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Psychiatry Research 289 (2020) 113053

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Letter to the editor

The psychological well-being of physicians during COVID-19 outbreak in Oman

On March 12, 2020, the World Health Organization declared the COVID-19 outbreak a pandemic. The WHO reports that there have been approximately 2,954,222 confirmed cases and 202,597 COVID-19-related deaths worldwide (WHO, 2020). COVID-19 has created unpresented economic, social, and psychological devastation for both individuals and nations. In this study we gauged the impact of COVID-19 on the mental health of physicians in Oman, an Arab country located in the southeastern part of the Arabian Peninsula.

The immediate and prolonged effect of global infectious disease outbreaks on the mental health of health care workers (HCWs) is indisputable. Mental health problems observed among HCWs during COVID-19 and previous international health crises such as SARS and MERS include sleep disturbance, stress, anxiety, and fear of contagion. In Hong Kong, Lee and colleagues (2007) found one year after the outbreak of SARS that HCWs had higher levels of posttraumatic stress, depression and anxiety compared to non-HCWs. A study from China (Lai et al., 2020) found that a substantial number of HCWs who treated COVID-19 patients suffered from depression, anxiety, insomnia, and distress.

We carried out a web-based survey in early April 2020 to examine the impact of COVID-19 on the mental health of physicians working at several health facilities in Oman. They received a link to the survey, which was approved by the Research Ethics Committee at the Royal Hospital in Oman. The survey consisted of sociodemographic questions and three well-established scales: (1) The Perceived Stress Scale (PSS-10), consisting of 10 items with five responses ranging from 0 = *Never* to 4 = *Very often*. A high score signifies a high level of stress. (2) The Generalized Anxiety Disorders Scale (GAD-7), consisting of seven items with 4-point Likert scale ranging from 0 = *Not at all* to 3 = *Nearly every day*. A high score signifies a high level of anxiety and a score of ≥ 10 is indicative of the presence of anxiety. (3) The WHO Well-being Index (WHO-5), a five-item scale that gauges psychological well-being. Items are rated on a 6-point Likert scale ranging from 0 = *None of the time* to 5 = *All the time.* Scores on the WHO-5 are changed to a percentage by multiplying them by 4. The transformed scale ranges from 0 to 100, with 100 representing the best possible well-being. Scores $\leq$ 50 are indicative of poor psychological well-being that warrants screening for depression (Rauwerda et al., 2018). The Cronbach's alpha coefficients for the three measures were .88, .90, and .92, respectively.

The sample consisted of 194 physicians (60% females), one-third of whom (29.7%) worked closely with COVID-19 patients. The mean age of the physicians was 40.72 (SD = 8.53). Most of the participants were married (80.4%), 15% were single, and 4.6% were divorced.

The mean score on the PSS-10 was 23.61 (SD = 6.06). Females scored higher (M = 24.43, SD = 5.99) than males (M = 22.39, SD = 5.98). An independent-samples *t* test showed a significant influence of gender on the PSS-10 scores (t = 2.32, p = .02, Cohen's d = .34). The same test yielded no significant effect of working with COVID-19 patients (t = 1.37, p = .17). Age was significantly negatively related to PSS-10 (r = -.26, p = .002). Married physicians reported lower a level of stress than non-married participants (t = 2.31, p = .02, Cohen's d = .42).

The mean score on the GAD-7 was 6.41 (SD = 4.83). Using the ≥ 10 cutoff point on GAD-7, a chi-square test revealed no differences between males and females (χ^2 (1) = .98, p = .21) nor between working and not working with COVID-19 patients (χ^2 (1) = 2.21, p = .09). Marital status (married vs. non-married) had no impact on the GAD-7 scores (χ^2 (1) = .57, p = .29). also, age was not related to the overall scores on the GAD-7 (r = -.08, p = .33). The mean score on the WHO-5 was low (M = 52.47, SD = 22.94). More females scored ≤ 50, the cutoff for poor psychological well-being, than males (χ^2 (1) = 4.45, p = .03). Also, more physicians who worked with COVID-19 patients scored ≤ 50 than those who did not (χ^2 (1) = 3.12, p = .05). Marital status was not related to WHO-5 scores. Age was significantly positively correlated with the WHO-5 score (r = .25, p = .003). Lastly, we conducted a multiple linear regression analysis to assess the influence of the PSS-10 and GAD-7 on physicians' psychological well-being. The model explained 72% (R^2 = .52) of the variance in the reported well-being scores (F (2, 191) = 104.63, p = .000). Both the PSS-10 (β = –.40, t (193) = 6.18, p = .000) and the GAD-7 (β = –.40, t (193) = 6.22, p = .000) significantly predicted physicians' scores on the Who-5 Well-Being index.

This study, which we believe is the first from the Arab world, showed that COVID-19 impacted physicians' mental health, especially female and young physicians. Females reported more stress than did males. Two in three female physicians reported a low level of psychological well-being, compared to one in three male physicians. Older physicians experienced greater well-being and a lower level of stress compared to younger ones. Married physicians reported less stress than non-married ones. It seemed, however, that physicians experienced similar amounts of anxiety regardless of their gender and contact with COVID-19 patients. Both stress and anxiety had a strong effect on the overall well-being of physicians. To minimize the impact of COVID-19-related mental and physical health issues, we recommend that health facilities, especially ones that receive COVID-19 patients, set up counseling services for HCWs. Equally, health care providers should be cognizant of their own signs of mental health issues and seek help.

https://doi.org/10.1016/j.psychres.2020.113053
Received 29 April 2020; Accepted 29 April 2020
Available online 07 May 2020
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