HIGH SCHOOL EDITION
Journal of Student Research
Volume 11 Issue 3 (2022)

The COVID-19 Pandemic's Effect on Medical Professionals' Occupational and Personal Lives

Ivy McKinney[1] and John Murnan[1#]

[1]Etowah High School
[#]Advisor

ABSTRACT

Burnout is common among all medical professionals. The rate of burnout prior to 2020 was relatively stable (Hasan, 2020). The onset of the pandemic was predicted to greatly increase burnout among medical professionals, particularly those on the frontline. The aim of this study was to determine how medical professionals have been affected by the pandemic, in addition to occupational changes due to their level of job satisfaction. Clough et. Al (2019) provided a template for survey questions, as well as a means for comparing post-pandemic scores to their pre-pandemic scores. We use quantitative data from the Stigma of Occupational Stress Scale for Doctors (SOSS-D) to evaluate stigma towards stress and burnout, in addition to qualitative interviews to have a better understanding of how they were overall affected by the pandemic. Contradicting the initial hypothesis, it was found that medical professionals have a decreased risk of burnout after the pandemic, yet they experience more discrimination at the workplace than from society itself. In addition to this, more young medical professionals are considering switching professions due to the pandemic effects than those who have more experience in their field. The most common reason was due to their concerns for the safety of family members.

Introduction

The COVID-19 pandemic has caused a devastating amount of economic and social disruptions throughout the world. These disruptions evidently resulted in an intensifying amount of distress, especially towards one of the most prominent groups during that time: medical professionals. Hasan, et al. (2020) found that healthcare workers had a reported stress factor of 80% during the crisis compared to the 6% they experienced prior to it. In fact, many stated that the fear of getting infected was only a part of their occupational stress, and what added to it was the belief that they were not getting paid enough for it. Occupational stress is the stress that stems from environmental demands or internal pressures (Quick & Henderson, 2016). The decrease in salaries plus the purchasing of PPEs (Personal Protective Equipment), masks, gloves, body suits, etc., has laid a huge financial burden on medical professionals, leading them to burnout (Hasan, et al., 2020).

By looking into how this group copes with their "new normal", one can further understand just how much of an impact the pandemic has made on them. Yet, the lack of social interaction with family members caused by their increased workload resulted in an increase in risks to their mental health. Jha et al. (2020) found that for these fears to go away, doctors need to be required to have more training on what to do for patients who are infected with the virus, so that they don't stress any more than they already do, as well as having a rational supply of safety measures. By collecting various burnout measures, the researcher may be able to determine to what extent medical professionals are affected by the pandemic and what they need to do in order to lessen the severity of it.

Literature Review

The satisfaction of one's job is an important factor that makes them less likely to leave. Occupational stress, which has increased during the pandemic, is the primary reason medical professionals leave their job. During the crisis such individuals were given an increased workload and were subjected to working in stressful conditions. Alrawashdeh et al. (2021) studied physicians in Jordan using both quantitative and qualitative approaches to understand the levels of stress they experience. They were able to obtain his results by using the Short Index of Job Satisfaction, a psychometric instrument that measures job satisfaction through five levels. Using this allowed them to conclude that the overall burnout of an individual is a primary factor of their job satisfaction, leading to his results that 57.7% of physicians were burnt out due to their occupational stress.

To keep themselves safe during this difficult time, medical professionals have made sure to adopt several cleanliness habits both inside and outside of the hospital. The most common of which are social distancing, washing hands, and the use of PPEs. However, what has been adopted by society, rather than only this group themselves, are face masks. These have been known as part of a comprehensive strategy of measures to suppress the transmission of COVID-19 and save the lives of others. For instance, only 66% of doctors were wearing masks inside the hospital during the time when they could have come in contact with an infected patient (Jha et al., 2020). Given this was at the start of the pandemic, the number of doctors wearing masks has significantly increased since then. Deshpande et al. (2021) stated that 100% of their participants, including doctors, wore face masks while working with patients. Adopting such cleanliness measures has led to their stress lessening. However, even with these safety measures, this group still reports an increase in distrust, stress, and fear overall providing modifications to their behavior, usually from fear of infection by respiration of aerosol, touching patients, their hands, and their clothes (Jha et al., 2020). Yet, the severity of these situations lessens as more doctors protect themselves using masks and such.

In most cases, especially during a pandemic, people take extreme measures to cope with the anxiety that emerges. One of the many fears during the COVID-19 crisis is not only receiving the virus themselves but transmitting it to their family members as well. Using a qualitative case study approach, Karakose & Malkoc (2021) created a semi-structured survey to collect data investigating the psychological effects medical doctors in Turkey experience from treating patients with COVID-19 during the pandemic. They found that the fear of death, as well as the fear of passing on the virus to their family members, were major psychological effects experienced by these doctors. The most common strategies to cope with these fears were social distancing, hygiene rules, and religion (such as praying, etc.). They found that even after taking all these precautions, they often seek increased support from and connection to their family members. However, because these doctors take extreme measures, so that they do not spread the disease to them, such as living in a hotel room or a different house, this is difficult for them. This brings us to the question of how else they ease their anxiety.

Nam & Yang (2021) focused on one of the most vulnerable groups during the COVID-19 pandemic: health care professionals, and its effects of their mental health. Using semi-structured interviews, they were able to determine the various stress this group had in pandemic calamity. The commonly used strategy of "social distancing" ironically makes the situation worse, for it blocks the protective factor of relieving one's mental health. Therefore, they stated that psychological interventions should be used more often. However, what they do not take into consideration is that many medical professionals despise the thought of going to such treatments. Clough et al. (2019) investigated the psychology behind the Stigma of Occupational Stress Scale for Doctors (SOSS-D). This was an instrument of measure developed by the authors to measure stigma towards stress, as well as burnout more broadly. They found that burnout is common among medical professionals, yet they still refuse to seek help despite the work field's consequences. The issue with this group's stigma needs to be addressed, those including the fact that they are uncomfortable with moving from a doctor to patient role, a workplace where emotion is often frowned upon, and an industry that pushes medical professionals to be superior to others and act as their own "caregiver." However, West (2020) found that physicians reported higher levels of resilience than the general working population in the U.S. But occupational stress is still a

serious issue in medical professionals, especially during the COVID-19 pandemic where anxiety has significantly increased.

Prior to my experiment, I hypothesized that medical professionals are one of the groups that are most at risk of catching and transmitting the virus, for they are working directly with potential patients daily. This led me to my research question: how has the COVID-19 pandemic affected the occupational and personal lives of medical professionals? Exploring this will make way to close the gap on whether this group chooses to follow through with the hardships of their job, or if they would change careers, whether it is another form of healthcare or different pathway altogether, to ensure the safety of themselves and others. Therefore, this study aims to determine how this group has been affected by the pandemic, including changes in occupation due to their level of job satisfaction.

Method

In order to test my hypothesis, I used both a quantitative and qualitative approach to ensure the most optimal results. This method would accurately find how the COVID-19 pandemic has affected medical professionals' lives, both personally and occupationally, due to its ability to compare quantitative data pre-pandemic and post-pandemic. Both quantitative and qualitative methods have been performed to determine doctors' well-being considering their stressful careers, however, not many have been done since the emergence of COVID-19. These methods were best because they were able to use prior experiments to their advantage and had a targeted population, that being medical professionals.

A similar study conducted by Clough et. al aimed to determine the psychometric properties of doctors by developing an instrument to measure stigma related to occupational burnout among the group (2019). The Stigma of Occupational Stress Scale for Doctors (SOSS-D) consists of 14 statements, each to be answered on a seven-point agreement scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), overall aiming to evaluate stigma towards stress and burnout, regardless of their personal experiences, and measuring three core aspects of stigma. The study was conducted as an online survey, with participants recruited through notices originally placed in medical journals and college newsletters, as well as throughout social media.

Starting with the quantitative portion of my study, I developed a survey through Microsoft Forms, initially requiring their area of expertise and years of experience they had in their field. Before continuing, all participants signed an informed consent form to take part in the study and were informed of what they were being asked to do as well as what their rights were if they chose to follow through. All participants who agreed to follow through with the survey were ensured anonymity due to the automatic replacing with random identification numbers. They were then given a series of 6 statements derived from the SOSS-D and asked to choose a number ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) that best reflects their agreement with the statements. Next, they were asked to rank 4 answer choices, greatest to least, as their reasons for fear during the COVID-19 pandemic, that being infecting family members, spreading of the disease, complications of the disease, and becoming a carrier. Similarly, they were asked to rank 4 answer choices, greatest to least, as their reasons for fear during interaction with a suspect or confirmed COVID-19 patient, that being fear of infection from themselves, touch, clothing, and respiration of aerosol, derived from Jha et. Al (2020). Lastly, they were told to answer whether they have considered switching professions during the pandemic, and, if they chose yes, to state if they have considered no longer working in the same area of expertise, working in healthcare, and/or working altogether.

Participants throughout this study were recruited through personal, familial connections, who then passed on the survey to their coworkers, all of whom were registered, medical professionals. However, a large quantity consisted of nurse practitioners, physician assistants, and physicians. Seeking specific subjects with different occupations allows me to have the best understanding of how most medical professionals are affected by the pandemic, especially those who are dealing with potential COVID-19 patients daily.

Subjects participating in the qualitative portion of this study were chosen at random in order to ensure the most honest results. I interviewed several participants asking them to expand on the questions given to them throughout the survey. If they had worked in the same area of expertise both before and after the pandemic, they were asked to compare the two experiences considering burnout, and what specifically caused them stress during the pandemic while working. This allowed me to have a better understanding of how the pandemic affected their lives and added to the data taken from the online survey.

The data from the online survey was statistically analyzed to find a significant causation between the COVID-19 pandemic and the lives of medical professionals. Using a point biserial correlation test and searching for further correlations, the data can show what caused by the pandemic causes an increase in burnout throughout this group, the most and least frequent fears during the pandemic that contributes to their stress, and the opinions this group has on medical professionals who experience occupational stress or burnout. In addition, the data can show the frequency of the consideration of switching professions due to the pandemic, and to what extent they would go to when it comes to leaving their profession, i.e., leaving their area of expertise, healthcare, or career altogether.

Results

Table 1. Percentage of those who agree/disagree with the occupational stress/ discrimination item #6 from the SOSS-D

Original SOSS-D statement	Percent of respondents
Somewhat to Strongly Agree	42.65%
Strongly Disagree to Neither Agree nor Disagree	57.25%

Table 1: This table shows the percentage of those who agreed/disagreed with the SOSS-D statement #6 “a doctor who is experiencing occupational stress or burnout is more likely to experience discrimination or prejudice”, showing that 43% of participants agreed with the statement somewhat (5) to strongly agree (7).

The revised SOSS-D created by Clough et. al consisted of 11 items measuring three aspects of stigma on seven-point agreement scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) (2019). The core aspects of stigma consisted of perceived structural stigma, personal stigma, and perceived other stigma. The derived SOSS-D consisted of 6 items measuring the same aspects of stigma on seven-point agreement scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Answers were then calculated to determine the percentage of respondents who agreed, to a certain extent, or disagreed, to a certain extent, or neither agreed nor disagreed with the statements provided to them.

While other statements were provided addressing personal stigma and perceived other stigma, the number of participants who reported that they agreed, to a certain extent, with the statement above (43%) was higher than any other statement provided to them.

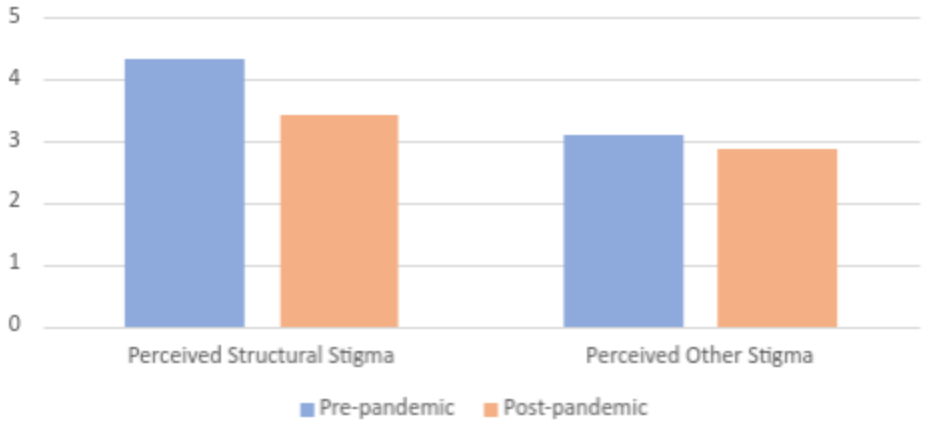

Figure 2. Comparison of average SOSS-D scores prior to/after the COVID-19 pandemic

Figure 2: This graph shows the mean scores of perceived structural stigma statements (#5,6,8) and perceived other stigma statements (#2,4). Comparing both mean scores pre-pandemic and post-pandemic allows for the evaluation of trends throughout doctors' stigma and the effect the pandemic had on such stigma.

Clough et. al (2019) provided descriptive statistics on three stigma factors for their sample of doctors. After taking the average of all perceived structural stigma statements, #3, 5, 6, 8 & 9, she reported a mean score of 4.33. After taking the average of all perceived other stigma statements, #2, 4 &10, she reported a mean score of 3.10. These scores reveal that the average response to perceived structural stigma statements ranges from "neither agree nor disagree" to "somewhat agree", showing that participants somewhat agree that their occupation places restrictions on opportunities for those who struggle with mental health problems. In addition, they show that the average response to perceived other stigmas statements ranges from "somewhat disagree" to "neither agree nor disagree", showing that participants somewhat disagree that society will discriminate against them solely due to their issues with mental health. Based on the data, we can identify that doctors have more fear towards stigma when it comes to their workplace/establishment rather than society itself.

In this study, I selected three out of the five statements focusing on perceived structural stigma, and two out of the three statements concerning perceived other stigma. Because I took only one out of the three statements concerning personal stigma, I did not include it in the final analysis. For perceived structural stigma, I found a mean score of 3.43. The perceived other stigma statements mean score reported to be 2.87.

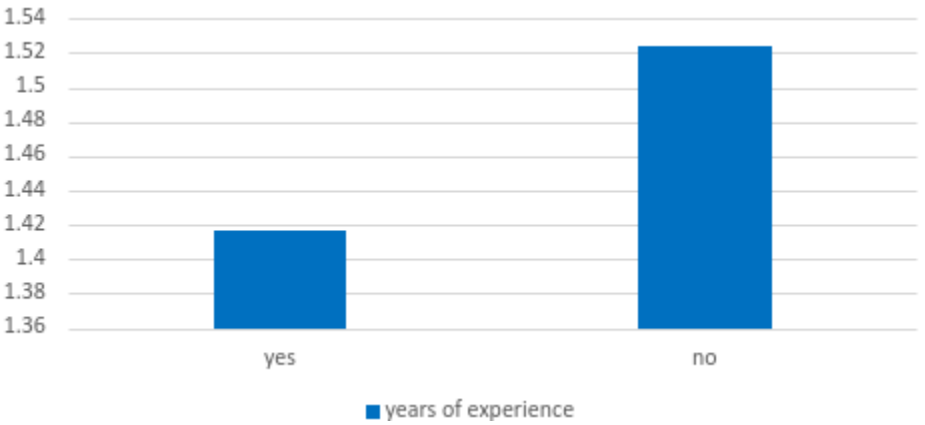

Figure 3. Correlation between years of experience and the consideration of switching professions

Figure 3: This graph represents the correlation between the participants' years of experience in the medical field and the consideration of switching professions due to the COVID-19 pandemic. The years of experience are represented by a 1 for 1-10 years, a 2 for 11-20 years, a 3 for 21-30 years, and a 4 for 31+ years.

Participants were required to respond to the number of years of experience they had in their particular field and were later asked to state whether they have considered switching professions due to the COVID-19 pandemic. After organizing all "yes" and "no" answers with their years of experience responses, numbered 1-4, an average was taken for each group. For the "yes" group, I reported an average of 1.42, meaning the average years of experience the participants had in their field was between 1-10 years. For the "no" group, I reported an average of 1.52, meaning that the average years of experience participants had in their field was also between 1-10 years, but higher than that for the "yes" group, overall showing that the number of participants who responded no to considering switching professions have had, on average, more experience in the field.

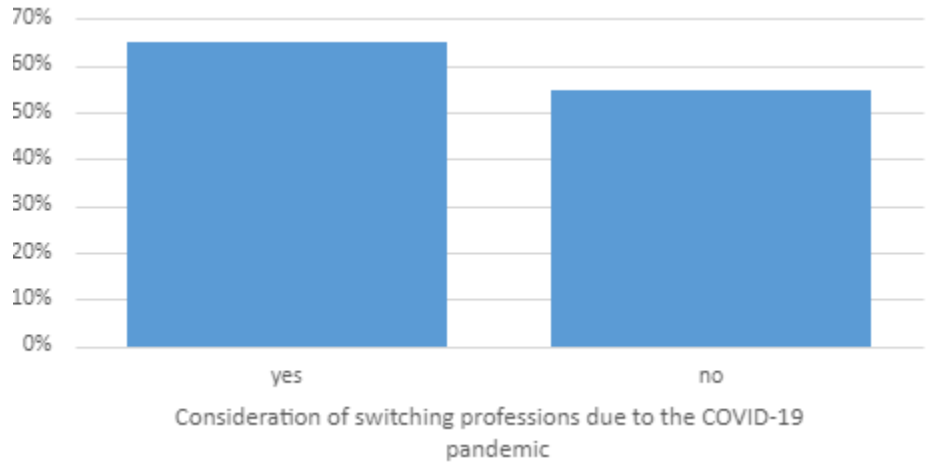

Figure 4. Correlation between fear of infecting family members and the consideration of switching professions

Figure 4: This graph represents the correlation between the consideration of switching professions due to the COVID-19 pandemic and whether the participants' greatest fear was infecting family members.
Before creating this graph, a point biserial correlation calculator was used to determine the significance of these two variables. The consideration of switching professions was represented by a 0 for "no" and a 1 for "yes", while the participants greatest fear during the pandemic was represented by a 4 for "infecting family members", 3 for "complications of disease", 2 for "rapid spread of disease", and 1 for "becoming a carrier." I reported a p-value of 0.55, showing that the correlation is significant.

After finding that there was a correlation, I reported that 65% of participants who answered that they have considered switching professions also said that their greatest fear during the pandemic was infecting their family members, while 55% of participants reported the same greatest fear, even though they have not considered switching professions.

Discussion

Before beginning this study, I assumed that medical professionals had an increased risk of burnout after the COVID-19 pandemic. Because they are working with potential patients daily, meaning they have a higher chance of becoming a carrier of the disease, I hypothesized that I would find higher levels of occupational burnout. However, this was not supported by the study. The decrease in mean scores post-pandemic shows that doctors are at less risk of experiencing discrimination both socially and occupationally from mental health issues. While neither score dropped a point or

greater, the data shows how medical professionals are at less risk of dealing with stigma at their workplace and from society. Yet, the data from this study supported Clough's (2019) findings, with the mean perceived structural stigma number being higher than the perceived other stigma number, revealing that this group stayed consistent over time from feeling more likely to be discriminated against at the workplace due to their mental illness than from society.

Prior to analyzing my results, I intended to use a similar measure as Clough et. Al (2019), consisting of descriptive statistics on the three stigma scales. Even though no percentages were given in their study, I was still able to compare my results using stigma factors. Participants agreed with SOSS-D statement #6 more than any other statement given to them and agreed with perceived structural stigma statements more than any other stigma statements. This, as well, is similar to Clough's pre-pandemic scores (2019), with the perceived structural stigma statement scores being statistically higher than any other statements, showing consistency throughout time. Because participants endorsed the strongest rating for perceived structural stigma, it can be shown that the occupational consequences of mental health disclosures identify what prevents this group from seeking professional help. This effect will be important when addressing such matters for future doctors in training, especially when career progression considerations occur.

Yet, many of these individuals will not even have the chance to experience career progression, for many consider switching professions earlier than those who have more experience in their field. Because the average number of years of experience in the field was lower for those who responded "yes" to considering switching professions, more young medical professionals are giving up on their ability to go through with their everyday job than those who are older. The physical and mental toll COVID-19 has taken on this group has become far too draining, leading to those who haven't experienced many years in the field considering switching professions due to the pandemic. This effect is significant because more people may drop the idea of going into the medical field just because they don't want to experience the pandemic's effects, causing the number of medical professionals in the world to lessen. In addition, if less are willing to seek professional help, the consequences will result in either a shortage of doctors, or those who experience more burnout, leading them to insufficiently complete their job.

The measures one goes to in order to keep their family safe can be extreme, especially when it comes to a deadly virus. Due to the pandemic, most participants, approximately 56%, reported that their greatest fear was infecting their family members with the disease. The numbers were significantly high when they reported that they have also considered switching professions, proving that there is a correlation between the two. Therefore, if a participant has reported that they have considered switching professions, it can be assumed that a big part of that decision was due to their family members' safety. Even with all the extreme measures they take to keep their loved ones safe, many decide that the safest decision is to leave their workplace where they are potentially coming in contact with the virus daily.

In the qualitative portion of my study, I interviewed several doctors asking them various questions regarding burnout and stress from the pandemic. To ensure anonymity, no names will be revealed. All of the following quotes came from one individual. One of the main reasons doctors take up their job is because they love helping people as much as possible, so when they are not able to see their patients as often as before the pandemic, it can cause dissatisfaction. In order to interact with their patients, they "are required to wear a gown, goggles, gloves, an N95, and respirators" (Anonymous, 2022). The inability to greet their patients without gowning up causes a lot of burnout among this group, for the main reason they chose to go into the medical field now has strict limitations. Not only do social restrictions impact their well-being, but the financial aspects as well. In hospitals, "attendings have had to sacrifice their salaries because elective surgeries and procedures have been canceled for over a year" (Anonymous, 2022). The source of money for these experienced doctors is from surgeries that are no longer labeled as major compared to treating COVID-19 patients, leading to their cancellation/postponement. In addition to this, the external pressure of having to "work twice as hard, see twice as many patients for the same pay and the same amount of time ultimately causes burnout" (Anonymous, 2022). Due to a limited number of resources and time to help their patients, medical professionals' stress is constantly increasing, making their everyday job harder, leading them to leave their job or deal with burnout at an unhealthy rate.

Limitations

While some of the study did prove to be significant, it could have been due to its limitations. Of the 68 participants in the sample size, 50 were nurse practitioners. Because many nurses deal with COVID patients daily, this could have easily influenced the data, making it out to be more significant than it really is. Nurse practitioners who experienced a higher level of stress and burnout have a greater impact on total results because of their large percentage in the overall number of participants, therefore, potentially, skewing the data to be more significant. In the future, more variety in the occupation of participants would minimize the impact of these results that reflect increases in burnout caused by the stressful nature of the nursing profession. In addition to a small amount of variety, the sample size could have been somewhat harmful for my findings. Hypothetically, if it were difficult to gather many medical professionals who don't work in nursing occupations, a larger sample size would lessen the impact of these results coming from the nursing group in particular.

The timing of this study could also influence the results. Given the study was conducted about 2 years after the COVID-19 pandemic started, participants could be much more relaxed than if it was right at the height of the pandemic. This could have impacted the results by lessening their scores on the SOSS-D scale statements, whereas if the study was conducted in the midst of the pandemic, participants may have been more sincere with their responses, revealing their true opinions on stigma and burnout.

The last limitation could have simply been human error. Even though participants were asked to answer questions truthfully, there is a likely chance that some failed to do so. Also, participants could not have been entirely truthful in their agreement with the SOSS-D statements, even though many options were given for them to choose which best reflects their choice.

Conclusion

Stress is a normal feeling for everyone, whether it's caused by work or personal problems. However, in this case, this feeling was caused by a global pandemic, arguably one of the worst things that can happen to an individual's mental health, especially medical professionals. It can cause fear leading to extreme measures being taken, such as living in a different house from their family, so that the disease doesn't spread to their loved ones, ultimately causing burnout (Karakose, 2021). In fact, most medical professionals' greatest fear caused by the pandemic is infecting their family members, overall increasing the chance of them leaving their job.

Even though medical professionals are at a high risk of stress and burnout due to the pandemic, it has been shown that this group is at less risk of burnout after the pandemic than before. Yet, the main cause of burnout has remained consistent over time, that being discrimination experienced in the workplace and its consequences. Experiencing prejudice at one's job causes this group to feel as if it's not their place to seek professional help and instead act as their own caregiver. While occupational stress is a serious issue and evident in medical professionals, help-seeking within this group is less than optimal (Clough, 2019). In fact, it's gotten to the point where the less experienced in the medical field have considered switching professions more than those who have a greater amount of experience. Because COVID-19 has increased the workload and stress of this group, more people leave healthcare for the benefit of their mental health. In the future, this could cause serious damage, for fewer people will want to go into the medical field, leaving the world with a shortage of doctors.

COVID-19 has made a huge impact on medical professionals' lives. While many believe the simple solution to their affected mental health is to speak to a therapist or seek more help, what they do not realize are the occupational consequences of doing so. Doctors who are feeling worn out by the pandemic's tiresome effect are more likely to experience prejudice from their coworkers, leading to their decision to bottle up their feelings, resulting in burnout. In fact, with their increased workload, this group rarely has the time to seek professional help, meaning finding alternative solutions for their stress is crucial for their well-being. Simple support and greater appreciation for public health

workers and medical professionals can help even in the slightest, so that they know they aren't being discriminated against when they are in stressful situations. The findings of this study show that medical professionals' mental health needs to be taken care of, even if it means moving their role from doctor to patient.

References

Alrawashdeh, H. M., Al-Tammemi, A. B., Alzawahreh, M. K., Al-Tamimi, A., Elkholy, M., Al Sarireh, F., Abusamak, M., Elehamer, N. M. K., Malkawi, A., Al-Dolat, W., Abu-Ismail, L., Al-Far, A., & Ghoul, I. (2021). Occupational burnout and job satisfaction among physicians in times of COVID-19 crisis: a convergent parallel mixed-method study. *BMC Public Health*, *21*(1), 1–18. https://doi-org.proxygsu-sche.galileo.usg.edu/10.1186/s12889-021-10897-4

Amin, S. (2020). The psychology of coronavirus fear: Are healthcare professionals suffering from corona-phobia? *International Journal of Healthcare Management*, *13*(3), 249–256. https://doi-org.proxygsu-sche.galileo.usg.edu/10.1080/20479700.2020.1765119

Clough, B. A., Ireland, M. J., & March, S. (2019). Development of the SOSS-D: a scale to measure stigma of occupational stress and burnout in medical doctors. *Journal of Mental Health*, *28*(1), 26–33. https://doi-org.proxygsu-sche.galileo.usg.edu/10.1080/09638237.2017.1370642

Deshpande, S. H., Waghmare, S., Jain, H., & Deshpande, W. H. (2021). Difficulties Faced by the Healthcare Workers Wearing Personal Protective Equipments in COVID-19 Pandemic during Summers of Mumbai City. *Journal of Clinical & Desagnostic Research*, *15*(8), 5–8. https://doi-org.proxygsu-seq1.galileo.usg.edu/10.7860/JCDR/2021/48514.15192

Hasan, S. R., Hamid, Z., Yaqub, M. D., Ahmed, S. R., & Aftab, M. A. (2020). Emotional and Financial Stress in Doctors Working in the COVID-19 Crisis. *Biomedica*, *36*(4), 384. https://doi-org.proxygsu-sche.galileo.usg.edu/10.51441/biomedica/5-84

Jha, R., Verma, R., Kishore, A., Rana, R., Barnwal, R., Singh, H., & Kumar, D. (2020). Mapping fear among doctors manning screening clinics for COVID19. Results from cloud based survey in Eastern parts of India. *Journal of Family Medicine & Primary Care*, *9*(12), 6194–6200. https://doi-org.proxygsu-sche.galileo.usg.edu/10.4103/jfmpc.jfmpc_1143_20

Karakose, T., & Malkoc, N. (2021). Psychological impact of the COVID-19 pandemic on medical doctors in Turkey. *Social Behavior & Personality: An International Journal*, *49*(1), 1–10. https://doi-org.proxygsu-sche.galileo.usg.edu/10.2224/sbp.9890

Parasher, V., Shekhawat, K. K., Bhati, S., & Sharma, M. (2021). Behavioural changes in the personal and professional lives of doctors during the COVID-19 pandemic: A cross-sectional observational study. *Journal of Clinical & Diagnostic Research, 15*(3), 21-24. https://doi-org.proxygsu-sche.galileo.usg.edu/10.7860/JCDR/2021/48153.14645

Quick, J. C., & Henderson, D. F. (2016). Occupational Stress: Preventing Suffering, Enhancing Wellbeing. *International journal of environmental research and public health*, *13*(5), 459. https://doi.org/10.3390/ijerph13050459

Seok Hyun Nam, & Jong-Chul Yang. (2021). COVID-19 pandemic and mental health of vulnerable two groups: Developmental trauma of the child-adolescents and work disaster of health care workers. *Chonnam Medical Journal*, *57*(1), 7–12. https://doi-org.proxygsu-sche.galileo.usg.edu/10.4068/cmj.2021.57.1.7