Mental Well-Being of Health Care Workers in Vietnam During the Fourth Wave of COVID-19 Pandemic: Impact of COVID-19 Exposure, Anxiety, and Resilience Capacity

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Introduction

The fourth wave of COVID-19 in Vietnam has drastically changed the country’s health care system. During this period, we examined that health care workers’ (HCW) mental well-being would be affected from COVID-19 exposure, attitude, and their resilience.

Methods

This was a cross-sectional survey of 234 Vietnamese HCWs in 2021 (participants description in Supplement 1).

We used the 21-item Depression Anxiety Stress Scale (DASS-21)1 and the two-question version of the Connor-Davidson Resilience Scale.2 Participants were asked whether they had ever been diagnosed with COVID-19, known of anyone having COVID-19, been under regular COVID-19 testing or compulsory quarantine, and number of COVID-19 patients they encountered. Participants rated the likelihood of them contracting COVID-19, the severity of the disease would be, their worries about personal protection equipment (PPE), the possibility of infecting their family of COVID-19, whether they required more training, and whether they ever experienced discrimination during COVID-19 pandemic.

We used multivariable ordinary least squares regression to estimate the associations between predictors and DASS score.

Results

Nearly 20% of respondents were categorized as having mild to moderate depression, anxiety, and/or stress (Table 1). Twelve respondents scored in the severe to extremely severe anxiety, seven in severe to extremely severe depression, and five in severe to extremely severe stress.

Health care workers who were not infected with SARS-CoV-2 had significantly 14.8 times (95% confidence interval [CI] = [–24.2, –5.4]) lower DASS score than those who were infected (Table 2, Supplement 2). Health care workers

Table 1. Depression, Anxiety, and Stress Score and Categories Among Study Participants.

| Factor                  | M (SD) |
|-------------------------|--------|
| DASS score              | 9.1 (9.2) |
| Depression score        | 2.8 (3.3) |
| Anxiety score           | 2.2 (3.0) |
| Stress score            | 4.2 (3.6) |
| Depression category, n (%) |       |
| Normal                  | 179 (76.5) |
| Mild                    | 21 (9.0) |
| Moderate                | 27 (11.5) |
| Severe                  | 4 (1.7) |
| Extremely severe        | 3 (1.3) |
| Anxiety category, n (%) |        |
| Normal                  | 176 (75.2) |
| Mild                    | 18 (7.7) |
| Moderate                | 28 (12.0) |
| Severe                  | 5 (2.1) |
| Extremely severe        | 7 (3.0) |
| Stress category, n (%)  |        |
| Normal                  | 192 (82.1) |
| Mild                    | 22 (9.4) |
| Moderate                | 15 (6.4) |
| Severe                  | 3 (1.3) |
| Extremely severe        | 2 (0.9) |

Abbreviation: DASS, Depression Anxiety Stress Scale.

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| Factor                                                                 | DASS score, M (SD) | Regression Coefficient [95% CI] | P      |
|----------------------------------------------------------------------|--------------------|---------------------------------|--------|
| Ever infected with COVID-19                                          |                    |                                 |        |
| Yes                                                                   | 23.5 (18.1)        | Ref                             | .055   |
| No                                                                    | 8.9 (8.9)          | -8.8 [-17.7, 0.2]               |        |
| Family members ever infected with COVID-19                            |                    |                                 |        |
| Yes                                                                   | 11.5 (11.4)        | Ref                             | .592   |
| No                                                                    | 8.7 (8.8)          | -0.9 [-4.1, 2.3]                |        |
| Ever been under compulsory quarantine                                 |                    |                                 |        |
| Yes                                                                   | 8.6 (8.9)          | Ref                             | .269   |
| No                                                                    | 9.5 (9.5)          | 1.3 [-1.0, 3.6]                 |        |
| Ever been under regular testing                                      |                    |                                 |        |
| Yes                                                                   | 8.9 (8.6)          | Ref                             | .846   |
| No                                                                    | 9.8 (10.6)         | -0.2 [-2.7, 2.2]                |        |
| Ever provided health care to (possible) COVID-19 patients             |                    |                                 |        |
| Yes                                                                   | 9.7 (8.9)          | Ref                             | .188   |
| No                                                                    | 8.3 (9.6)          | -1.6 [-3.9, 0.8]                |        |
| Worried and required more training of infection prevention and control|                    |                                 |        |
| Yes                                                                   | 8.6 (8.5)          | Ref                             | .278   |
| No                                                                    | 17.1 (15.5)        | 2.7 [-2.2, 7.7]                 |        |
| Worried about personal protective equipment                           |                    |                                 |        |
| Not at all                                                            | 7.6 (7.5)          | Ref                             | .848   |
| Slight worried                                                        | 7.7 (7.6)          | 0.2 [-2.4, 2.9]                 |        |
| Somewhat worried                                                      | 12.7 (13.5)        | 4.2 [0.5, 7.8]                  | .025   |
| Moderate worried                                                      | 10.7 (8.7)         | 2.6 [-1.8, 6.9]                 | .244   |
| Extremely worried                                                     | 24.1 (9.44)        | 11.7 [5.2, 18.3]                | .001   |
| Worried about infecting family                                        |                    |                                 |        |
| Not at all                                                            | 8.2 (8.2)          | Ref                             | .964   |
| Slight worried                                                        | 7.9 (8.1)          | 0.1 [-4.3, 4.5]                 |        |
| Somewhat worried                                                      | 8.6 (10.5)         | -1.4 [-6.3, 3.5]                | .573   |
| Moderate worried                                                      | 9.7 (8.4)          | 1.7 [-3.0, 6.5]                 | .477   |
| Extremely worried                                                     | 15.8 (12.0)        | 4.5 [-1.1, 10.1]                | .116   |
| Ever been discriminated due to one’s occupation                       |                    |                                 |        |
| Yes, by family                                                        | 23 (19.4)          | Ref                             | .297   |
| No                                                                   | 11.7 (9.3)         | -4.0 [-11.5, 3.5]               |        |
| Extremely worried                                                     | 7.7 (8.1)          | -6.6 [-13.9, 0.7]               | .777   |
| Possibility of having COVID-19                                        |                    |                                 |        |
| Most likely                                                           | 12.1 (12.0)        | Ref                             | .143   |
| Likely                                                                | 9.0 (8.5)          | -2.0 [-4.8, 0.7]                |        |

(continued)
who were extremely worried about PPE scored significantly higher DASS score than those who were not. Those who did not experience discrimination and rated less likely to be infected with SARS-CoV-2 also scored significantly lower DASS score. Health care workers who rated their possible COVID-19 infection to be not serious scored 3.9 times (95% CI = [0.8, 7.0]) higher than those who rated more serious.

Health care workers who worried more about PPE, had been infected with COVID-19, rated their possible COVID-19 infection as not serious, or rated less serious their possible COVID-19 infection scored significantly higher depressive score, higher anxiety score, and stress score (Supplement 3). Health care workers who had not experienced discrimination or rated less likely to have COVID scored significantly lower depressive and stress score. Higher resilient score had a significantly negative impact on depressive score.

**Discussion**

To our knowledge, this is one of the few studies quantifying the effect of COVID-19-related anxiety and worriness on HCWs’ well-being. We found a substantial number of HCWs experiencing mild to moderate depression, anxiety, and stress which were compatible with previous reports in Vietnam.3-4

Health care workers who worried more about PPE, had been infected with COVID-19, rated their possible COVID-19 infection as not serious, or rated less serious their possible COVID-19 infection scored significantly higher depressive score, higher anxiety score, and stress score (Supplement 3). Health care workers who had not experienced discrimination or rated less likely to have COVID scored significantly lower depressive and stress score. Higher resilient score had a significantly negative impact on depressive score.

Health care workers are an indispensable asset in many low- and middle-income countries and shoulder a heavy psychological burden during the COVID-19 pandemic, but often disregarded in mental wellness support. Targeted psychological support for HCWs is crucial to support their mental well-being.
Acknowledgment
The authors would like to thank the Faculty of Medicine, The Chinese University of Hong Kong, for their support to conduct the study and collect data.

Declaration of Conflicting Interests
The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding
The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethical Approval
The study was approved by the Joint Chinese University of Hong Kong–New Territories East Cluster Clinical Research Ethics Committee.

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Supplemental Material
Supplemental material for this article is available online.

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