Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
An emergency medicine physician well-being study focusing on gender differences and years of practice during the COVID-19 pandemic

Heidi Levine, DO⁎, Nadia Baranchuk, MD, Timmy Li, Ph.D. b,Gabrielle Garra a, Mohanapriya Sayeen Nagarajan a, Nidhi Garg, MD a

⁎ Corresponding author.

E-mail addresses: hlevine3@northwell.edu (H. Levine), nbaranchuk@northwell.edu (N. Baranchuk), tl2@northwell.edu (T. Li), msayeen@northwell.edu (M.S. Nagarajan), ngarg1@northwell.edu (N. Garg).

Wellness is built on emotional, physical, social, financial, spiritual, intellectual and environmental pillars. Stressors affect Emergency Medicine (EM) physicians’ wellness during their shifts, potentially leading to substance abuse, depression, anxiety, relationship difficulties, and even death [1,15,31]. During the COVID-19 pandemic, physicians experienced multiple stressors, anxiety, and depression [2-6,9,35]. Educational systems in critical resilience skills must be developed by organizations to support physicians in coping with these issues [7-10]. Hospital wellness systems and physician groups, focusing on increased engagement and resiliency have been expanding [11-13].

Studies have not examined the psychological effects of the pandemic on gender differences and years of experience for EM physicians [18-21]. Our goal was to assess how the COVID-19 pandemic affected physicians’ well-being, focusing on these determinants.

The descriptive survey study involved all EM attending physicians in our health system. A 25-item anonymous online survey was sent to 477 EM physicians assessing their well-being during the COVID-19 pandemic. Email distribution included 14 hospitals over six months. Our Institutional Review Board approved this study with a waiver of informed consent. No identifiers were collected. Participation was voluntary. No compensation was offered.

Descriptive statistics, including frequencies and proportions, are reported for all survey items for the total study sample, and are stratified by physician gender (female vs. male) and years of experience (<11 years vs. ≥11 years). Chi-square tests, or Fisher’s exact tests were used to assess differences in survey responses by gender and years of experience. A p-value of < 0.05 was considered statistically significant. All analyses were conducted using SAS 9.4 (SAS Institute, Cary, North Carolina, United States).

Table 1 shows emotional wellness survey results.

During the pandemic, more females had difficulties with depression, appetite, concentration and sleep. Females were more emotional. They felt easily irritated, cried, and lashed out more than males.

Female physicians had more changes in appetite. They ate and hydrated less during their shifts. One study on women stressed with high cortisol levels found they ate more on the day they were stressed than on their control day [25]. Stress and depression are connected to poor nutritional choices [26,27].

Concentration issues were more common in female EM physicians and physicians with less than 11 years in practice.

Females had more sleep disturbances during the pandemic. Only 13% used more sleep aids. A few revealed aids were ineffective.

Alcohol use was higher in females and those with less than 11 years of experience. A link exists between substance abuse and high stress. Substance abuse, associated with stress or depression, is associated with physician suicide [40-42]. Poor wellbeing, including depression, anxiety, poor quality of life, stress and high level of burnout, are associated with more self-reported errors [23] as well as decreased quality of patients’ care, malpractice risk and early retirement [6,14,24].

Table 2 presents intellectual and physical wellness survey results. Routinely, 83.1% of physicians listened to the news or other social media for pandemic updates. Forty percent of physicians worked out less. Close to half did exercise, with males comprising the majority. Table 3 details questions on financial and social wellness during the pandemic.

Most participants weren’t impacted financially and remained with their families during the pandemic.

Social wellness improved during the pandemic. Physicians increased their social connections, more in females and slightly more in less experienced physicians. Physicians with strong social supports are happier and have lower risk of burnout [15,51,52]. Persons having higher levels of perceived social support, are less likely to develop psychological conditions [49,50].

To de-stress, males mostly exercised and females shopped online. For other activities, gender or years of practice were not impacted (Table 1).

Physical appearance was not a concern, more in females and less experienced physicians.

Table 4 displays environmental and spiritual wellness results. Environmentally, more than 50% of physicians were worried about safety due to reuse of their N95 mask, mostly females. N95 mask reuse leads to decreased effectiveness in protection against contracting the COVID-19 virus [43]. With increased potential transmission, stress levels increase.
| Survey item                                      | Total sample (n = 142) | Gender* | p-Value* | Years of experience | p-Value** |
|------------------------------------------------|------------------------|---------|----------|--------------------|-----------|
|                                                |                        | Female  | Male     | <11 years          | ≥11 years |
| Emotional wellness prior to the pandemic       |                        | (n = 65)| (n = 75) |                   |           |
| Feel down, depressed or hopeless               | 96 (67.6%)             | 43 (66.2%) | 51 (68.0%) | 48 (65.8%)         | 48 (69.6%) |
| Several days                                   | 45 (31.7%)             | 22 (33.9%) | 23 (30.7%) | 24 (32.9%)         | 21 (30.4%) |
| Does not apply                                 | 1 (0.7%)               | 0 (0.0%)  | 1 (1.3%)  | 1 (1.4%)           | 0 (0.0%)  |
| Have poor appetite or overeating              | 96 (67.6%)             | 42 (64.6%) | 52 (69.3%) | 47 (64.4%)         | 49 (71.0%) |
| Several days                                   | 45 (31.7%)             | 23 (35.4%) | 22 (29.3%) | 25 (34.3%)         | 20 (29.0%) |
| Does not apply                                 | 1 (0.7%)               | 0 (0.0%)  | 1 (1.3%)  | 1 (1.4%)           | 0 (0.0%)  |
| Have trouble concentrating on things such as reading a newspaper or watching television |                  |         |           |                    |           |
| Not at all                                     | 100 (70.4%)            | 48 (73.9%) | 50 (66.7%) | 50 (68.5%)         | 50 (72.5%) |
| Several days                                   | 41 (28.9%)             | 17 (26.2%) | 24 (32.0%) | 22 (30.1%)         | 19 (27.5%) |
| Does not apply                                 | 1 (0.7%)               | 0 (0.0%)  | 1 (1.3%)  | 1 (1.4%)           | 0 (0.0%)  |
| Have thoughts that you would be better off dead, or thoughts of hurting yourself in some way |                  |         |           |                    |           |
| Not at all                                     | 136 (95.8%)            | 61 (93.9%) | 73 (97.3%) | 69 (94.5%)         | 67 (97.1%) |
| Several days                                   | 5 (3.5%)               | 4 (6.2%)  | 1 (1.3%)  | 3 (4.1%)           | 2 (2.9%)  |
| Does not apply                                 | 1 (0.7%)               | 0 (0.0%)  | 1 (1.3%)  | 1 (1.4%)           | 0 (0.0%)  |
| Have trouble falling or staying asleep, or sleeping too much or had nightmares |                  |         |           |                    |           |
| Not at all                                     | 66 (46.5%)             | 27 (41.5%) | 37 (49.3%) | 29 (39.7%)         | 35 (53.6%) |
| Several days                                   | 75 (52.8%)             | 38 (58.5%) | 37 (49.3%) | 43 (58.9%)         | 32 (46.4%) |
| Does not apply                                 | 1 (0.7%)               | 0 (0.0%)  | 1 (1.3%)  | 1 (1.4%)           | 0 (0.0%)  |
| Emotional wellness during to the pandemic      |                        |         |           |                    |           |
| Feel down, depressed or hopeless               | <0.0001                |          |           | 21 (28.8%)         | 31 (44.9%) |
| Several days                                   | 52 (36.6%)             | 12 (18.5%) | 38 (50.7%) | 52 (71.2%)         | 38 (55.1%) |
| Does not apply                                 | 0 (0.0%)               | 0 (0.0%)  | 0 (0.0%)  | 0 (0.0%)           | 0 (0.0%)  |
| Have poor appetite or overeating              | 0.0021                 |          |           | 31 (42.5%)         | 34 (49.3%) |
| Several days                                   | 65 (45.8%)             | 20 (30.8%) | 43 (57.3%) | 41 (56.2%)         | 35 (50.7%) |
| Does not apply                                 | 1 (0.7%)               | 1 (1.3%)  | 0 (0.0%)  | 1 (1.4%)           | 0 (0.0%)  |
| Have trouble concentrating on things such as reading a newspaper or watching television |                  |         |           |                    |           |
| Not at all                                     | 0.0079                 |          |           | 26 (35.6%)         | 38 (55.1%) |
| Several days                                   | 78 (54.9%)             | 44 (67.7%) | 34 (45.3%) | 47 (64.4%)         | 31 (44.9%) |
| Does not apply                                 | 0 (0.0%)               | 0 (0.0%)  | 0 (0.0%)  | 0 (0.0%)           | 0 (0.0%)  |
| Have thoughts that you would be better off dead, or thoughts of hurting yourself in some way |                  |         |           |                    |           |
| Not at all                                     | 134 (94.4%)            | 59 (90.8%) | 73 (97.3%) | 68 (93.2%)         | 66 (95.7%) |
| Several days                                   | 8 (5.6%)               | 6 (9.2%)  | 2 (2.7%)  | 5 (6.9%)           | 3 (4.4%)  |
| Does not apply                                 | 0 (0.0%)               | 0 (0.0%)  | 0 (0.0%)  | 0 (0.0%)           | 0 (0.0%)  |
| Have trouble falling or staying asleep, or sleeping too much or had nightmares |                  |         |           |                    |           |
| Not at all                                     | 44 (31.0%)             | 12 (18.4%) | 30 (40.0%) | 20 (27.8%)         | 24 (34.8%) |
| Several days                                   | 98 (69.0%)             | 53 (81.5%) | 45 (60.0%) | 53 (72.8%)         | 45 (65.2%) |
| Does not apply                                 | 0 (0.0%)               | 0 (0.0%)  | 0 (0.0%)  | 0 (0.0%)           | 0 (0.0%)  |
| Sleeping habits that have changed***          |                        |         |           |                    |           |
| Trouble falling asleep                         | 53 (37.3%)             | 33 (50.8%) | 20 (26.7%) | 31 (42.5%)         | 22 (31.9%) |
| Trouble staying asleep                         | 59 (41.6%)             | 30 (46.2%) | 29 (38.7%) | 31(42.5%)          | 28 (40.6%) |
| Sleeping too much                              | 11 (7.6%)              | 7 (10.8%)  | 4 (5.3%)  | 7 (9.6%)           | 4 (5.8%)  |
| Had nightmares                                 | 25 (17.6%)             | 15 (23.1%) | 10 (13.3%) | 17 (23.3%)         | 8 (11.6%) |
| Became more emotional                          | 0.0004                 |          |           | 0.0004             |           |
| Yes                                            | 83 (58.5%)             | 50 (76.9%) | 33 (44.0%) | 47 (64.4%)         | 36 (52.2%) |
| No                                             | 59 (41.6%)             | 15 (23.1%) | 42 (56.0%) | 26 (35.6%)         | 33 (47.8%) |
| Felt easily irritated                          | 0.0001                 |          |           | 0.0001             |           |
| Yes                                            | 66 (46.5%)             | 42 (64.6%) | 24 (32.0%) | 36 (49.3%)         | 30 (43.5%) |
| No                                             | 76 (53.5%)             | 23 (35.4%) | 51 (68.0%) | 37 (50.7%)         | 39 (56.5%) |
| Cried                                          | 0.0010                 |          |           | 0.0010             |           |
| Yes                                            | 45 (31.7%)             | 30 (46.2%) | 15 (20.0%) | 28 (38.4%)         | 17 (24.6%) |
| No                                             | 97 (68.3%)             | 35 (53.9%) | 60 (80.0%) | 45 (61.6%)         | 52 (75.4%) |
| Lashed out                                     | 0.0009                 |          |           | 0.0009             |           |
| Yes                                            | 30 (21.1%)             | 22 (33.9%) | 8 (10.7%)  | 19 (26.0%)         | 11 (15.9%) |
| No                                             | 112 (78.9%)            | 43 (66.2%) | 67 (89.3%) | 54 (74.0%)         | 58 (84.1%) |
| Other emotional issues                         | 0.4856                 |          |           | 0.3574             |           |
| Yes                                            | 11 (7.8%)              | 4 (6.2%)  | 7 (9.3%)  | 4 (5.5%)           | 7 (10.1%)  |
| No                                             | 131 (92.3%)            | 61 (93.9%) | 68 (90.7%) | 69 (94.5%)         | 62 (89.9%) |
| Speaking out more regarding COVID-19 to either coworkers, friends, family, and/or media |                  |         |           |                    |           |

(continued on next page)
Religious practices were unchanged. Females, more than males, had empathy changes. A study using the Jefferson Scale of Empathy showed females commonly score higher in empathy than males [44]. Maintaining empathy is essential in preventing burnout [45].

Our study found that physician wellness was negatively affected by the pandemic, particularly in female EM physicians. There has been a paucity of studies investigating gender and years of practice differences in relation to the impact that the COVID-19 pandemic has had on EM physicians' well-being. Female physicians and physicians who have been in practice less than 11 years are more likely to have negative experiences.

### Table 1

| Survey item | Total sample (n = 142) | Gender* | p-Value* | Years of experience | p-Value** |
|-------------|------------------------|---------|----------|---------------------|-----------|
|             | Female (n = 65) | Male (n = 75) |          | <11 years (n = 73) | ≥11 years (n = 69) |
|              |               |          |          |                     |           |
| Never       | 9 (6.3%) | 1 (1.3%) | 8 (10.7%) | 8 (11.0%) | 1 (1.3%) |
| Sometimes   | 59 (41.6%) | 30 (40.1%) | 27 (36.0%) | 26 (34.7%) | 37 (50.7%) | 20 (29.0%) |
| Offers      | 49 (34.5%) | 23 (31.0%) | 26 (34.7%) | 22 (30.1%) | 27 (39.1%) |
| All the time| 25 (17.6%) | 11 (16.9%) | 14 (18.7%) | 10 (13.7%) | 15 (21.7%) |
| Effect of COVID-19 on empathy towards patients | | | | 0.0321 | 0.0766 |
| No change   | 44 (31.0%) | 13 (20.0%) | 29 (38.7%) | 21 (28.8%) | 23 (33.3%) |
| More empathetic | 59 (41.6%) | 31 (47.7%) | 28 (37.3%) | 26 (35.6%) | 33 (47.8%) |
| Less empathetic | 21 (14.8%) | 14 (21.5%) | 7 (9.3%) | 16 (21.9%) | 5 (7.3%) |
| Not sure    | 18 (12.7%) | 7 (10.8%) | 11 (14.7%) | 0 (0.0%) | 0 (0.0%) |

Note: some column percentages may not sum to 100% due to rounding.
* Stratified analysis excludes two respondents who identified as "Other" gender.
** p-Values derived from chi-square tests or Fisher's exact tests were appropriate.
*** Response options are not mutually exclusive.

Table 2

| Intellectual and physical wellness survey results stratified by respondent gender and years of experience. |
|---|---|---|---|---|---|
| Survey item | Total sample (n = 142) | Gender* | p-Value* | Years of experience | p-Value** |
|             | Female (n = 65) | Male (n = 75) |          | <11 years (n = 73) | ≥11 years (n = 69) |
|             |               |          |          |                     |           |
| Intellectual wellness | | | | | |
| Change in non-COVID-19 self-academic reading or learning during the pandemic | 0.1379 | 0.4638 |
| Research, listened, or watched podcasts more | 39 (27.5%) | 12 (18.5%) | 25 (33.3%) | 17 (23.3%) | 22 (31.9%) |
| Researched, listened, or watched podcasts less | 27 (19.0%) | 14 (21.3%) | 13 (17.3%) | 16 (21.9%) | 11 (15.9%) |
| Researched, listened, or watched podcasts more, but all or mostly about COVID-19 | 76 (53.5%) | 39 (60.0%) | 37 (40.3%) | 40 (54.8%) | 36 (52.2%) |
| Read about academic/EBM COVID-19 updates | 0.8158 | 0.0730 |
| Few times a day / daily | 77 (54.2%) | 37 (56.9%) | 39 (52.0%) | 33 (45.2%) | 44 (63.8%) |
| Every other day / twice a week | 40 (28.2%) | 18 (27.7%) | 22 (29.3%) | 24 (32.9%) | 16 (23.2%) |
| Weekly / rarely | 25 (17.6%) | 10 (15.4%) | 14 (18.7%) | 16 (21.9%) | 9 (13.0%) |
| Listened to the news or used other social media to get updates on the pandemic | 0.4755 | 0.2128 |
| Few times a day / daily | 118 (83.1%) | 56 (86.2%) | 62 (82.7%) | 57 (78.1%) | 61 (88.4%) |
| Every other day / twice a week | 13 (9.2%) | 4 (6.2%) | 9 (12.0%) | 8 (11.0%) | 5 (7.3%) |
| Weekly / rarely | 11 (7.8%) | 5 (7.7%) | 4 (5.3%) | 8 (11.0%) | 3 (4.4%) |
| Physical wellness | | | | | |
| Use of sleeping aids to fall asleep prior to the pandemic | 0.0653 | 0.1845 |
| Never | 88 (62.0%) | 41 (63.1%) | 46 (61.3%) | 45 (61.6%) | 43 (62.3%) |
| Sometimes | 46 (32.4%) | 17 (26.3%) | 28 (37.3%) | 21 (28.8%) | 25 (36.2%) |
| Offers | 6 (4.3%) | 5 (7.7%) | 1 (1.3%) | 5 (6.9%) | 1 (1.5%) |
| All of the time | 2 (1.4%) | 2 (3.1%) | 0 (0.0%) | 2 (2.7%) | 0 (0.0%) |
| Change in use of sleeping aids to fall asleep during the pandemic | 0.6357 | 0.4881 |
| No, never used sleeping aids | 81 (57.0%) | 35 (53.9%) | 45 (60.0%) | 41 (56.2%) | 40 (58.0%) |
| No, used the same amount | 39 (27.5%) | 17 (26.2%) | 21 (28.0%) | 20 (27.4%) | 19 (27.3%) |
| Yes, used more | 19 (13.4%) | 11 (16.9%) | 8 (10.7%) | 9 (12.3%) | 10 (14.5%) |
| Yes, sleeping aid stopped working | 3 (2.1%) | 2 (3.1%) | 1 (1.3%) | 3 (4.1%) | 0 (0.0%) |
| Effect of pandemic on exercise routine | 0.1585 | 0.0708 |
| Does not apply, I do not exercise | 21 (14.8%) | 13 (20.0%) | 8 (10.7%) | 8 (11.0%) | 13 (18.8%) |
| I worked out much less | 57 (40.1%) | 31 (47.7%) | 26 (34.7%) | 37 (50.7%) | 20 (29.0%) |
| I worked out more | 27 (19.0%) | 9 (13.9%) | 18 (24.0%) | 15 (20.6%) | 12 (17.4%) |
| I had to change my exercise routine | 18 (12.9%) | 6 (9.2%) | 12 (16.0%) | 7 (9.6%) | 11 (15.9%) |
| I joined virtual classes to continue with my routine | 8 (5.6%) | 2 (3.1%) | 6 (8.0%) | 2 (2.7%) | 6 (8.7%) |
| Other | 11 (7.6%) | 4 (6.2%) | 5 (6.7%) | 4 (5.5%) | 7 (10.1%) |
| Alcohol use during pandemic | 0.0049 | 0.3312 |
| I drank less | 16 (11.3%) | 7 (10.8%) | 9 (12.0%) | 9 (12.3%) | 7 (10.1%) |
| I drank more | 35 (24.7%) | 22 (33.9%) | 13 (17.3%) | 22 (30.1%) | 13 (18.8%) |
| I drank the same | 53 (37.3%) | 15 (23.1%) | 38 (50.7%) | 26 (35.6%) | 27 (39.1%) |
| Does not apply, I do not drink | 38 (26.8%) | 21 (32.3%) | 15 (20.0%) | 16 (21.9%) | 22 (31.9%) |

*** Response options are not mutually exclusive.
* Stratified analysis excludes two respondents who identified as "Other" gender.
** p-Values derived from chi-square tests or Fisher’s exact tests where appropriate.
Table 3
Financial and social wellness survey results stratified by respondent gender and years of experience.

| Survey item | Total sample (n = 142) | Gender \* \* | p-Value | Years of experience | p-Value \* \* \* |
|-------------|------------------------|--------------|---------|---------------------|------------------|
| Financial wellness | | | | | |
| Financial effect of pandemic | | | | | |
| Worked less and thus, made less | 16 (11.3%) | 7 (10.8%) | 9 (12.0%) | 0.6666 | 0.7710 |
| Lost savings/retirement or investments | 8 (5.6%) | 2 (3.1%) | 6 (8.0%) | 0.455 | 4 (5.8%) |
| Worked more and thus, had greater compensation | 21 (14.8%) | 9 (13.9%) | 10 (13.3%) | 0.137 | 8 (11.6%) |
| Stayed the same, no change | 97 (68.3%) | 47 (72.3%) | 50 (66.7%) | 0.48 | 49 (71.0%) |
| Will retire later than originally planned due to financial effects of the pandemic | 0.0734 | 0.4057 |
| Yes | 7 (4.9%) | 3 (4.6%) | 4 (5.3%) | 2 (2.7%) | 5 (7.3%) |
| No | 81 (57.0%) | 31 (47.7%) | 50 (66.7%) | 42 (57.5%) | 39 (56.5%) |
| Maybe | 50 (35.2%) | 30 (46.2%) | 20 (26.7%) | 28 (38.4%) | 22 (31.9%) |
| Other | 4 (2.8%) | 1 (1.5%) | 1 (1.3%) | 1 (1.4%) | 3 (4.4%) |
| Social wellness during the pandemic | 0.0111 | 0.5918 |
| Connected with friends and family | 109 (76.8%) | 57 (87.7%) | 52 (69.3%) | 58 (79.5%) | 51 (73.9%) |
| More often than prior to the pandemic | 9 (6.3%) | 4 (6.2%) | 5 (6.7%) | 5 (6.9%) | 4 (5.8%) |
| No change | 24 (16.9%) | 4 (6.2%) | 18 (24.0%) | 10 (13.7%) | 14 (20.3%) |
| Methods used to destress at home | 0.0064 | 0.0059 |
| Alcohol | 42 (29.6%) | 21 (32.3%) | 21 (28.0%) | 29 (39.7%) | 13 (18.8%) |
| Read books | 40 (28.2%) | 17 (26.3%) | 22 (29.3%) | 0.6756 | 20 (27.4%) | 20 (28.0%) | 0.8550 |
| Watched a movie | 101 (72.1%) | 48 (73.9%) | 53 (70.7%) | 0.6756 | 53 (72.6%) | 48 (69.6%) | 0.6897 |
| Exercised | 73 (51.4%) | 26 (40.0%) | 47 (61.3%) | 0.0118 | 37 (50.7%) | 36 (52.2%) | 0.8592 |
| Listened to music | 30 (21.1%) | 14 (21.5%) | 15 (20.0%) | 0.8227 | 20 (27.4%) | 13 (18.8%) | 0.0064 |
| Shopped online | 57 (40.1%) | 57 (40.1%) | 40 (54.5%) | 0.0010 | 32 (43.8%) | 25 (36.2%) | 0.3556 |
| Explored the web | 56 (39.4%) | 26 (59.5%) | 31 (41.3%) | 0.0001 | 28 (59.5%) | 28 (40.6%) | 0.3556 |
| Spoke to family/friends | 108 (76.1%) | 49 (75.4%) | 59 (78.7%) | 0.0001 | 58 (79.5%) | 50 (72.5%) | 0.0059 |
| Other | 18 (12.7%) | 5 (7.7%) | 13 (17.4%) | 6 (8.2%) | 1 (1.5%) |
| Concern about physical appearance during the pandemic | | | | | |
| More concerned about appearance | 7 (4.9%) | 5 (7.7%) | 2 (2.7%) | 6 (8.2%) | 1 (1.5%) |
| Less concerned about appearance | 72 (50.7%) | 45 (69.2%) | 27 (36.0%) | 43 (58.9%) | 29 (42.0%) |
| No change | 63 (44.4%) | 15 (23.1%) | 48 (61.3%) | 24 (32.9%) | 39 (56.5%) |
| Note: some column percentages may not sum to 100% due to rounding. |

\* Stratified analysis excludes two respondents who identified as “Other” gender. 
** p-Values derived from chi-square tests or Fisher’s exact tests where appropriate.
*** Response options are not mutually exclusive.

---

Table 4
Environmental and spiritual wellness survey results stratified by respondent gender and years of experience.

| Survey item | Total sample (n = 142) | Gender \* \* | p-Value | Years of experience | p-Value \* \* \* |
|-------------|------------------------|--------------|---------|---------------------|------------------|
| Environmental | | | | | |
| Worried about safety due to reusing N95 for 1 week | 0.0098 | 0.5208 |
| Yes | 90 (63.4%) | 49 (75.4%) | 41 (52.0%) | 45 (61.6%) | 45 (65.2%) |
| No | 47 (33.1%) | 14 (21.5%) | 33 (44.5%) | 24 (32.9%) | 23 (33.3%) |
| Other | 5 (3.5%) | 2 (3.1%) | 3 (4.0%) | 4 (5.5%) | 1 (1.5%) |
| Took a break to eat and drink during shift | 0.0042 | 0.0013 |
| Yes, ate more due to all the food being donated | 34 (23.4%) | 14 (21.5%) | 20 (26.7%) | 13 (17.8%) | 21 (30.4%) |
| Yes, ate/hydrated as usual | 31 (21.8%) | 6 (9.2%) | 25 (33.3%) | 9 (12.3%) | 22 (31.9%) |
| No, ate/hydrated less due to having less time | 50 (35.2%) | 30 (46.2%) | 20 (25.3%) | 33 (45.2%) | 17 (24.6%) |
| No, did not eat or drink during shift due to concern about self-contamination | 22 (15.5%) | 13 (20.0%) | 9 (12.0%) | 16 (21.9%) | 6 (8.7%) |
| Other | 5 (3.5%) | 2 (3.1%) | 2 (2.7%) | 2 (2.7%) | 3 (4.4%) |
| Isolation from family | 0.3703 | 0.2269 |
| Moved out and did not see family | 10 (7.0%) | 7 (10.8%) | 3 (4.0%) | 4 (5.5%) | 6 (8.7%) |
| Stayed in a separate room with minimal to no interaction with family | 22 (15.5%) | 8 (12.3%) | 14 (18.7%) | 10 (13.7%) | 12 (17.4%) |
| Continued living with family | 89 (62.7%) | 41 (61.3%) | 48 (64.0%) | 44 (60.3%) | 45 (65.2%) |
| Does not apply, live alone | 21 (14.8%) | 9 (13.5%) | 10 (13.3%) | 15 (20.6%) | 6 (8.7%) |
| Spiritual wellness | | | | | |
| Practice or affiliate with any religion | 0.7637 | 0.3873 |
| Yes | 89 (62.7%) | 40 (61.5%) | 48 (64.0%) | 43 (58.9%) | 46 (66.7%) |

(continued on next page)
effects. The study informs what aspects of wellness require support as post COVID-19 physician well-being recovers.

Financial support

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Author contribution

HL, NB and NG conceived the study, and designed the trial. We had no research funding. HL, NB, and NG supervised the conduct of the study. We had access to all the data, and the corresponding author had final responsibility for the paper. HL takes responsibility for the paper as a whole.

Financial support

No conflicts of interest.

References

[1] Wallace JL, Lemaire JR, Ghali WA, Physician wellness: a missing quality indicator. Lancet. 2000;354:1714-21.
[2] Shreffler J, Petry J, Huerker M. The impact of COVID-19 on healthcare worker well-being: a scoping review. West J Emerg Med. 2020 Aug 17;21(5):1059-66.
[3] Lu W, Wang H, Lin Y, et al. Psychological status of medical workforce during the COVID-19 pandemic: a cross-sectional study. Psychiatry Res. 2020;288:112936.
[4] Preti E, DiMattere V, Perего G, et al. The psychological impact of epidemic and pandemic outbreak on healthcare workers: rapid review of the evidence. Curr Psychiatry Rep. 2020;22(8):61. Published 2020 Jul 10.
[5] Schecter A, Diaz F, Moise N, et al. Psychological distress, coping behaviors and preferences for support among New York healthcare workers during the COVID-19 pandemic. Gen Hosp Psychiatry. 2020;66:1-8.
[6] Patel RS, Bachu R, Allkey M, et al. Factors related to physician burnout and its consequences. Behav Sci. 2018;8:98.
[7] Gemine R, Davies GR, Tarrant S, et al. Factors associated with work-related burnout in NHS staff during COVID-19: a cross-sectional mixed methods study. BMJ Open. 2021;11(1):e042531.
[8] Stehman CR, Testo Z, Gershaw RS, et al. Burnout, drop out, suicide: physician loss in emergency medicine, part 1. West Emerg Med. 2019;20(3):485-94. https://doi.org/10.1081/ww/em11.1.48070.
[9] Shah K, Chaudhuri C, Kannan D, et al. How essential is to focus on physician’s health and burnout in coronavirus (COVID-19) pandemic? Cureus. 2020;12(4):e7538. Published 2020 Apr 4. https://doi.org/10.7759/cureus.7538.
[10] O'Dowd E, O'Connor F, Lydon S, et al. Stress, coping and psychological resilience among physicians. BMC Health Serv Res. 2018;18:730.
[11] Rao S, Ferris TG, Hidrue MK, et al. Physician burnout, engagement and career satisfaction in a large academic medical practice. Clin Med Res. 2020;18(1):3–10. https://doi.org/10.1017/cmr.2019.1516.
[12] Patrini L, Thostathil P, Shih G, et al. Ask the question, be the solution: fostering well-being through contextualized assessment and strategy development. Ped Anesth. 16 September 2020. https://doi.org/10.1111/pan.14087.
[13] Gerber B, Scriba J, Geiser A, et al. Pilot study on subjectively and objectively measurable stress reduction in the daily routine of a university anesthesiology department by an intervention program according to mindfulness-based stress reduction. Gerber Anaesthesist. 2020 Sep;69(9):623–31. https://doi.org/10.1007/s00101-020-00802-w. (Epub2020Jun19).
[14] West CP, Dybyre LN, Shanafelt TD, Physician burnout: contributors, consequences and solutions. J Intern Med. 2018 Jun;283(6):516–29. https://doi.org/10.1111/joim.12752. (Epub2018Mar24).
[15] Carmassi C, Foghi C, Dell’Oste V, et al. PTSD symptoms in healthcare workers facing the three coronavirus outbreaks: what can we expect after the COVID-19 pandemic. Psychiatry Res. 2020;292:113312. https://doi.org/10.1016/j.psychres.2020.113312.
[16] Lai, J, Ma S, Wang Y, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. JAMA Netw Open. 2020;3(3):e200376. https://doi.org/10.1001/jamanetworkopen.2020.39756.
[17] Batra K, Singh TP, Sharma M, et al. Investigating the psychological impact of COVID-19 among health care workers: a meta-analysis. Int J Environ Res Public Health. 2020;17:23:9086. Published 2020 Dec 5. https://doi.org/10.3390/ijerph17129086.
[18] De Kock JL, Latham HA, Leslie SJ, et al. A rapid review of the impact of COVID-19 on the mental health of healthcare workers: implications for supporting psychological well-being. BMC Public Health. 2021;21(1):104. Published 2021 Jan 31. https://doi.org/10.1186/s12889-021-11007-z.
[19] Zheng W, Wang K, Yin L, et al. Mental health and psychosocial problems of mental health workers during the COVID-19 epidemic in China. Psychoso Soc. 2020;89(4):1–9. https://doi.org/10.11191/00057639.
[20] Halt LH, Johnson J, Watt I, Tispa A, O’Connor DB. Healthcare staff wellbeing, burnout, and patient safety: a systematic review, PLoS One 11(7):e0159015. Published 2016 Jul 8. https://doi.org/10.1371/journal.pone.0159015.
[21] Nanda A, Wasan A, Sussman J. Provider health and wellness. J Allergy Clin Immunol Pract. 2017;5:1543–8.
[22] Epel E, Lapidus R, McEwen. Stress may add bite to appetite in women: a laboratory study of stress-induced cortisol and eating behavior. Psychoneuroendocrinology. 2001;26:37–49.
[23] Owen A, Tran T, Hammerheg K, et al. Poor appetite and overeating reported by adults in Australia during the coronavirus-19 disease pandemic: a population-based study. Public Health Nutr. 2020;23:1–7.
[24] Denzontrot P, Nicholls W, Fullerton C. A systematic review of the association between emotions and eating behavior in normal and overweight adult population. J Health Psychol. 2019 Jan;24(1):24. https://doi.org/10.1177/1359105319879813. (Epub2017Mar20).
[25] Chatterjee SS, Charakabarti M, Banerjee D, et al. Stress, sleep and psychological impact in healthcare workers during the early phases of COVID-19 in India: a factor analysis, Front Psychol 12:61314.
[26] Garcia-Iglesias JJ, Gomez-Salgado J, Martin-Pereira J, et al. Impacts of SARS-CoV-2 (COVID-19) on the mental health of healthcare professionals: a systematic review. Rev Esp Salud Publ. 2020 Jul 21;94:e202007088.
[27] Sinha R. Chronic stress, drug use, and vulnerability to addiction. Ann N Y Acad Sci. 2008;1141:105–30. https://doi.org/10.1196/annals.1441.030.
[28] Banal P, Bingenmann TA, Greenhawt M, et al. Clinician wellness during the COVID-19 pandemic: extraordinary times and unusual challenges of the allergist/immunologist, J Allergy Immunol Pract. 2020. https://doi.org/10.1016/j.jaip.2020.04.001.
[29] Schrãrammer E. Taking their own lives—the high rate of physician suicide. N Engl J Med. 2005;352:2473–6.
[30] Levine C, Grady C, Block T, et al. Use, re-use or discard? Quantitatively defined vari- ance in the functional integrity of N95 respirators following vaporized hydrogen peroxide decontamination during the COVID-19 pandemic. J Hosp Infect. 2021;107:506. https://doi.org/10.1016/j.jhin.2020.10.007.
[31] Hojat M, Gonnella J, Nasca T. The Jefferson scale of physician empathy: development and the preliminary psychometric data. Educ Psychol Measur. 2001;61:349–65. https://doi.org/10.1177/0013164401610301.
[32] Yuore O, Forne C, Esquereda M, et al. Empathy and burnout of emergency profession- als of a health region:a cross-sectional study. Medicine (Baltimore). 2017;96(24):e88.
[33] Odom-Forren J. Nursing resilience in the world of COVID-19. J Perianesth Nurs. 2020;35(6):555–6. https://doi.org/10.1016/j.jpan.2020.10.005.
[34] ...