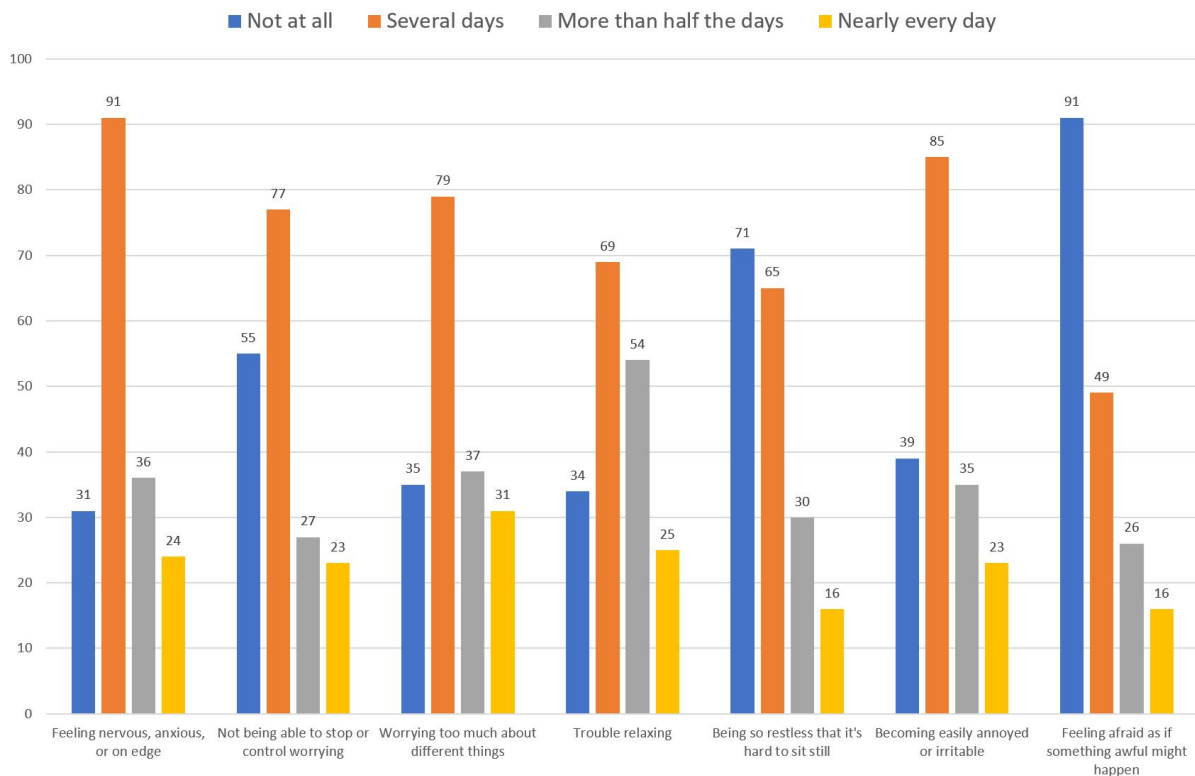


Figure 3: Anxiety among respondents according to the GAD-7 scale.

Based on the scales, 78.6% of respondents were found to have elevated levels of stress and anxiety with a concomitant decrease in well-being in relation to COVID-19 work.

Discussion

Mental health disorders among health care workers in the aftermath of the Covid-19 pandemic are a serious problem increasingly studied and reported in the scientific literature.

Brady et al. in a study on the mental health of hospital employees at the height of the COVID-19 pandemic in Ireland surveyed a total of 377 people, among whom were doctors, nurses and radiologists [11]. They used the World Health Organization's Well-Being Index (WHO-5), consisting of questions relating to well-being over the past two weeks assessed via a five-point measure, to assess workers' well-being. The occurrence of depressed mood was found in 46% of the health care workers surveyed, which compared to the pre-pandemic period was not a significant difference (49.5%). The authors also obtained similar results with regard to the occurrence of probable depression during the pandemic - 28% and before the pandemic - 22.2%. The reason for such small changes is not entirely clear and the authors of the cited paper believe it is due to the methodology of the study. Slightly different results were obtained in their study by AlKandari et al. on determining the magnitude and identifying factors having a psychological impact on health care workers in Kuwait during the pandemic [12]. In their study, low well-being was reported by 38.32% of respondents. Higher results were obtained in their study by Gustavsson et al. who surveyed 367 Polish health care workers via an anonymous questionnaire about their satisfaction with job security during the pandemic. Among the participants they surveyed, as many as 69.2% reported poor well-being [13].

The topic of mental health among health care workers was addressed in their work by Chatzittofis et al. examining, among other things, the intensity of perceived stress using the 10-point Perceived Stress Scale (PSS-10) [14]. The authors in the study they presented observed a high experience of stress among 25% of the study participants. However, it is worth noting that due to the lack of cut-off values against the scale used, the process of making comparisons and analyses between the works of different authors should be carried out with caution and emphasizing certain limitations [15]. Another study describing the scales of perception of stress by first- and second-line medical workers in the fight against SARS-Co-V-2 belongs to Antonijevic et al. In the cited study conducted on a group of 1,678 people, the authors find significant differences due to front-line combat. High feelings of stress were observed among 33.13% of first-line medical personnel and among 23.7% of second-line respondents [16].

In a study conducted by Lu et al. the authors referred to various negative feelings about COVID-19 among the 2299 participants in the study [17]. Among the medical personnel surveyed, only 26.2% were concerned about infection and the vast majority were worried about the situation of an infection showing no symptoms, a response indicated by 67.2%. Other concerns indicated by medical personnel included lack of protective equipment (61.4%), lack of control over future outbreaks (67%), and feeling lonely due to isolation (22%).

The prevalence of anxiety among medical personnel using the GAD-7 scale was described in a paper by Lai et al. on factors related to the mental health of healthcare workers in China. The authors in the paper described observed the prevalence of anxiety in 44.6% of those surveyed. In addition, doctors and nurses on the first line of infection control in Wuhan city showed severe anxiety symptoms found among 4.56% of men and 8.001% of women [18]. Similar results for generalized anxiety disorder were reported in their study by Wert et al. who described the prevalence of mild and severe anxiety among 43.1% of study participants [19]. Slightly different results were observed in their study of the anxiety levels of Finnish hospital employees by Mattila et al. The creators of the study found normal levels of anxiety in 55% of the staff surveyed, when only 5% of Finnish employees exhibited high levels of anxiety [20].

Grajek et al. conducted a study on the prevalence of symptoms indicative of post-pandemic stress syndrome among health care workers. Using the FCV-19S scale, they found a prevalence of moderate anxiety among 57% of those providing direct assistance to patients with COVID-19 and a prevalence of mild anxiety among 30% of second responders [21].

The BDI scale measuring depressive mood was used in a study by Yue et al. examining the correlation between the mental health of frontline medical personnel and sleep quality. The authors of the study indicated the presence of depression in 18.9% of those surveyed with scores above 4 [22]. A slightly lower prevalence of depression among doctors and nurses was observed in their study by Carriero et al. In the cited study on the psychological impact of the pandemic on Italian health care workers, 11.8% of those participating were found to have depression [23]. Depression prevalence scales in terms of the COVID-19 pandemic were described in their study by Vadi et al. In the cited study, 10.5% of those surveyed reported borderline depression, 12.4% moderate depression while 1.3% were found to be extremely depressed [24].

Early recognition of mental health disorders occurring under the influence of factors present in the workplace allows the creation of procedures leading to their mitigation and elimination. The discussion conducted indicates the need for increased monitoring of the mental health of health care workers for early detection of possible disorders.

Practical applications

Psychotherapy plays a crucial role in addressing depression related to the COVID-19 pandemic. The pandemic has brought about various stressors and challenges that can contribute to feelings of sadness, hopelessness, and despair. Psychotherapy offers a supportive and structured environment for individuals to explore their emotions, develop coping strategies, and work towards healing and recovery [25]. Here are some ways in which psychotherapy can be used in the context of COVID-19 depression [26-28]:

1. **Assessment and Diagnosis:** A trained mental health professional can conduct a thorough assessment to determine the severity and nature of the individual's depression. They will consider the impact of

COVID-19-related factors on their mental health, such as social isolation, loss of loved ones, financial difficulties, or changes in daily routines. This assessment helps in forming an appropriate treatment plan.

2. **Emotional Support and Validation:** Psychotherapy provides a safe and non-judgmental space for individuals to express and process their emotions related to the pandemic and their depressive symptoms. Therapists offer empathy and validation, helping individuals feel understood and supported. By exploring their feelings, individuals can gain insights into the root causes of their depression and develop strategies to cope with the emotional impact of the pandemic.
3. **Cognitive Restructuring:** Psychotherapy, such as cognitive-behavioral therapy (CBT), can help individuals identify and challenge negative thought patterns and beliefs that contribute to their depression. The therapist assists individuals in recognizing distorted thinking and replacing it with more realistic and positive thoughts. This process can help individuals develop a more balanced and adaptive mindset, reducing the intensity of depressive symptoms.
4. **Behavioral Activation:** COVID-19 restrictions and lifestyle changes can lead to decreased motivation and engagement in pleasurable activities, exacerbating depressive symptoms. Psychotherapy can involve behavioral activation techniques to help individuals set and achieve small, achievable goals that increase their sense of accomplishment and pleasure. This can include scheduling enjoyable activities, reconnecting with hobbies, or engaging in self-care practices.
5. **Coping Skills Development:** Psychotherapy equips individuals with effective coping skills to manage the unique stressors associated with the pandemic. Therapists teach techniques such as relaxation exercises, mindfulness, stress management, and problem-solving skills. These strategies empower individuals to navigate the challenges of the pandemic more effectively and reduce the impact of depressive symptoms.
6. **Supportive Therapy:** The therapeutic relationship itself can be immensely valuable in addressing COVID-19-related depression. Therapists provide a compassionate and non-judgmental space where individuals can express their concerns, fears, and uncertainties. This support can alleviate feelings of isolation and provide a sense of validation, fostering resilience and hope.
7. **Adjustment and Resilience Building:** Psychotherapy can assist individuals in adapting to the changes and uncertainties brought about by the pandemic. Therapists help individuals identify their strengths and build resilience by focusing on their abilities to navigate challenging circumstances. Through exploration of previous successes and the development of coping strategies, individuals can gain confidence in their ability to overcome adversity and manage their depression.

Solution-Focused Therapy (SFT) can be a valuable approach in addressing the issues of fear, anxiety, and depression that may arise due to the COVID-19 pandemic. While SFT is typically used for a wide range of problems, its principles and techniques can be adapted to help individuals cope with the specific challenges posed by the pandemic [29, 30]. Here's how Solution-Focused Therapy can be applied in this context [31-35]:

1. **Focusing on solutions:** SFT emphasizes a solution-focused mindset rather than dwelling on problems. Therapists help individuals explore their strengths, resources, and previous successful coping strategies to identify potential solutions. This approach can help individuals shift their focus away from fear and anxiety towards identifying positive steps they can take to manage their emotions.
2. **Setting achievable goals:** Collaboratively setting achievable goals is a crucial aspect of SFT. Therapists work with individuals to establish realistic and measurable goals that address their fear, anxiety, or depression. These goals may involve finding healthy ways to manage stress, improving self-care routines, developing resilience, or enhancing social support systems.
3. **Amplifying exceptions and strengths:** SFT encourages clients to identify exceptions to their distressing emotions or situations. Therapists help individuals explore moments when they were less anxious or depressed, identifying the factors that contributed to those moments. By focusing on these exceptions and strengths, clients can gain insights into their own abilities to cope effectively, thus increasing their sense of hope and self-efficacy.
4. **Scaling questions:** Scaling questions are a key technique in SFT. Therapists may ask individuals to rate their level of anxiety, fear, or depression on a scale from 0 to 10, with 0 being no distress and 10 being extreme distress. This allows for a tangible representation of progress over time as individuals work towards reducing their distress levels. Scaling questions also provide an opportunity to explore what would need to happen for them to move one step down on the scale, eliciting potential solutions and strategies.

5. Encouraging small steps and celebrating progress: SFT emphasizes the importance of recognizing and celebrating even small steps towards change. Therapists help individuals break down larger goals into smaller, manageable tasks. By focusing on incremental progress, individuals can experience a sense of achievement and motivation, which can further alleviate fear, anxiety, and depression.
6. Utilizing future-focused questions: SFT often incorporates future-focused questions to envision a preferred future. Therapists might ask individuals to imagine a time when they have successfully overcome their fear, anxiety, or depression related to the pandemic and explore what that would look like. This process helps individuals clarify their desired outcomes and motivates them to work towards those outcomes.
7. Promoting self-reflection and self-awareness: SFT encourages individuals to reflect on their own experiences, strengths, and abilities. By gaining a better understanding of their own reactions and coping mechanisms, individuals can develop a heightened sense of self-awareness. Therapists guide this process through open-ended questions and active listening, allowing individuals to gain insights and make meaningful connections.

It's important to note that Solution-Focused Therapy can be applied by trained professionals, such as therapists or counselors. While the principles and techniques of SFT can be useful, severe cases of fear, anxiety, or depression may require a more comprehensive treatment approach that may include medication and other therapeutic modalities.

Conclusions

Based on the survey, there were disturbing implications in terms of mental health among health care workers. Those surveyed showed increased levels of experiencing anxiety and stress, as well as reduced well-being while working during the COVID-19 pandemic. In order to ensure optimal mental well-being among medical professionals, it is advisable to continuously monitor and conduct research on similar topics among the indicated group. Additionally, as a preventive and remedial aspect, it is advisable to guarantee access to support and assistance programs within mental health.

Supplementary Materials

Figure 1: Respondents' self-perception according to the WHO-5 scale.

Figure 2: Stress among respondents according to the PSS-10 scale.

Figure 3: Anxiety among respondents according to the GAD-7 scale.

Author's contribution

DL-Z: Article concept and data collection; MW: Literature search ; MG: Analysis of results; PS: Translation and customization; IK-S: Supervision.

Funding Statement

Not applicable

Institutional Review Board Statement

Not applicable

Informed Consent Statement

Not applicable

Data Availability Statement

Not applicable

Acknowledgments

Not applicable

Conflict of Interest Statement

There is no conflict of interest among the authors.

References:

1. Giorgi G., Lecca L.I., Alessio F., et al. COVID-19-Related Mental Health Effects in the Workplace: A Narrative Review. *International journal of environmental research and public health*, 2020;17(21):7857. <https://doi.org/10.3390/ijerph17217857>
2. Hannemann J., Abdalrahman A., Erim Y., et al. The impact of the COVID-19 pandemic on the mental health of medical staff considering the interplay of pandemic burden and psychosocial resources-A rapid systematic review, 2022 *PLOS ONE* 17(2): e0264290
3. Rajkumar R.P. COVID-19 and mental health: A review of the existing literature. *Asian journal of psychiatry* 2020;52:102066. <https://doi.org/10.1016/j.ajp.2020.102066>
4. Tam C.W., Pang E.P., Lam L. C., Chiu H.F. Severe acute respiratory syndrome (SARS) in Hong Kong in 2003: stress and psychological impact among frontline healthcare workers. *Psychological medicine* 2004; 34(7):1197-1204.
5. Chigwedere O.C., Sadath A., Kabir Z., Arensman E. The Impact of Epidemics and Pandemics on the Mental Health of Healthcare Workers: A Systematic Review. *International journal of environmental research and public health* 2021;18(13): 6695. <https://doi.org/10.3390/ijerph18136695>
6. Shortage of Personal Protective Equipment Endangering Health Workers Worldwide. <https://www.who.int/news-room/detail/03-03-2020-shortage-of-personal-protective-equipment-endangering-health-workers-worldwide> (accessed 4.06.2023)
7. Bagcchi S. Stigma during the COVID-19 pandemic. *The Lancet. Infectious diseases* 2020;20(7):782. [https://doi.org/10.1016/S1473-3099\(20\)30498-9](https://doi.org/10.1016/S1473-3099(20)30498-9)
8. Scagliusi A.L. What Is Post-Pandemic Stress Disorder? How to Spot the Signs, and What to Do Next. <https://www.vogue.com/article/what-is-post-pandemic-stress-disorder> (accessed 4.06.2023)
9. Łaskawiec D., Grajek M., Szlacheta P., Korzonek-Szlacheta I. Post-Pandemic Stress Disorder as an Effect of the Epidemiological Situation Related to the COVID-19 Pandemic. *Healthcare (Basel, Switzerland)* 2022;10(6):975. <https://doi.org/10.3390/healthcare10060975>
10. Himde N. What to Know About So-Called Post Pandemic Stress Disorder. https://www.huffingtonpost.co.uk/entry/post-pandemic-stress-disorder_uk_60534a34c5b6e32eb4afa802 (accessed:4.06.2023).
11. Brady C., Fenton C., Loughran O., et al. Dublin hospital workers' mental health during the peak of Ireland's COVID-19 pandemic. *Irish journal of medical science* 2022; 1-10. Advance online publication. <https://doi.org/10.1007/s11845-022-03056-0>
12. AlKandari S., Salman A., Al-Ghadban F., Ahmad R. A Cross-Sectional Study to Examine the Psychological Impact of the COVID-19 Pandemic on Healthcare Workers in Kuwait. *International journal of environmental research and public health* 2022;19(17):10464. <https://doi.org/10.3390/ijerph191710464>
13. Gustavsson K., Goetz-Kundera Z., Flaga-Łuczkiwicz M., Wichniak A. Which Aspects of Work Safety Satisfaction Are Important to Mental Health of Healthcare Workers during COVID-19 Pandemic in Poland? *International journal of environmental research and public health* 2023;20(4):2870. <https://doi.org/10.3390/ijerph20042870>
14. Chatzittofis A., Karanikola M., Michailidou K., Constantinidou A. Impact of the COVID-19 Pandemic on the Mental Health of Healthcare Workers. *International journal of environmental research and public health* 2021;18(4):1435. <https://doi.org/10.3390/ijerph18041435>
15. Andreou E., Alexopoulos E.C., Lionis C. Perceived Stress Scale: Reliability and validity study in Greece. *Int. J. Environ. Res. Public Health* 2011;8:3287-3298. doi: 10.3390/ijerph8083287.
16. Antonijevic J., Binic I., Zikic O., Manojlovic S., Tosic-Golubovic S., Popovic, N. Mental health of medical personnel during the COVID-19 pandemic. *Brain and behavior* 2020;10(12): e01881. <https://doi.org/10.1002/brb3.1881>

17. Lu W., Wang H., Lin Y., Li L.. Psychological status of medical workforce during the COVID-19 pandemic: A cross-sectional study. *Psychiatry research* 2020;288:112936. <https://doi.org/10.1016/j.psychres.2020.112936>
18. Lai J., Ma S., Wang Y., et al. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. *JAMA network open* 2020;3(3):e203976. <https://doi.org/10.1001/jamanetworkopen.2020.3976>
19. Van Wert M. J., Gandhi S., Gupta I. Healthcare Worker Mental Health After the Initial Peak of the COVID-19 Pandemic: a US Medical Center Cross-Sectional Survey. *Journal of general internal medicine* 2022;37(5):1169-1176. <https://doi.org/10.1007/s11606-021-07251-0>
20. Mattila E., Peltokoski J., Neva M. H., Kaunonen M., Helminen M., Parkkila A. K. COVID-19: anxiety among hospital staff and associated factors. *Annals of medicine* 2021;53(1):237-246. <https://doi.org/10.1080/07853890.2020.1862905>
21. Grajek M., Szlacheta P., Sobczyk K., Krupa-Kotara K., Łabuz-Roszak B., Korzonek-Szlacheta I. Postpandemic Stress Disorder among Health Care Personnel: A Cross-Sectional Study (Silesia, Poland). *Behavioural Neurology* 2022; 1816537. <https://doi.org/10.1155/2022/1816537>
22. Yue L., Zhao R., Xiao Q., Zhuo Y., Yu J., Meng X. The effect of mental health on sleep quality of front-line medical staff during the COVID-19 outbreak in China: A cross-sectional study. *PloS one* 2021;16(6): e0253753. <https://doi.org/10.1371/journal.pone.0253753>
23. Carriero M. C., Conte L., Calignano M. The psychological impact of the Coronavirus emergency on physicians and nurses: an Italian observational study. *Acta bio-medica : Atenei Parmensis* 2021;92(2): e2021030. <https://doi.org/10.23750/abm.v92iS2.11575>
24. Vadi S., Shah S., Bajpe S. Mental Health Indices of Intensive Care Unit and Emergency Room Frontliners during the Severe Acute Respiratory Syndrome Coronavirus 2 Pandemic in India. *Indian journal of critical care medicine : peer-reviewed, official publication of Indian Society of Critical Care Medicine* 2022;26(1):100-107. <https://doi.org/10.5005/jp-journals-10071-24081>
25. Beck, J. S. (2011). *Cognitive behavior therapy: Basics and beyond*. Guilford Press.
26. Dobson, K. S., & Dozois, D. J. A. (Eds.). (2019). *Handbook of cognitive-behavioral therapies* (4th ed.). Guilford Press.
27. National Institute of Mental Health. (2021). *Depression*. Retrieved from <https://www.nimh.nih.gov/health/topics/depression/index.shtml>
28. World Health Organization. (2020). *COVID-19 and mental health: Key considerations*. Retrieved from <https://www.who.int/docs/default-source/coronaviruse/mental-health-considerations.pdf>
29. de Shazer, S. (1985). *Keys to solution in brief therapy*. W. W. Norton & Company.
30. de Shazer, S., Dolan, Y., Korman, H., McCollum, E., & Trepper, T. S. (2007). *More than miracles: The state of the art of solution-focused brief therapy*. Routledge.
31. Franklin, C., Trepper, T. S., Gingerich, W. J., & McCollum, E. E. (2012). *Solution-focused brief therapy: A handbook of evidence-based practice*. Oxford University Press.
32. Gingerich, W. J., & Peterson, L. T. (2013). Effectiveness of solution-focused brief therapy: A systematic qualitative review of controlled outcome studies. *Research on Social Work Practice*, 23(3), 266-283.
33. Kim, J. S., Franklin, C., & Tripp, T. (2017). Solution-focused brief therapy and the LGBTQ community: A framework for working effectively with diverse clients. *Journal of Marital and Family Therapy*, 43(1), 76-88.
34. Macdonald, A. J., & Macdonald, M. (2019). *Solution-focused therapy: Theory, research & practice*. Sage Publications.
35. O'Connell, B., Palmer, S., & Sharry, J. (2007). *Solution-focused brief therapy: 100 key points and techniques*. Routledge.