



## Original Article

# Stigmatization of healthcare professionals during the COVID-19 pandemic: their psychosocial states and the factors affecting them

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### Abstract

**Objectives:** It is assumed that healthcare professionals are directly or indirectly subjected to stigma during the COVID-19 pandemic, impacting their psychosocial health. This study aimed to evaluate the psychosocial status of healthcare professionals during the COVID-19 pandemic and examine the factors affecting their exposure to stigma.

**Methods:** This cross-sectional study included all healthcare professionals (n=1132) working in primary and secondary healthcare institutions in Malatya Province. Descriptive questions were asked to measure the stigma experienced by healthcare professionals during the COVID-19 outbreak. The Zung Self-Rating Depression Scale and Insomnia Severity Index were used to evaluate psychosocial health status.

**Results:** Of the participants, 68.7% stated that they were exposed to stigma because they are healthcare professionals. The findings indicated that 72.1% of those who felt stigmatized for being a healthcare professional suffered from moderate or severe depression, and 66.9% suffered from subthreshold or moderate insomnia. When their current health state was compared with that before the pandemic, 25.0% said that it became worse/much worse.

**Conclusion:** The results of this study indicated that most participants had been exposed to stigmatization because they are healthcare professionals. The participants who were exposed to stigma were found to suffer more from depression and insomnia. When their current health state was compared with that before the pandemic, one of every four participants stated that it became worse/much worse.

**Keywords:** COVID-19 pandemic; depression; healthcare professionals; insomnia; stigma.

The novel coronavirus disease 2019 (COVID-19) first broke out in Wuhan and is characterized by respiratory symptoms (fever, cough, and dyspnea). Studies on minor groups of patients have demonstrated that COVID-19 is caused by a virus called SARS-CoV-2. The outbreak first occurred in a seafood market and livestock bazaar. Thereafter, COVID-19 started spreading within Wuhan and then to the provinces in Hubei and other

states in the People's Republic of China and other countries.<sup>[1]</sup> During the pandemic, medications to treat COVID-19, existing treatment protocols, infection control, effective vaccination, and rates of treatment in each country were the main focal points.<sup>[2,3]</sup> The psychosocial impact of the pandemic remained in the background at this stage, but its permanent marks may be estimated by considering the effects of other pandemics

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**What is presently known on this subject?**

Health stigma includes negative, disparaging, hostile, devaluing, and discriminatory attitudes toward a person or group with a certain illness. Particularly in infectious diseases, a cause associated with the disease, people are stigmatized. Due to the COVID-19 pandemic, some featured groups became more exposed to stigma. Consistent with the literature, the results of this study indicated that approximately 69% of healthcare workers were stigmatized. These individuals were also found to suffer more from depression and insomnia during a pandemic.

**What does this article add to the existing knowledge?**

Stigma results in exposure to discrimination and status deprivation.

**What are the implications for practice?**

Furthermore, stigma experiences, such as discrimination, may unfortunately last for a long time, even after the end of a pandemic. It is important for healthcare professionals to avoid being stigmatized, protect their mental health, and develop strategies for this purpose, not only during the pandemic but also in the future. These findings show that stigma significantly affects an individual's mental health and quality of life.

such as SARS and MERS.

The restriction measures to control the infection during the pandemic, including but not limited to "quarantine," "social distance," and "self-isolation," were thought to have negative impacts on mental health. In particular, increased loneliness and decreased social interactions were considered the most important risk factors for various mental disorders such as schizophrenia and major depression.<sup>[4]</sup>

The effects of the COVID-19 pandemic on mental health and its outcomes were considered serious for at least four groups of people: (i) those directly or indirectly in contact with the virus, (ii) those defenseless to biological or psychosocial stress factors (those with mental health issues), (iii) healthcare professionals (due to a higher exposure level), and (iv) those following the news through a number of media.<sup>[5]</sup>

Healthcare professionals in charge during the pandemic were called "health fighters" and were in the highest-risk group for infection. They were subjected to prolonged and troubling shifts to meet the needs during the pandemic.<sup>[6]</sup> Notably, doctors and nurses in the emergency room and resuscitation department were at a high risk.<sup>[4]</sup> The COVID-19 pandemic affected not only their physical health but also their mental health and well-being.<sup>[7,8]</sup> This situation became the main topic among psychiatrists and other mental healthcare professionals and required many investigations.<sup>[9]</sup> Psychiatry clinics worldwide have concentrated on providing healthcare services to people suffering from the psychosocial results of the pandemic rather than those with mental health issues.<sup>[10]</sup>

It is plausible that healthcare professionals will suffer from fatigue and mental burnout when the pandemic ceases.<sup>[4]</sup> Previous studies have reported that many people exhibited avoidance behaviors even after quarantine measures were canceled.<sup>[7]</sup> A study conducted on hospital employees showed that posttraumatic stress disorder might pose a risk even after 3 years of quarantine. In particular, healthcare professionals that treated patients diagnosed with or suspected to have COVID-19 were defenseless to both high infection risk and

mental health issues.<sup>[11]</sup> Although it has been emphasized to care for the mental health of healthcare professionals during COVID-19 campaigns,<sup>[10,12,13]</sup> studies discussing how the mental health of such people was affected by the pandemic are scarce. Considering that perceived stress is a predictor of mental health,<sup>[14,15]</sup> it is possible to say that stigma indirectly affects mental health via stress.<sup>[16]</sup> Furthermore, a study conducted on nurses has suggested that stigma is associated with stress.<sup>[17]</sup>

Social stigma in terms of health is defined as a negative attitude to a person or group of people who share certain characteristics and have a specific disease.<sup>[7]</sup> It is a significant subject to consider among healthcare professionals dealing with infectious diseases. It was reported that approximately 20% of the healthcare professionals who fought against SARS in Taiwan felt stigmatized and discriminated in their neighborhood.<sup>[18]</sup> In another study, 49% of the healthcare professionals who fought against SARS in Singapore felt socially stigmatized because of their profession.<sup>[19]</sup> Similarly, Korean nurses who worked with patients with MERS-CoV demonstrated that they were isolated from their families or friends during the pandemic and forbidden to use elevators in their apartments, and their children were not allowed to continue their study, including kindergarten.<sup>[20]</sup> Based on all these findings, the stigmatization of healthcare professionals fighting against pandemic is thought to directly affect their psychological and mental health via stress. This study aimed to discuss the psychosocial status of healthcare professionals during the COVID-19 pandemic, their exposure to stigma, and other factors affecting them.

## Materials and Method

### 1. Study Type and Sample

This descriptive and cross-sectional study included healthcare professionals that have been in charge at primary and secondary healthcare institutions in the province of Malatya, Türkiye, since 2020. Data were obtained offline between June and October 2020 using the web-based smartphone software from the healthcare professionals who agreed to participate in the study. No sample selection was performed as the aim of the study was to reach the whole intended population. About 84% of this population (n=1132) was included in the study.

### 2. Study Protocol and Ethics Committee Approval

This study involving human participants was approved by the institutional and national research committee and conducted in accordance with the principles of the Declaration of Helsinki 1964 and its later amendments or comparable ethical standards. First, permission was obtained from the Ministry of Health (2020-06-01T14-25-12). Ethical approval was obtained from the İnönü University Institutional Review Board for non-interventional studies (2020/842). The STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guideline was used to assess the likelihood of bias and overall quality for this study.<sup>[21]</sup>

### 3. Instruments

Literature search revealed no specific tools or scales to measure COVID-19-related stigma. The first part of the questionnaire contains six descriptive questions developed by the researchers in accordance with the literature.<sup>[22,23]</sup> These questions were aimed at measuring the stigma experienced by healthcare professionals during the COVID-19 pandemic. The answers to the questions were categorized as “yes–no–partially.” (My friends/neighbors/relatives want me to stay away from them – My friends/neighbors/relatives want me to stay away from their children – I feel stigmatized for being a healthcare professional etc.) In the second part, the Zung

Self-Rating Depression Scale (ZDRS) was used to evaluate the level of depression of the healthcare professionals based on the stress caused by the COVID-19 pandemic. It is a self-rating scale developed by Zung in 1965<sup>[24]</sup> and produces successful outcomes to demonstrate that masked depression manifests itself through physical complaints. It measures emotional, physiological, psychomotor, and psychological symptoms of depression. The ZDRS consists of 20 questions, 10 negative and 10 positive. The questions are rated on a four-point Likert scale. Questions 14, 16, 17, 18, and 20 are reversed. Gencdogan and Oren<sup>[25]</sup> evaluated the reliability and validity of the Turkish version. In the second part, the Insomnia Severity Index was used to determine the level of insomnia symptoms. Boşan and colleagues<sup>[26]</sup> established the reliability and validity of the Turkish version of this index. A total score of 0–7 indicates “no significant insomnia”; 8–14, “subthreshold insomnia”; 15–21, “moderate severity insomnia”; and 22–28, “severe insomnia.” Although this test was intended to determine the level of insomnia symptoms, it may also be used in the screening of normal society and clinical evaluation of insomnia.<sup>[27]</sup> The independent variables of the study were sociodemographic characteristics and descriptive questions on the COVID-19 pandemic. On the other hand, the dependent variables were the questions examining the stigma about COVID-19, ZDRS, and Insomnia Severity Index.

**Table 1. Sociodemographic characteristics of participants**

| Sociodemographic features             | n   | %    |
|---------------------------------------|-----|------|
| Gender                                |     |      |
| Female                                | 658 | 58.1 |
| Male                                  | 474 | 41.9 |
| Age (Years)                           |     |      |
| ≤ 25                                  | 97  | 8.6  |
| 25-34                                 | 415 | 36.7 |
| 35-44                                 | 453 | 40.0 |
| 45-54                                 | 145 | 12.8 |
| ≥ 55                                  | 22  | 1.9  |
| Number of children                    |     |      |
| No children                           | 333 | 29.4 |
| 1                                     | 238 | 21.0 |
| 2                                     | 388 | 34.3 |
| 3 and more                            | 173 | 15.3 |
| Job Status                            |     |      |
| Physician                             | 224 | 19.8 |
| Nurse \ midwife                       | 109 | 9.6  |
| Medical technician (high school)      | 110 | 9.7  |
| Medical technician (associate degree) | 173 | 15.3 |
| Other                                 | 516 | 45.6 |
| Working time (years)                  |     |      |
| ≤ 5                                   | 269 | 23.8 |
| 6-10                                  | 281 | 24.8 |
| 11-15                                 | 189 | 16.7 |
| 16-20                                 | 184 | 16.3 |
| 21-25                                 | 125 | 11.0 |
| ≥ 26                                  | 84  | 7.4  |
| Working unit                          |     |      |
| Provincial Health Directorate         | 76  | 6.7  |
| 112 Emergency                         | 92  | 8.1  |
| District FHC\CHC                      | 322 | 28.4 |
| Training and Research Hospital        | 339 | 29.9 |
| ODHC                                  | 32  | 2.8  |
| District State Hospital               | 271 | 23.9 |

FHC: Family Health Center; CHC: Community Health Center; ODHC: Oral and Dental Health Center.

### 4. Statistical Analyses

Statistical analyses were conducted using IBM SPSS Statistics v25.0 (Statistical Package for Social Sciences, Inc., Chicago, IL, USA). Number (n) and percentage (%) were used to express descriptive data. A chi-squared test was used to compare qualitative variables.  $p \leq 0.05$  was considered to indicate statistical significance.

### Results

Among the study participants, 58.1% (n=658) were women and 41.9% (n=474) were men. The age group with the highest percentage of participants (40%, n=453) was 35–44 years, and 34.3% (n=388) of them have two children. Of the participants, 19.8% (n=224) were medical doctors; 9.6% (n=109), midwives/nurses; 9.7% (n=110), medical technicians; 15.3% (n=173), health technicians; and 45.6% (n=516), other healthcare professionals (biologist, pharmacist, administrator, cleaner, dietitian, and psychologist). Majority of the participants (24.8%, n=281) had a length of service of 6–10 years, and 29.9% (n=339) of them were working in training and research hospitals; 28.4% (n=322), district family health centers and community health centers; and 23.9% (n=271), district state hospitals (Table 1).

Considering the participants' knowledge on COVID-19 and its management, 29.6% (n=335) stated that they had separate living spaces/homes from their families due to the pandemic. When their current health state was compared with that before the pandemic, 21.9% (n=248) stated that it became

**Table 2. Information of participants on COVID-19 management**

| Pandemic Management Features   | (n)  | %    |
|--|------|------|
| Separating the living space / home with the family due to the pandemic |      |      |
| Yes  | 335  | 29.6 |
| No   | 797  | 70.4 |
| Chronic illness condition  |      |      |
| Yes  | 210  | 18.6 |
| No   | 922  | 81.4 |
| Comparison of health status (pre vs during COVID-19 pandemic)          |      |      |
| Better   | 55   | 4.9  |
| Almost unchanged   | 794  | 70.1 |
| Worse  | 248  | 21.9 |
| Much worse   | 35   | 3.1  |
| Risky contact with COVID-19 patients                                   |      |      |
| Yes  | 600  | 53.0 |
| No   | 532  | 47.0 |
| Getting diagnosed with COVID-19  |      |      |
| Yes  | 39   | 3.4  |
| No   | 1093 | 96.6 |
| Suspicious Symptoms  |      |      |
| Yes  | 356  | 31.4 |
| No   | 776  | 68.6 |
| Being directly involved in the diagnosis / treatment of COVID-19       |      |      |
| Yes  | 622  | 54.9 |
| No   | 510  | 45.1 |
| Whether someone in your family is diagnosed with COVID-19              |      |      |
| Yes  | 35   | 3.1  |
| No   | 1097 | 96.9 |
| Whether one of your friends is diagnosed with COVID-19                 |      |      |
| Yes  | 557  | 49.2 |
| No   | 575  | 50.8 |
| Zung Depression Scale Score  |      |      |
| Normal ( ≤ 40 points)  | 244  | 21.6 |
| Mild level (40-47 points)  | 310  | 27.4 |
| Moderate-apparent level (48-55 points)                                 | 393  | 34.7 |
| Severe-advanced ( ≥ 56 points)   | 185  | 16.3 |
| Insomnia Severity Index Score  |      |      |
| No significant insomnia (0-7 points)                                   | 328  | 29.0 |
| Sub-threshold insomnia (8-14 point)                                    | 532  | 47.0 |
| Moderate severity insomnia (15-21 point)                               | 197  | 17.4 |
| Sever insomnia (22-28 point)   | 75   | 6.6  |

worse. and 3.1% (n=35) stated it became much worse. About 53% (n=600) of the participants stated that they were in a risky contact with patients with COVID-19. Furthermore, 3.4% (n=39) of them reported that they had been diagnosed with COVID-19, and 31.4% (n=356) stated that they experienced suspicious symptoms. Considering the participants' Zung Depression Self-Rating Scale scores, 27.4% (n=310), 34.7% (n=393), and 16.3% (n=185) of them were found to have mild level, apparent moderate level, and severe advanced levels of

depression, respectively. In addition, 47% (n=532) of the participants were found to have subthreshold insomnia, whereas 17.4% (n=197) and 6.6% (n=75) had moderate and severe insomnia, respectively (Table 2).

Considering the participants' exposure level to stigmatization due to COVID-19, 39.7% (n=449) of them answered "yes" and 40.8% (n=462) answered "partially yes" to the following expression: "Because I am a healthcare professional, my friends/neighbors/relatives want me to stay away from them." For

**Table 3. Participants' exposure level to stigmatization due to COVID-19**

| <b>Because I'm a healthcare professional,</b>                               | <b>(n)</b> | <b>%</b> |
|---|------------|----------|
| My friends \ neighbors \ relatives want me to stay away from them           |            |          |
| Yes   | 449        | 39.7     |
| No  | 221        | 19.5     |
| Partially yes   | 462        | 40.8     |
| My friends \ neighbors \ relatives want me to stay away from their children |            |          |
| Yes   | 415        | 36.7     |
| No  | 256        | 22.6     |
| Partially yes   | 461        | 40.7     |
| My friends \ neighbors \ relatives want me to stay away from them           |            |          |
| Yes   | 370        | 32.7     |
| No  | 304        | 26.9     |
| Partially yes   | 458        | 40.5     |
| I feel stigmatized  |            |          |
| Yes   | 359        | 31.7     |
| No  | 354        | 31.3     |
| Partially yes   | 419        | 37.0     |
| I feel very lonely  |            |          |
| Yes   | 221        | 19.5     |
| No  | 482        | 42.6     |
| Partially yes   | 429        | 37.9     |
| I feel like I give too much trouble to my family                            |            |          |
| Yes   | 328        | 29.0     |
| No  | 374        | 33.0     |
| Partially yes   | 430        | 38.0     |

the item "I feel like people run away/escape from me when I walk beside them," 32.7% (n=370) answered "yes" and 40.5% (n=458) answered "partially yes." About 31.7% (n=359) of the participants stated that they were stigmatized for being healthcare professionals, and 37% reported partially experiencing it. Furthermore, 19.5% (n=221) and 37.9% (n=429) of the participants stated that they felt so alone and partially alone, respectively (Table 3).

When the participants' stigma exposure was compared according to their sociodemographic characteristics, 32.5% (n=214) of the women and 30.6% (n=145) of the men stated feeling stigmatized for being healthcare professionals ( $p>0.05$ ). In addition, 30.2% (n=199) of the women and 27.2% (n=129) of the men stated that they discomforted their families because they are healthcare professionals ( $p<0.05$ ). About 41.0% (n=246) of the participants, who were in a risky contact with patients with COVID-19, stated that they were stigmatized, 41.5% (n=249) stated that people ran away from them, and 36.8% (n=221) stated that they discomforted their families ( $p<0.05$ ) because they are healthcare professionals (Table 4).

Of the participants, 40.9% (n=147), who thought that they were stigmatized because they are healthcare professionals, were found to experience moderate/apparent levels of depression, and 31.2% (n=112) were found to experience se-

vere depression ( $p=0.001$ ), whereas 41.8% (n=150) and 25.1% (n=90) were found to have subthreshold insomnia and moderate insomnia, respectively ( $p=0.001$ ) (Table 5).

## Discussion

The present study included 1132 healthcare professionals, of whom more than half were in a risky contact with patients with COVID-19. When their current health state was compared with that before the pandemic, one of every four participants stated that it became worse/much worse. When the answers were investigated in terms of depression, 78.4% of the healthcare professionals were found to have depression (mild/moderate/severe). A study conducted on healthcare professionals in China supported our study and suggested that the possibility for healthcare professionals to have anxiety and depression is significantly higher than that for nonhealthcare professionals.<sup>[28]</sup> Healthcare professionals stated that they are exposed to a higher risk of occupational psychological distress and stigma.<sup>[29]</sup>

Considering insomnia, 71% of the healthcare professionals were found to have insomnia (subthreshold/moderate/severe). Although Zhang and colleagues found that the insomnia level was 38.3% among the healthcare professionals, it was

**Table 4. Comparison of stigma exposure of participants according to their socio-demographic characteristics**

|  | Because I'm a healthcare |     |     |           | p     | My friends/ neighbors/ relatives want me to stay away from them |     |           |     | p     | I feel stigmatized |           |     |    | p     | I feel like I give too much trouble professional; to my family |  |  |  | p |
|--|--------------------------|-----|-----|-----------|-------|---|-----|-----------|-----|-------|--------------------|-----------|-----|----|-------|--|--|--|--|---|
|  | n                        | Yes | No  | Partially |       | Yes   | No  | Partially | Yes |       | No                 | Partially | Yes | No |       | Partially  |  |  |  |   |
| Gender   |                          |     |     |           | 0.598 |   |     |           |     | 0.233 |                    |           |     |    | 0.046 |  |  |  |  |   |
| Female   | 658                      | 219 | 181 | 258       |       | 214   | 214 | 230       |     | 199   | 229                | 230       |     |    |       |  |  |  |  |   |
| Male   | 474                      | 151 | 123 | 200       |       | 145   | 140 | 189       |     | 129   | 145                | 200       |     |    |       |  |  |  |  |   |
| Age  |                          |     |     |           | 0.009 |   |     |           |     | 0.235 |                    |           |     |    | 0.022 |  |  |  |  |   |
| 25<  | 97                       | 35  | 27  |           |       | 35  | 33  | 29        |     | 35    | 36                 | 26        |     |    |       |  |  |  |  |   |
| 25-34  | 415                      | 119 | 135 | 161       |       | 112   | 144 | 159       |     | 104   | 157                | 154       |     |    |       |  |  |  |  |   |
| 35-44  | 453                      | 163 | 102 | 188       |       | 155   | 125 | 173       |     | 147   | 128                | 178       |     |    |       |  |  |  |  |   |
| 45-54  | 145                      | 47  | 30  | 68        |       | 50  | 45  | 50        |     | 36    | 46                 | 63        |     |    |       |  |  |  |  |   |
| 55 ≥   | 22                       | 6   | 10  | 6         |       | 7   | 7   | 8         |     | 6     | 7                  | 9         |     |    |       |  |  |  |  |   |
| Marrital Status  |                          |     |     |           | 0.248 |   |     |           |     | 0.079 |                    |           |     |    | 0.008 |  |  |  |  |   |
| The married  | 838                      | 279 | 215 | 344       |       | 278   | 248 | 312       |     | 250   | 252                | 336       |     |    |       |  |  |  |  |   |
| Single   | 273                      | 88  | 82  | 103       |       | 78  | 95  | 100       |     | 72    | 112                | 89        |     |    |       |  |  |  |  |   |
| Other  | 21                       | 3   | 7   | 11        |       | 3   | 11  | 7         |     | 6     | 10                 | 5         |     |    |       |  |  |  |  |   |
| Number of children   |                          |     |     |           | 0.250 |   |     |           |     | 0.220 |                    |           |     |    | 0.034 |  |  |  |  |   |
| No children  | 333                      | 103 | 102 | 128       |       | 102   | 111 | 120       |     | 89    | 128                | 116       |     |    |       |  |  |  |  |   |
| 1  | 238                      | 76  | 57  | 105       |       | 65  | 75  | 98        |     | 61    | 81                 | 96        |     |    |       |  |  |  |  |   |
| 2  | 388                      | 127 | 109 | 152       |       | 126   | 125 | 137       |     | 124   | 123                | 141       |     |    |       |  |  |  |  |   |
| 3 and more   | 173                      | 64  | 36  | 73        |       | 66  | 43  | 64        |     | 54    | 42                 | 77        |     |    |       |  |  |  |  |   |
| Job  |                          |     |     |           | 0.001 |   |     |           |     | 0.076 |                    |           |     |    | 0.057 |  |  |  |  |   |
| Physician  | 224                      | 48  | 78  | 98        |       | 53  | 86  | 85        |     | 45    | 84                 | 95        |     |    |       |  |  |  |  |   |
| Nurse/midwife  | 109                      | 0   | 48  | 61        |       | 11  | 49  | 49        |     | 11    | 49                 | 49        |     |    |       |  |  |  |  |   |
| Technician (high school)   |                          | 53  | 26  | 31        |       | 40  | 31  | 39        |     | 38    | 39                 | 33        |     |    |       |  |  |  |  |   |
| Technician(associate degree)   |                          | 51  | 44  | 78        |       | 57  | 57  | 59        |     | 52    | 55                 | 66        |     |    |       |  |  |  |  |   |
| Other  | 516                      | 183 | 127 | 206       |       | 174   | 148 | 194       |     | 161   | 161                | 194       |     |    |       |  |  |  |  |   |
| Working unit   |                          |     |     |           | 0.001 |   |     |           |     | 0.001 |                    |           |     |    | 0.001 |  |  |  |  |   |
| PHD  | 76                       | 10  | 29  | 37        |       | 10  | 30  | 36        |     | 15    | 41                 | 20        |     |    |       |  |  |  |  |   |
| 112 Emergency  | 92                       | 42  | 17  | 33        |       | 30  | 25  | 37        |     | 29    | 29                 | 34        |     |    |       |  |  |  |  |   |
| FHC\CHC  | 322                      | 96  | 101 | 125       |       | 91  | 121 | 110       |     | 88    | 129                | 105       |     |    |       |  |  |  |  |   |
| TRH  | 339                      | 134 | 78  | 127       |       | 128   | 84  | 127       |     | 122   | 80                 | 137       |     |    |       |  |  |  |  |   |
| ODHC   | 32                       | 8   | 5   | 19        |       | 11  | 7   | 14        |     | 6     | 5                  | 21        |     |    |       |  |  |  |  |   |
| DSH  | 271                      | 80  | 74  | 117       |       | 89  | 87  | 95        |     | 68    | 90                 | 113       |     |    |       |  |  |  |  |   |
| Risky contact with COVID-19 patients                                   |                          |     |     |           | 0.001 |   |     |           |     | 0.001 |                    |           |     |    | 0.001 |  |  |  |  |   |
| Yes  | 600                      | 249 | 105 | 246       |       | 246   | 126 | 228       |     | 221   | 156                | 223       |     |    |       |  |  |  |  |   |
| No   | 532                      | 121 | 199 | 212       |       | 113   | 228 | 191       |     | 107   | 218                | 207       |     |    |       |  |  |  |  |   |
| Being directly involved in the diagnosis / treatment of COVID-19       |                          |     |     |           | 0.001 |   |     |           |     | 0.001 |                    |           |     |    | 0.001 |  |  |  |  |   |
| Yes  | 622                      | 256 | 147 | 219       |       | 247   | 171 | 204       |     | 208   | 179                | 235       |     |    |       |  |  |  |  |   |
| No   | 510                      | 114 | 157 | 239       |       | 112   | 183 | 215       |     | 120   | 195                | 195       |     |    |       |  |  |  |  |   |
| Separating the living space / home with the family due to the pandemic |                          |     |     |           | 0.001 |   |     |           |     | 0.001 |                    |           |     |    | 0.001 |  |  |  |  |   |
| Yes  | 335                      | 150 | 57  | 128       |       | 151   | 70  | 114       |     | 138   | 91                 | 106       |     |    |       |  |  |  |  |   |
| No   | 797                      | 220 | 247 | 330       |       | 208   | 284 | 305       |     | 190   | 283                | 324       |     |    |       |  |  |  |  |   |

statistically significant when compared with those who were nonhealthcare professionals.<sup>[28]</sup> This finding supports that healthcare professionals in charge during the COVID-19 pandemic experienced insomnia.

In another study conducted on healthcare professionals, more than half of the participants (50.4%) were found to have depression, and 44.6% and 34.0% of them were found to have anxiety and insomnia symptoms, respectively.<sup>[30]</sup> Qi and colleagues<sup>[31]</sup> investigated the high mental stress among the healthcare professionals during the COVID-19 pandemic and found that more than half of them had insomnia.<sup>[31]</sup> Huang and colleagues<sup>[32]</sup> reported that healthcare professionals had

a higher level of insomnia than other occupational groups. They also added that prolonged work hours were associated with high anxiety levels. The quick spread of COVID-19 caused depletion of source increase in medical consumables and labor force. Thus, nonstop shifts and prolonged work hours or assignments to other units were thought to be the reasons for the increased levels of work stress and insomnia. Furthermore, close contact with patients with COVID-19 was thought to be the reason for pressure perceived by healthcare professionals due to the possibility of getting infected or transmitting the virus to their families. In addition, our results indicated that the percentage of health professionals (30%) with separate living spaces/homes from their families cannot be underestimated.

**Table 5. Comparison of depression and insomnia according to stigma exposure of participants**

| Exposure to stigma  | Zung Depression Level |      |          |        | p     | Insomnia Severity Index |               |                   |                | p     |
|---|-----------------------|------|----------|--------|-------|-------------------------|---------------|-------------------|----------------|-------|
|   | Normal                | Mild | Moderate | Severe |       | No significant          | Sub-threshold | Moderate severity | Sever insomnia |       |
| My friends/neighbors/relatives want me to stay away from them (%)               |                       |      |          |        |       |                         |               |                   |                |       |
| Yes   | 12.9                  | 20.9 | 41.2     | 24.9   | 0.001 | 20.3                    | 43.7          | 22.7              | 13.4           | 0.001 |
| No  | 38.5                  | 30.3 | 23.1     | 8.1    |       | 43.9                    | 44.8          | 11.3              | 0              |       |
| Partially   | 21.9                  | 32.3 | 34.0     | 11.9   |       | 30.3                    | 51.3          | 15.2              | 3.2            |       |
| My friends \ neighbors \ relatives want me to stay away from their children (%) |                       |      |          |        |       |                         |               |                   |                |       |
| Yes   | 11.6                  | 21.9 | 40.2     | 26.3   | 0.001 | 18.1                    | 43.6          | 23.9              | 14.5           | 0.001 |
| No  | 39.8                  | 32.8 | 21.1     | 6.3    |       | 44.9                    | 44.9          | 9.4               | 0.8            |       |
| Partially   | 20.4                  | 29.3 | 37.3     | 13.0   |       | 29.9                    | 51.2          | 16.1              | 2.8            |       |
| My friends/neighbors/relatives want me to stay away from them                   |                       |      |          |        |       |                         |               |                   |                |       |
| Yes   | 11.9                  | 18.6 | 40.8     | 28.6   | 0.001 | 19.5                    | 40.5          | 25.1              | 14.9           | 0.001 |
| No  | 44.1                  | 28.6 | 20.4     | 6.9    |       | 48.0                    | 41.1          | 10.5              | 0.3            |       |
| Partially   | 14.4                  | 33.6 | 39.3     | 12.7   |       | 24.0                    | 56.1          | 15.7              | 4.1            |       |
| I feel stigmatized for being a healthcare professional (%)                      |                       |      |          |        |       |                         |               |                   |                |       |
| Yes   | 8.6                   | 19.2 | 40.9     | 31.2   | 0.001 | 16.7                    | 41.8          | 25.1              | 16.4           | 0.001 |
| No  | 40.4                  | 27.7 | 24.9     | 7.1    |       | 48.0                    | 40.4          | 10.2              | 1.4            |       |
| Partially   | 16.7                  | 34.1 | 37.7     | 11.5   |       | 23.4                    | 57.0          | 16.9              | 2.6            |       |
| I feel very lonely (%)  |                       |      |          |        |       |                         |               |                   |                |       |
| Yes   | 8.6                   | 15.8 | 32.1     | 43.4   |       | 14.9                    | 38.9          | 27.6              | 18.6           | 0.001 |
| No  | 35.9                  | 29.3 | 27.6     | 7.3    | 0.001 | 40.7                    | 45.2          | 11.2              | 2.9            |       |
| Partially   | 12.1                  | 31.2 | 44.1     | 12.6   |       | 23.1                    | 53.1          | 19.1              | 4.7            |       |
| I feel like I give too much trouble to my family (%)                            |                       |      |          |        |       |                         |               |                   |                |       |
| Yes   | 10.1                  | 18.3 | 39.3     | 32.3   | 0.001 | 15.9                    | 43.3          | 25.6              | 15.2           | 0.001 |
| No  | 37.2                  | 28.1 | 27.5     | 7.2    |       | 42.8                    | 42.0          | 13.1              | 2.1            |       |
| Partially   | 16.7                  | 33.7 | 37.4     | 12.1   |       | 27.0                    | 54.2          | 14.9              | 4.0            |       |

In our study, 68.7% of (n=778) of the participants (31.7% were decisive and 37% were partially decisive) stated that they were exposed to stigma for being healthcare professionals. In a study on infectious diseases, healthcare professionals stated that they felt a higher level of stigmatization than the general population.<sup>[7]</sup> Mostafa and colleagues<sup>[22]</sup> reported that 31.2% of the participants (n=159) were subjected to severe stigma associated with COVID-19, and 64.2% (n=327) and 4.5% (n=23) were subjected to moderate and none/mild stigma, respectively. In another study, 27.3% of the participants reported that people diagnosed with or suspected to have COVID-19 were stigmatized by other people through gossiping and speaking badly to them.<sup>[33]</sup> In a prevalence study, more than one-third of the participants reported that they would stay away from the healthcare professionals as they were afraid of getting infected. In the same study, even those who clapped and cheered to support healthcare professionals were also found to be afraid of them. These findings are consistent with the findings of our study.<sup>[34]</sup>

Most of the participants stated that their relatives/friends/neighbors wanted them to stay away from them (80.5%,

n=911) and their children (77.4%, n=876).Furthermore, most of the participants (73.2%, n=828) stated that people who walked beside them escaped/ran away from them. This situation was found to be statistically significantly associated with being a “young” healthcare professional. A study conducted on Egyptian doctors demonstrated that being young is an independent and significant factor causing COVID-19-related stigmatization.<sup>[22]</sup> Besides, most of the participants (57.4%) stated that they felt alone and discomforted their families (67.0%). Another study has shown that healthcare professionals feel guilty most of the time because they may transmit the infection to their families.<sup>[22]</sup>

Beliefs on being a healthcare professional, prejudice, stigmatization, and discriminatory behaviors such as social avoidance during daily activities (shopping) fall within the stigma practices.<sup>[35,23]</sup> As in our study, it was found that stigmatization of healthcare professionals may diversify. It was also observed that healthcare professionals were not allowed to enter hotels, pension houses, and rental houses and to use public transport vehicles.<sup>[36]</sup> Stigma associated with COVID-19 is related to the fear of being infected in the general population.<sup>[37]</sup> Despite

taking all necessary measures, there are still various stigma and discrimination acts toward healthcare professionals who are on the frontline of the COVID-19 battle.<sup>[37]</sup> Unfortunately, healthcare professionals are labeled, alienated subjected to status deprivation and discrimination due to stigma associated with COVID-19.<sup>[38]</sup> All these findings are in accordance with ours. These stigma and alienation behavior result in additional burden to healthcare professionals and governments during the management of a pandemic. Furthermore, they cause not only healthcare professionals but also everyone infected with COVID-19 to hide their sickness, which hinders early intervention. The most important thing to manage stigma is to effectively spread correct information.

In our study, a high level of stigmatization was experienced by the healthcare professionals who were living separately from their families, working in a training and research hospital, in a risky contact with COVID-19 patients, and directly in charge of the diagnosis and treatment. Similarly, healthcare professionals providing care to patients with COVID-19 were reported to be exposed to a high level of stigma in another study. [39] A previous study conducted on healthcare professionals and stigma demonstrated that healthcare professionals who were in direct contact with infected patients had high perception of stigma.<sup>[23]</sup>

In our study, the participants, who were stigmatized for being healthcare professionals, suffered from depression and insomnia at a higher level. It was mentioned in the literature that the physiological states of healthcare professionals were related to the stigmatization against them.<sup>[40]</sup> Labeling, discrimination, and fear of being stigmatized often result in physiological problems such as anxiety and fear.<sup>[41]</sup> All these findings indicate that stigma is a significant factor affecting mental health and quality of life.

Because of their occupational exposure, healthcare professionals are considered as a primary source of the infection that society is trying to avoid in general.<sup>[34]</sup> However, stigma associated with COVID-19 threatens the physical and mental health of the healthcare professionals.<sup>[36]</sup>

During pandemic, stigma results in discrimination and status deprivation. The word "stigma" has a considerable place in the literature related to pandemics, particularly quarantine measures.<sup>[7]</sup> Discussions and prevention measures about stigma and discrimination among patients with COVID-19 and high-risk groups are a priority for the psychology of public health and healthcare professionals.<sup>[42]</sup> Patients with COVID-19, their family members and friends, the community, and healthcare professionals are defenseless to stigmatization. Stigma is an inevitable reality during pandemic. Even individuals who are not infected with SARS-CoV2 but have similar symptoms may be stigmatized. It is very important to accept the fact that social stigma against people with certain ethnicity and everyone infected with the virus is far more serious than expected. The stigma that developed during the pandemic is thought to weaken social integrity, and by causing more important

health issues, it may result in bigger struggles for the control of the pandemic. The individuals in our society are likely to hide their diagnosis so as not to be exposed to stigma and discrimination. This prevents them from receiving necessary treatments and thus hinders all of us from the fight against the pandemic. Recent literature has clearly demonstrated that stigma and fear of disease hinders the expected the fight against the pandemic.<sup>[43]</sup>

Furthermore, stigma experiences, just like discrimination, may unfortunately last for a long time, even after the pandemic slows down.<sup>[44]</sup> It is very important to prevent healthcare professionals from being stigmatized, to protect their mental health, and to develop strategies for this purpose, not only during pandemic but also in postpandemic future .

### Limitations

Sample selection was not performed as the aim of the research was to reach the entire target population. However, 84% of the entire universe has been reached. Moreover, the questions about stigma used in the study were not a scale but questions developed by the researchers through literature scanning . Therefore, the lack of a standardized scale for stigmatization was one of the limitations of this study.

### Conclusion

Healthcare professionals have been exposed to high levels of stigma. They exposed to stigma were found to be highly depressed and had higher complaints of insomnia . It is plausible that healthcare professionals will suffer from fatigue and mental burnout when the pandemic ceases. Therefore, providing postpandemic psychosocial rehabilitation support to healthcare professionals is very important to improve their quality of life in the future.

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