

Covid 19 Related Stressors among Health Care Workers in Makkah, 2021

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Abstract

Background: When the contagious COVID-19 spread worldwide, the frontline staff faced extraordinary excessive work pressure and potentials of all of the society.

Objective: The aim was to explore Covid 19 related stressors among health care workers in Makkah, 2021.

Methods: A cross-sectional, descriptive study was conducted in a tertiary hospital during the outbreak of COVID-19 between March and May 2021 in Makkah, Data were collected from 1208 healthcare workers. Descriptive statistics and multiple linear regression were used to analyze the data. Written informed consent was also received from participants.

Results: Less than 60% of participants chose moderate or severe stress on all stressors, indicating a low stress level among healthcare workers. The main source of stress among frontline healthcare workers caring for COVID-19 patients came from the fear of being infected, the fear of family members being infected, and the discomfort caused by protective equipment. Frontline staff who were nurses, were married, and had worked more than 20 days suffered higher stress, whereas rescue staff showed lower stress.

Conclusion: The healthcare workers caring for patients with COVID-19 had low stress level, although they still had the fear of being infected or uncomfortable feeling caused by personal protective equipment. A low stress level among healthcare workers indicated their professional devotion and altruism during COVID-19 epidemic. Medical institutions and the government should continue to strengthen infection prevention measures and provide more comprehensive care involving families of frontline healthcare workers, especially nurses and married staff. It will be a lesson to other countries that awakening healthcare workers' inside motivation and providing necessary support from government and society were significant.

Keywords: Covid 19 , stressors, health care workers

Introduction:

The Novel Coronavirus 2019 (COVID-19) is a new form of the coronavirus family and has spread throughout the world. After the outbreak of respiratory infectious diseases, such as SARS or influenza, several studies have been conducted to explore healthcare workers' stress during the emerging situation. Almost 87% of healthcare workers were found to feel more stressed at work during avian influenza outbreaks. During the SARS epidemic, healthcare workers were also found to be more stressed when caring for infected patients (Wang et al., 2020; World

Health Organization., 2020; Tam et al., 2004).

Researchers found that the main sources of stress among healthcare workers were worrying about their own health or their family members' health and being isolated.¹¹ One study reported that the proportion of people who worried about their own health and their families' health has reached 2 out of 3 (Xiong et al., 2021; Maunder et al., 2004). Moreover, during the COVID-19 outbreak, health workers needed to be isolated in hospitals or hotels outside of office hours over a 14-day observation period, as mandated by health authorities (Benfante et al., 2020).

A growing body of literature has addressed the psychiatric impact of major disasters for relevant staff, which can be significant and long term. Some workers experience post-traumatic stress disorder, including anxiety, burnout, and depression (Brooks et al., 2019). A study documented that approximately 10% of the staff had experienced high levels of post-traumatic stress symptoms since the SARS outbreak (Wu et al., 2009). Medical workers who had contacted with patients with SARS experienced a more intense acute traumatic response. Hospital employees who had been quarantined, worked in SARS wards, or had friends or close relatives who contracted SARS were two to three times more likely to have high post-traumatic stress symptom levels, than those without these exposures. In Toronto, healthcare workers reported significantly higher levels of burnout, psychological distress, and post-traumatic stress 13–26 months after the SARS outbreak.¹⁷ They were more likely to reduce patient contact and work hours and to report behavioral consequences of stress. In addition, the perceived risk of fatality from SARS even was one of the main predictors of nurses' consideration of leaving their jobs. Based on literature review, we constructed a conceptual frame- work for healthcare workers' stress when caring for COVID-19 patients, including four variables (the worry of social isolation, the discomfort caused by the protective equipment, the difficulties and anxiety of infection control, and the workload of caring for patients) (Maunder et al., 2006; Wu et al., 2009; Brooks et al., 2019).

Aim

The aim of the study was to explore explore Covid 19 related stressors among health care workers in Makkah, 2021

Materials and Methods

Design

This was a cross-sectional, descriptive study

Setting

The study was conducted in a tertiary hospital in Makkah.

Participants

Convenience sampling of health care workers between March and May and March 2021 during the outbreak of COVID-19.

Inclusion criteria:

- first-line healthcare workers who had the experience caring for patients suffering from COVID-19
- Willing to participate in this study.

Exclusion criteria:

- Medical workers with confirmed COVID-19

Measurements

A self-designed questionnaire including items on gender, age, working years, marital status, number of children, education level, seniority, profession, place of work, work condition, rescue staff, previous workdepartment, previous infectious disease experience, and number of days spent caring for COVID-19 patients was used to collect general information. “The Stress Scale of Caring for Highly Infectious Disease Patients among Health Care Workers—Based on SARS” developed by Chuang and Lou in 2005 was used to investigate the stress of healthcare workers caring for COVID-19 patients.¹⁹ The scale has 32 items that are divided into four dimensions: worry about social isolation (10 items), discomfort caused by protection measures (8 items), difficulty and anxiety in infection control (7 items), and the burden of caring for patients (7 items). A 4-point Likert-type scale was adopted for each item, and the degree of feeling pressure was measured from 0 to 3 points, with possible scores ranging from 0 to 96. A high score signifies that the participants are under great pressure. The scale has good internal consistency and validity, the Cronbach’s of each dimension ranged from 0.85 to 0.91, and the content validity index of the scale was 0.91.

Data collection

All the healthcare workers were invited to participate in the study. The researcher would explain the purpose of the study to the healthcare workers; if they agreed to participate, an informed consent form must be signed and the web-based questionnaires were distributed. The web questionnaire was conducted after the written consent was signed.

All approvals were obtained. No participants’ names were attached to the questionnaires. The researchers would encode the questionnaires uniformly when collating the data. Furthermore, the participants could withdraw at any time without prejudice.

Data analysis

Data were processed using SPSS 21.0 for Windows statistical software program. The participants’ general characteristics and stress status were analyzed using descriptive analysis. Continuous variables were represented by means and standard deviations, while classification or rank variables were represented by frequencies and percentages. Stepwise multiple linear regression analysis was carried out with participants’ demographics as independent variables and the total pressure score as the dependent variable to identify the factors of influencing health workers’ stress when caring for COVID-19 patients. Statistical significance was set at $p < 0.05$.

Results:

Detailed demographics of participants are summarized in Table 1. Mean age was 30.9 ± 5.4 , the highest proportions were females (90%), married (57%), with no children (50%), junior (70%) with Bachelor’s degree (80%), nurses (86.1%) from various departments (77.5), caring for Covid 19 patient from 11-30 days (85%)

| Table 1. Participants' characteristics (N = 500). | |
|--|--------------------|
| Variables | M + SD (range) |
| Age (years) | 30.9 + 5.4 (21, 6) |
| Working years (years) | 7.8 + 5.7 (0, 35) |
| | (%) |
| Gender | |
| Male | (10) |
| Female | (90) |
| Marital status | |
| Single | (40) |
| Married | (57) |
| Divorced | (3) |
| Number of children | |
| None | (50) |
| One | (40) |
| ≥2 | (10) |
| Associate's degree | (5) |
| Bachelor's degree | (80) |
| Master's degree | (5) |
| Doctoral degree | (10) |
| Seniority | |
| Junior | (70) |
| Intermediate | (27.5) |
| Senior | (2) |
| Profession | |
| Doctor | (10.9) |
| Nurse | (86.1) |
| Other | (3.0) |
| Rescue staff | |
| Yes | (13.2) |
| No | (86.8) |
| Previous work department | |
| Respiratory department | (5) |
| Emergency department | (5) |
| Infectious disease department | (2.5) |
| ICU | (10) |
| Other departments | (77.5) |
| Number of work days spent for caring covid 19 patients | |
| 10 days or less | 8.7 |
| 11-20 days | 44.4 |
| 21-30 days | 40.6 |
| More than 30 days | 0.8 |

Table 2 showed that the main stressors were from discomfort caused by the protective equipment followed by worry of social isolation. While table 3 illustrates the higher five items that were moderate or severe stress as mentioned.

Table 2. Median of health workers' stress scores in sub-scale.

| Sub-scales | Median (25–75, percentiles) |
|---|-----------------------------|
| The worry of social isolation | 10 (5, 14) |
| The discomfort caused by the protective equipment | 11 (7, 15) |
| The difficulties and anxiety of infection control | 8 (3, 10) |
| The workload of caring for patients | 8 (4, 10) |

Table 3. The higher five items that were moderate or severe stress.

| Items | Moderate or severe stress (%) |
|---|-------------------------------|
| Worrying about transmitting COVID-19 to my relatives and friends | 58.6 |
| Fear of being infected | 52.5 |
| Poor vision while wearing protective masks or goggles | 50.7 |
| Fear of deterioration or death of the patient | 47.0 |
| Living apart from and limited visits with my family for fear of infection | 46.9 |

Table 4: explained the lower five items that were moderate or severe stress as mentioned:

| Items | Moderate or severe stress (%) |
|--|-------------------------------|
| Immature protective measures. | 17 |
| Taking care of patients is health workers' professional responsibility and cannot be refused. | 17 |
| No suitable place to live after work. | 12 |
| Not daring to talk about work in public places. | 11.1 |
| Not supported by relatives and friends, such as being asked to refuse to care for COVID-19 patients or resign. | 7.5 |

The results showed that participants' stress was affected by profession, marital status, number of days spent caring for COVID-19 patients at work and being a rescue staff member.

Table 5. The results of multiple linear regression analysis predicting health workers' stress when caring for COVID-19 patients.

| Variables | B | SE | b | t | F | Adjusted R ² |
|-----------|-------|-------|-------|-----------|---|-------------------------|
| Constant | 57.94 | 1.745 | | 33.211*** | | 4.40 |
| Nurses | 6.485 | 1.650 | 0.117 | 3.930*** | | |
| Married | 5.312 | 1.140 | 0.137 | 4.658*** | | |

| | | |
|--|------------|--------------|
| Spending 21–30 days caring for COVID-19 patients | 3.0721.142 | 0.0802.690** |
| Rescue staff | —1.644 | ——2.641** |
| | 4.343 | 0.077 |

Discussion:

The results of the present research revealed that healthcare workers had a lower level of stress. The fear of family members and themselves being infected, and the discomfort caused by protective equipment were leading factors of psychological stress. “Fear of deterioration or death of the patient” also caused healthcare workers’ stress, which reflected their greater stress. In this study, less than 60% of participants chose moderate or severe stress for all the stress items. This results were in harmonious with Wang et al., 2020 who found that the majority of stressed staff were married nurses who have children. They reported that they are afraid about their family to be infected, fear from deterioration and death of patients.

Emerging infectious disease pandemics usually are accompanied by a hidden silent pandemic, namely, the psychological impact. The general population, including healthcare workers (HCWs), are prone to this silent pandemic. HCWs, as the front-line force to control pandemics, are expected to have different levels of anxiety than those of the general population. Various factors may contribute to the perceived altered anxiety levels among HCWs, such as the fear of contracting the infection during work; fear of transmitting the infection to loved ones; scarcity of available knowledge; quality of the knowledge presented in the official portals or the social media; and shortage of personal protective equipment (Alenazi et al., 2020; Wong et al., 2005).

A study conducted in Saudi Arabia by to evaluate the anxiety levels of HCWs during the COVID-19 pandemic conclude that two-thirds of the HCWs who responded indicated moderate or high anxiety. Consideration should be given to providing high-risk groups more psychological support and communication. A written outbreak management plan may reduce the anxiety level among HCWs and their overall psychological wellbeing. The association of anxiety with other factors such as income level, tolerance of uncertainty, and trust in the healthcare system should be explored in future research (Alenazi et al., 2020).

Moreover, Mosolova et al., 2020 reported that healthcare workers in Russia practicing treatment of patients with COVID-19 reported high rates of stress and anxiety similar to other countries. Female gender, younger age and being a physician were associated with higher levels of anxiety. These results demonstrate the importance of supportive programs for healthcare workers fighting COVID-19

Furthermore, Wang et al., 2020 conducted a study to explore healthcare workers’ stress and influencing factors when caring for COVID-19 patients from an altruistic perspective. Low level of stress was found. In relation to the sources of stress, they go in line with our results. As they found that the healthcare workers caring for patients with COVID-19 had the fear of being infected or uncomfortable feeling caused by personal protective equipment. A low stress level among healthcare workers indicated their professional devotion and altruism during COVID-19 epidemic. Medical institutions and the government should continue to strengthen infection prevention measures and provide more comprehensive care involving families of

frontline healthcare workers, especially nurses and married staff. It will be a lesson to other countries that awaking healthcare workers' inside motivation and providing necessary support from government and society were significant.

Conclusion:

The healthcare workers caring for patients with COVID-19 had low stress level, although they still had the fear of being infected or uncomfortable feeling caused by PPE. A low stress level among the healthcare workers indicated their professional devotion in COVID-19 epidemic. Frontline staffs that were nurses, were married, and had worked more than 20 days had greater pressure. Therefore, the follow-up research should be devoted to improving the comfort and safety of protective equipment. Medical institutions and the government should continue to strengthen infection prevention measures and provide more comprehensive care involving the families of frontline healthcare workers, especially nurses and married staff.

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