Psychosocial factors associated with symptoms of generalized anxiety disorder in general practitioners during the COVID-19 pandemic

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ABSTRACT
Healthcare providers commonly experience symptoms of anxiety during public health crises and pandemics. The objective of the study was to identify the frequency of symptoms of generalized anxiety disorder (GAD) in general practitioners and to estimate the association with particular psychosocial and demographic factors. This is a cross-sectional study, where a total of 531 general practitioners completed an online form that contained sociodemographic variables, questions about fear and perceptions concerning medical work during the COVID-19 pandemic, 7-Item Generalized Anxiety Disorder Scale (GAD-7), questionnaire on psychosomatic problems and Fear of COVID-19 Scale. The presence of symptoms of GAD was defined by a GAD-7 score of 10 or more points. Voluntary and anonymous participation, acceptance of terms, and informed consent were requested. A p value of <0.05 was considered statistically significant. Symptoms of GAD were identified in 4 out of 10 Colombian general practitioners; the following psychosocial and demographic factors were associated with a greater presence of these symptoms: female gender, social discrimination, anguish, job disappointment, nightmares, stress and other symptoms of fear regarding the pandemic. Conversely, feeling protected by the state or employer, being satisfied with their job as a physician, and trusting government measures and information to promote wellness and to estimate the association with particular psychosocial and demographic factors. This is a cross-sectional study, where a total of 531 general practitioners completed an online form that contained sociodemographic variables, questions about fear and perceptions concerning medical work during the COVID-19 pandemic, 7-Item Generalized Anxiety Disorder Scale (GAD-7), questionnaire on psychosomatic problems and Fear of COVID-19 Scale. The presence of symptoms of GAD was defined by a GAD-7 score of 10 or more points. Voluntary and anonymous participation, acceptance of terms, and informed consent were requested. A p value of <0.05 was considered statistically significant. Symptoms of GAD were identified in 4 out of 10 Colombian general practitioners; the following psychosocial and demographic factors were associated with a greater presence of these symptoms: female gender, social discrimination, anguish, job disappointment, nightmares, stress and other symptoms of fear regarding the pandemic. Conversely, feeling protected by the state or employer, being satisfied with their job as a physician, and trusting government measures and information to promote wellness and to ensure the availability of mental health services for healthcare workers during public health crises and pandemics.

INTRODUCTION
COVID-19, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was first identified in Wuhan, China, in December 2019.1 It was declared by the WHO as a public health emergency of international concern.2,3 With more than five million cases and 340 000 deaths confirmed worldwide in mid-May 2020, COVID-19 is likely the worst public health catastrophe in a century, with severe negative sociopolitical and humanitarian repercussions throughout the world.4

In Colombia, the first confirmed case was identified on 6 March 2020. Despite the daily increase in morbidity and mortality rates, there...
is currently no overflow in the healthcare system’s capacity. More than 20,200 cases and 705 deaths were confirmed after 2.5 months of the pandemic, the country being under various degrees of quarantine, including 169 cases and 4 deaths in health professionals. It has been noted that physicians who take care of patients during epidemics or pandemics may be more likely to experience fear, anxiety, stress, or depression. The following factors can contribute to this mental health deterioration: excessive working hours, disadvantageous employment contracts, insufficient personal protective equipment, and exposure to the virus, with risks to their health or those of their families. In this regard, studies on health professionals in Latin America are scarce. No psychosocial assessments were identified in Colombian general practitioners in times of epidemics.

The objective of this study was to identify the frequency of symptoms of generalized anxiety disorder (GAD) and to estimate associations with particular psychosocial and demographic factors.

MATERIALS AND METHODS
Design and population
This is a cross-sectional study that is part of the research project Dinámicas Psicosociales en Universitarios (DISEU), which belongs to the Colectivos Universitarios research line. Scientific, technical, and administrative standards for health research, as established in resolution 8430–1993 of the Republic of Colombia, were considered. No compensation was offered for participation. In 2018, it was reported that 65,939 general practitioners were working in Colombia. Using the online Netquest calculator, it was estimated that 385 subjects should be included in the study, with a sample size with heterogeneity of 50%, a confidence level of 95% and a margin of error of 5%.

In the first 5 days of April 2020, an open invitation to fill out an online form was sent through WhatsApp, Facebook, and email to general practitioners who worked in Colombia during March of that year. They had to apply their responses to the 24–30 March period, when the country was in a health emergency, in the initial phase of containment, with little community compliance to the government measures and under the strong presence of catastrophic information from Europe and Asia.

Once the reception of forms from the electronic platform Google Forms was finished, the database automatically generated in Microsoft Excel was downloaded. The information regarding the subject’s email was deleted to preserve anonymity. Forms from subjects who claimed to be general practitioners who worked in Colombia during March of that year. They had to apply their responses to the 24–30 March period, when the country was in a health emergency, in the initial phase of containment, with little community compliance to the government measures and under the strong presence of catastrophic information from Europe and Asia.

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RESULTS
The study was conducted in 531 subjects, 37.9% above the calculated sample size. Of the general practitioners, 47.9% were over the age of 30 years old and 59.5% were female. Of a total of 209 (39.3%) (95% CI 35.2% to 43.6%) with symptoms of GAD and 322 (60.6%) (95% CI 56.3% to 64.8%) without symptoms of GAD, the group with symptoms of GAD had a lower mean age and included a higher proportion of female gender (table 1).

Subjects with symptoms of GAD most often reported fear of having presented symptoms of COVID-19, fear of taking the virus home, disappointment at work, feeling anguished about going to work the next day and considering quitting their job to protect family members, compared with those of GAD, specifically moderate and severe symptoms. In the original study, this cut-off point optimized sensitivity (89%) and specificity (82%) for the diagnosis of GAD. This tool has good reliability, as well as criterion, construct, factorial, and procedural validity. Next, the questionnaire on psychosomatic problems, also called the Work-related Stress Test, is derived from a wide range of tools that explore burnout syndrome in various work activities. It consists of 12 questions about somatizations, each one with six Likert-type answer options, to assign from 1 to 6 points. The higher the score of each item or a total score of the scale, the worse the evaluation. Work-related stress is established with a score equal to or greater than 25. No studies reporting psychometric evaluations were identified. Finally, the Fear of COVID-19 Scale (FCV-19S). It consists of seven questions, each one assessed with five Likert-type answer options. For the present report, the three lowest scores were considered as a positive response; the two highest scores were considered as a negative response. Reliability values, such as internal consistency, α Cronbach=0.82 and test-retest reliability, interclass correlation coefficient=0.72, were acceptable.
without symptoms of GAD (p<0.05). Half of the group with symptoms of GAD and 30% of the group without symptoms of GAD reported experiencing social discrimination for working as a general practitioner (p<0.05) (table 2).

Item scores and total score of the questionnaire on psychosomatic problems were higher in general practitioners with symptoms of GAD (p<0.001). Work-related stress was identified in 64.4% of all the subjects, in 95.2% of those with symptoms of GAD and in 44.5% of those without symptoms of GAD (p<0.01) (table 3). Subjects with symptoms of GAD had a greater presence of symptoms regarding fear of COVID-19. The most commonly reported symptoms regarding fear of COVID-19 were being afraid of losing life because of COVID-19 by 98% of the subjects with symptoms of GAD and feeling the heart race or palpitate when thinking about getting COVID-19 by 81.3% of the subjects with symptoms of GAD (table 4).

Several psychosocial and demographic factors, especially symptoms regarding fear of COVID-19, as well as female gender, were associated with a greater presence of symptoms of GAD. Feeling protected by the state or employer, being satisfied working as a physician and considering COVID-19 testing capabilities and governmental measures to be sufficient were associated with a lower presence of symptoms of GAD (table 5). Positive and moderate correlation coefficients were observed between all the items and the total score of the questionnaire on psychosomatic problems with the total score of GAD-7 (table 6).

**DISCUSSION**

Anxiety is an adaptive emotional and behavioral response to threatening stimuli and is essential for survival. Symptoms of GAD were found in 4 out of 10 subjects, similar to that reported by Lai et al and higher than that reported by Lu et al in doctors and health professionals, respectively, during the current pandemic. In a study using Depression, Anxiety, and Stress Scale-21, anxiety was found in 39.5% of 152 physicians in India, on the same dates the present study was conducted. Lower frequencies have been reported by other authors, 13.0% in Wuhan and 10.8% in Singapore in physicians and nurses, also in the middle of COVID-19. Several factors can explain the differences, especially cultural patterns and psychosocial, environmental, and work influences. Also, the evolution of the infectious event in terms of morbimortality and impact on society, is important.

Fear and negative perceptions concerning medical work during the COVID-19 pandemic were significantly higher among general practitioners with symptoms of GAD. Among these, more than 90% reported fear of catching the virus at work and fear of taking the virus home. Lu et al indicate that the concern about being infected is a contributing factor to psychological pressure on medical personnel. Fear of infection has a negative psychological effect on health professionals who take care of patients during epidemics. In the severe acute respiratory syndrome (SARS) epidemic, health workers expressed fear and guilt about exposing their family to the infection and felt conflicted between their roles as healthcare providers and parents.

In this study, half of the professionals who reported anxiety symptoms also experienced social discrimination for working as a general practitioner. Lee et al reported that experiencing discrimination was associated with anxiety disorders and depression. During the current pandemic, stigma and social discrimination have been generated against people who may have been exposed to the SARS-CoV-2 virus. In the 2003 SARS epidemic, healthcare professionals reported feeling stigmatized and also reported avoiding identifying themselves as hospital workers. Social discrimination can represent an obstacle in the search for psychological help, a disturbance in social cohesion, increased isolation, and a reduction in the ability to adopt healthy behaviors. Anxiety is closely related to psychological stress and work-related stress. A significantly greater presence of work-related stress was observed among professionals with symptoms of GAD. A similar finding was also reported by Chua et al. Work-related stress is one of the most important factors in the development of burnout syndrome. The overload on institutional capacity, long work hours, the limited availability of efficient protocols, the lack of personal protective equipment, diagnostic tests, or other hospital supplies are challenges for health systems that can contribute to burnout syndrome in times of epidemics. Professional burnout is also associated with poor job performance and acute and chronic health problems.
Anxious states are also related to physical manifestations, as a consequence of hormonal influences and somatovegetative mechanisms. All these were identified in the group of general practitioners evaluated. It has been asserted that individuals with somatic symptoms seem to be more aware of the possibility of getting sick. Stress can  

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Original research

Table 3  Questionnaire on psychosomatic problems

| Items                                      | Total§ N=531 (100.0%) | With symptoms of generalized anxiety disorder n=209 (39.3%) | Without symptoms of generalized anxiety disorder n=322 (60.6%) | P value |
|--------------------------------------------|------------------------|-------------------------------------------------------------|-------------------------------------------------------------|---------|
| Unable to fall asleep                      | 3.0±1.4                | 4.0±1.2                                                     | 2.4±1.2                                                     | <0.001* |
| Migraines and headaches                    | 3.0±1.5                | 3.9±1.3                                                     | 2.4±1.3                                                     | <0.001* |
| Indigestion or gastrointestinal complaints | 2.6±1.5                | 3.4±1.5                                                     | 2.1±1.3                                                     | <0.001† |
| Extremely tired or exhausted               | 3.2±1.5                | 4.1±1.3                                                     | 2.6±1.4                                                     | <0.001* |
| Eat, drink, or smoke more than usual       | 3.1±1.7                | 4.0±1.6                                                     | 2.6±1.5                                                     | <0.001* |
| Decreased sexual interest                  | 2.8±1.6                | 3.6±1.6                                                     | 2.2±1.4                                                     | <0.001* |
| Shortness of breath or choking sensation   | 1.8±1.3                | 2.4±1.5                                                     | 1.4±0.8                                                     | <0.001† |
| Decreased appetite                         | 1.9±1.3                | 2.6±1.4                                                     | 1.5±0.9                                                     | <0.001† |
| Muscle tremors                             | 1.6±1.1                | 2.1±1.4                                                     | 1.3±0.7                                                     | <0.001† |
| Pinpricks in different parts of your body  | 2.0±1.4                | 2.8±1.6                                                     | 1.5±1.0                                                     | <0.001† |
| Strongly tempted not to get up in the morning | 2.7±1.6             | 3.5±1.6                                                     | 2.3±1.4                                                     | <0.001* |
| Tendency to sweat or have palpitations    | 1.8±1.3                | 2.5±1.5                                                     | 1.3±0.7                                                     | <0.001† |
| Total score                                | 30.1±11.5              | 39.4±9.6                                                     | 24.1±8.1                                                     | <0.001† |

Presence of work-related stress

Source: Own elaboration.
*Analysis of variance.
†Mann-Whitney/Wilcoxon test.
‡χ².
§Cronbach’s alpha=0.873.

reduce the capacity of the immune system, predisposing to a greater opportunity to acquire the infection.

In the 2003 SARS outbreak, Maunder et al reported that in patients and workers of a university hospital, the anxiety peaks coincided with the presence of feverish sensation. We observed that fear of having presented symptoms of COVID-19 was associated with twice the presence of symptoms of GAD.

We found that several of the COVID-19 fear symptoms were significantly more frequent and associated with symptoms of GAD. From the early stages of epidemics, fear and anxiety are present, as unconscious physiological mechanisms of survival and defense of the individual in the face of the aggressions of infectious agents. Later, they can become pathological, affecting general well-being, the ability to act rationally, and decision-making.24 34

It was found that the female gender, compared with the male, was associated with twice the presence of symptoms of GAD in the initial phase of containment. Zhang et al, in a cross-sectional study during the mitigation phase of the COVID-19 pandemic in China, concluded that the female gender was associated with increased anxiety, depression, insomnia, and obsessive–compulsive symptoms.6 Lai et al observed a 69% increase in the presence of anxiety in women.16 In general, Gong et al have indicated that women have OR=1.81 (95% CI 1.37 to 2.38) and OR=1.57 (95% CI 1.21 to 2.03) for anxiety and depressive symptoms, respectively.35

Our results indicate that general practitioners’ perception of being protected by the state or employer was associated with 43% less presence of symptoms of GAD. At the same time, in China, Chua et al reported that feeling confident about infection control was associated with a lower level of stress and fewer negative psychological effects. Awareness of the importance of hygiene was reported as a positive psychological effect.8 Fortunately, 90% of the physicians studied, with no differences according to the presence of symptoms

Table 4  Fear of COVID-19 Scale

| Items                                      | Total† n=531 (100.0%) | With symptoms of generalized anxiety disorder, n=209 (39.3%) | Without symptoms of generalized anxiety disorder, n=322 (60.6%) | P value* |
|--------------------------------------------|------------------------|-------------------------------------------------------------|-------------------------------------------------------------|---------|
| Most afraid of COVID-19                    | 437 (82.3) (78.7 to 85.4) | 191 (91.3) (86.7 to 94.8) | 246 (74.6) (71.4 to 80.7) | <0.001* |
| Uncomfortable to think about COVID-19      | 417 (78.5) (74.7 to 81.9) | 192 (91.8) (87.3 to 95.1) | 225 (69.8) (64.4 to 74.7) | <0.001* |
| Hands become clammy when thinking about COVID-19 | 368 (69.3) (65.1 to 73.1) | 111 (53.1) (46.1 to 60.0) | 257 (79.8) (74.9 to 83.9) | <0.001* |
| Afraid of losing life because of COVID-19 | 377 (71.0) (66.9 to 74.7) | 205 (98.0) (95.1 to 99.4) | 172 (53.4) (47.8 to 58.9) | <0.001* |
| Nervous or anxious when watching news and stories about COVID-19 | 357 (67.2) (63.0 to 73.1) | 201 (96.1) (92.6 to 98.3) | 156 (48.4) (42.8 to 54.0) | <0.001* |
| Unable to sleep because of worry about getting COVID-19 | 308 (58.8) (49.5 to 58.1) | 166 (79.4) (73.3 to 84.6) | 120 (37.2) (32.0 to 42.8) | <0.001* |
| Heart races or palpitations when thinking about getting COVID-19 | 343 (64.6) (60.3 to 68.6) | 81 (38.7) (32.1 to 45.7) | 262 (81.3) (76.5 to 85.3) | <0.001* |

Source: Own elaboration.
*χ².
†Cronbach’s alpha=0.598.
of GAD, complied with a disinfection protocol when they got home.

This study has the limitations of cross-sectional studies, establishing statistical association and non-causality. Although a larger number of subjects were included than the sample size, there may be an underestimate or overestimate in the results. FCV-19S was used, not yet validated in Spanish, and low reliability was obtained. No study was found that estimated the reliability of the questionnaire on psychosomatic problems. There were no questions about the availability and use of personal protective equipment, care for patients proven to have COVID-19, or the pre-existence of personal or family anxiety traits. The strength of this study is to be among the first to address mental health aspects of Colombian general practitioners in times of pandemics, carried out using the GAD-7, an international scale of adequate reliability. The virtual strategy to call and receive the information allowed the participation of a good number of professionals from different Colombian geographical regions but limited reaching a representative sample and being able to demonstrate compliance with the inclusion criteria, generating some biases.

During and after epidemics, a greater presence of psychiatric disorders has been observed, with an impact on attention, understanding, decision-making, and general well-being. In conclusion, symptoms of GAD were identified in 4 out of 10 Colombian general practitioners. Psychosocial and demographic factors were associated with symptoms of GAD. These findings bring to understanding the need for early mental health screening in healthcare providers during times of public health emergencies and highlight the importance of timely psychotherapeutic and psychopharmacological interventions in these individuals. Future research on this regard should focus on assessing the impact of therapeutic interventions in the presence of anxiety symptoms. It is recommended that government and healthcare entities deploy multidisciplinary teams of mental health providers capable of implementing programs that benefit adjustment, prevent mental illness, and promote recovery in healthcare providers during social and public health crises, especially when routine capacity has been overwhelmed.

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### Table 5 Psychosocial and demographic factors associated with symptoms of generalized anxiety disorder, not adjusted logistic regression (N=531)

| Variables                                      | OR (95% CI)     | P value |
|------------------------------------------------|----------------|---------|
| Stressed since the beginning of the pandemic   | 16.68 (7.59 to 36.63) | <0.001 |
| Unable to sleep because of worry about getting COVID-19 | 6.49 (4.33 to 9.73) | <0.001 |
| Fear of taking the virus home                  | 5.76 (1.72 to 19.33) | 0.004   |
| Uncomfortable to think about COVID-19          | 4.86 (2.80 to 8.43) | <0.001 |
| Anguished about going to work the next day    | 4.76 (2.94 to 7.70) | <0.001 |
| Anguished since the beginning of the pandemic  | 4.55 (2.95 to 7.01) | <0.001 |
| Consider quitting job to protect family members | 4.28 (2.94 to 6.22) | <0.001 |
| Nightmares about COVID-19                      | 3.84 (2.62 to 5.62) | <0.001 |
| Fear of consulting health services as a patient | 3.27 (1.89 to 5.66) | <0.001 |
| Most afraid of COVID-19                        | 3.27 (1.89 to 5.66) | <0.001 |
| Disappointment at work                         | 3.05 (2.09 to 4.45) | <0.001 |
| Female versus male                             | 2.66 (1.82 to 3.87) | <0.001 |
| Fear of reaching morbidity and mortality rates similar to China | 2.27 (1.09 to 4.71) | 0.027   |
| Social discrimination for working as a general practitioner | 2.25 (1.57 to 3.22) | <0.001 |
| Fear of having presented symptoms of COVID-19  | 2.19 (1.53 to 3.15) | <0.001 |
| Consider moving out of the house to protect family members | 2.07 (1.39 to 3.07) | <0.001 |
| Family fear of taking the virus home           | 1.62 (1.02 to 2.58) | <0.040  |
| Live with people at high risk of severe COVID-19 | 1.45 (1.02 to 2.08) | 0.038   |
| Feeling protected by the state or employer     | 0.57 (0.36 to 0.88) | 0.011   |
| Sufficient government measures                 | 0.53 (0.34 to 0.83) | 0.005   |
| Satisfied working as a physician               | 0.49 (0.33 to 0.74) | <0.001 |
| Reliable government information                | 0.33 (0.13 to 0.83) | 0.018   |

Source: Own elaboration.

### Table 6 Correlation between total score of 7-Item Generalized Anxiety Disorder Scale and the items and total score of questionnaire on psychosomatic problems (N=531)

| Variables                                      | Rho 95% CI     | P value |
|------------------------------------------------|----------------|---------|
| Unable to fall asleep                          | 0.617 0.541 to 0.684 | <0.001 |
| Migraines and headaches                        | 0.552 0.467 to 0.627 | <0.001 |
| Indigestion or gastrointestinal complaints      | 0.498 0.406 to 0.579 | <0.001 |
| Extremely tired or exhausted                   | 0.531 0.444 to 0.608 | <0.001 |
| Eat, drink, or smoke more than usual           | 0.524 0.435 to 0.602 | <0.001 |
| Decreased sexual interest                      | 0.491 0.399 to 0.573 | <0.001 |
| Shortness of breath or choking sensation        | 0.463 0.368 to 0.548 | <0.001 |
| Decreased appetite                             | 0.474 0.380 to 0.558 | <0.001 |
| Muscle tremors                                 | 0.409 0.309 to 0.500 | <0.001 |
| Pinpricks in different parts of your body       | 0.501 0.410 to 0.582 | <0.001 |
| Strongly tempted not to get up in the morning   | 0.474 0.380 to 0.558 | <0.001 |
| Tendency to sweat or have palpitations         | 0.587 0.507 to 0.658 | <0.001 |
| Total score of work-related stress test        | 0.768 0.717 to 0.811 | <0.001 |

Source: Own elaboration.
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REFERENCES

1 World Health Organization. Coronavirus disease 2019 (COVID-19) situation report – 94, 2020. Available: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200423-sitrep-94-covid-19.pdf [Accessed 16 May 2020].

2 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.

3 World Health Organization. Statement on the second meeting of the International health regulations (2005) emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV), 2020. Available: https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov) [Accessed 16 May 2020].

4 European Centre for Disease Prevention And Control. COVID-19: global overview, 2020. Available: https://www.ecdc.europa.eu/publications-extension/coronavirus-2019-covid19.html [Accessed 24 May 2020].

5 Ministerio de Salud y Protección Social; Instituto Nacional de Salud. COVID-19 Colombia, 2020. Available: https://www.ins.gov.co/noticias/Paginas/Coronavirus.aspx [Accessed 24 May 2020].

6 Zhang W-R, Wang K, Yin L, et al. Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in China. Psychoter Psychosom 2020;89:242–50.

7 Lee SM, Kang WS, Cho A-R, et al. Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. Compr Psychiatry 2018;87:123–7.

8 Chua SE, Cheung V, Cheung C, et al. Psychological effects of the SARS outbreak in Hong Kong on high-risk health care workers. Can J Psychiatry 2004;49:391–3.

9 Lee AM, Wong JGWS, McAlonan GM, et al. Stress and psychological distress among SARS survivors 1 year after the outbreak. Can J Psychiatry 2007;52:232–40.

10 República de Colombia. Ministerio de Salud, 1993. Available: https://www.minsalud.gov.co/sites/rid/Listas/BibliotecaDigital/RIDE/DE/DI/RESOLUCION-8430-DE-1993.PDF [Accessed 23 May 2020].

11 López L. El país necesita más personal en salud. El Colombiano, 2018. Available: https://www.elcolombiano.com/colombia/salud/el-pais-necesita-mas-personal-en-salud-NC8747434 [Accessed 17 Apr 2020].

12 Spitzer RL, Kroenke K, Williams JBW, et al. A brief measure for assessing generalized anxiety disorder: the GAD-7. Arch Intern Med 2006;166:1092–7.

13 García-Camayo J, Zamorano E, Ruiz MA, et al. Cultural adaptation into Spanish of the generalized anxiety disorder-7 (GAD-7) scale as a screening tool. Health Qual Life Outcomes 2010;8:8.

14 Frutos-Marin M. Relación entre Los modelos de gestión de recursos humanos Y Los niveles de estrés laboral Y burnout en profesionales de enfermería de atención especializada, 2014. Available: https://repositorio.unileon.es/bitstream/handle/10612/33508/tesis_FrutosM.pdf?sequence=1&isAllowed=y [Accessed 10 May 2020].

15 Aborsu DK, Lin C-Y, Imani V, et al. The Fear of COVID-19 Scale: Development and Initial Validation. Ann J Ment Health Addict; 1.

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:e203976.

17 Chattejee SS, Bhattacharyya R, Bhattacharyya S, et al. Attitude, practice, behavior, and mental health impact of COVID-19 on doctors. Indian J Psychiatry 2020;62:257–65.

18 Tan BYQ, Chew NWS, Lee GK, et al. Psychological impact of the COVID-19 pandemic on medical care workers in Singapore. Ann Intern Med 2020;M20–1083.

19 Mauder R, Hunter J, Vincent L, et al. The immediate psychological and occupational impact of the 2013 SARS outbreak in a teaching hospital. CMAJ 2003;168:1245–51.

20 Bai Y, Lin C-C, Lin C-Y, et al. Survey of stress reactions among health care workers involved with the SARS outbreak. Psychiatr Serv 2004;55:1055–7.

21 Lee SH, Lee HS, Kim GH, et al. The association between perceived discrimination and depression/anxiety disorders among Korean workers: analysis of the third Korean working conditions survey. Ann Occup Environ Med 2016;28:32.

22 World Health Organization (WHO). Information note. tuberculosis and COVID-19. COVID-19: considerations for tuberculosis (TB) care, 2020. Available: https://www.who.int/docs/default-source/documents/tuberculosis/informa-tion-to-tb-covid-19.pdf?sfvrsn=b5985459_12 [Accessed 20 May 2020].

23 Nickell LA, Crighton EJ, Tracy CS, et al. Psychosocial effects of SARS on hospital staff: survey of a large tertiary care institution. CMAJ 2004;170:793–8.

24 Rana W, Mukhtar S, Mukhtar S. Mental health of medical workers in Pakistan during the COVID-19 outbreak. Asian J Psychiatr 2020;51:102080.

25 Thorsteinsson EB, Brown RE, Richards C. The relationship between Work-Stress, psychological stress and staff health and work outcomes in office workers. Psychology 2014;05:1301–11.

26 Kim JS, Choi JS. Factors influencing emergency nurses’ burnout during an outbreak of middle East respiratory syndrome coronavirus in Korea. Asian Nurs Res 2016;10:295–9.

27 Sasangohar F, Jones SL, Masud FN, et al. Provider burnout and fatigue during the COVID-19 pandemic: lessons learned from a high-volume intensive care unit. Anesth Analg 2020;120:101–6.

28 Tokuda Y, Hayano K, Ozaki M, et al. The interrelationships between working conditions, job satisfaction, burnout and mental health among hospital physicians in Japan: a path analysis. Ind Health 2009;47:166–72.

29 Gomez R. Professional stress in doctors: burnout and teamwork. Revista de la Asociación Española de Neuropsiquiatría 2004;24:41–56.

30 Kang L, Ma S, Chen M, et al. Impact on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak: a cross-sectional study. Brain Behav Immun 2020;87:11–17.

31 González-Díaz SN, Arias-Cruz A, Elizondo-Villareal B, et al. Psychoneuroimmunodendocrinology: clinical implications, World Allergy Organ J 2017;10:19.

32 Henskovic V, Matamala M. Somatization disorder, anxiety and depression in children and adolescents. Revista Medica Clinica Las Condes 2017;10:19.

33 Chong M-Y, Wang W-C, Hsieh W-C, et al. Psychological impact of severe acute respiratory syndrome on health workers in a tertiary hospital. Br J Psychiatry 2004;185:127–33.

34 Kang L, Li Y, Hu S, et al. The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. Lancet Psychiatry 2020;7:e14.

35 Gong Y, Han T, Chen W, et al. Factors associated with mental health outcomes among health care workers exposed to COVID-19. JAMA 2020;323:1406–7.

36 García-Camayo J, Zamorano E, Ruiz MA, et al. Cultural adaptation into Spanish of the generalized anxiety disorder-7 (GAD-7) scale as a screening tool. Health Qual Life Outcomes 2010;8:8.