



Occupational psychosocial risks of health professionals in the face of the crisis produced by the COVID-19: From the identification of these risks to immediate action

1. Introduction

In December 2019, numerous cases of unknown pneumonia began to be reported in the city of Wuhan, Hubei Province (China), which were not easily explained by the health authorities (Jiang et al., 2020a). On 7 January, a novel coronavirus (2019-nCoV) was identified as the cause, and on 11 February, the World Health Organization (WHO) formally called the disease caused by this virus COVID-19 (Disease induced by SARS-CoV-2). A few days earlier, on 30 January 2020, the WHO announced that the coronavirus epidemic was a public health emergency of international concern (Jiang et al., 2020b), and on 11 March, the outbreak was declared a global pandemic. By the end of March 2020, 693,224 positive cases and 33,106 deaths had been detected worldwide, of which 392,757 and 23,962, respectively, occurred in the European region. Italy and Spain are at the top of the list, and France and the United Kingdom are beginning to rapidly increase reported cases (WHO, 2020b). In the United States, detected cases are already of concern (WHO, 2020b).

The clinical presentation of COVID-19 syndrome involves fever, cough, fatigue, dyspnea, headache and sore throat, abdominal pain and diarrhea. Some patients develop a severe set of symptoms and progress to Acute Respiratory Distress Syndrome, having to be admitted to the intensive care units (ICU), with the need to be assisted with mechanical ventilation (Jiang et al., 2020). As it has a high pandemic potential, the virus has the capacity to be rapidly transmitted between humans, and within Europe in countries such as Spain and Italy, a large number of health professionals have been infected. To avoid this, it is recommended that professionals use appropriate Personal Protective Equipment (PPE) according to the level of risk of the task to be performed with these patients (Jiang et al., 2020). However, as this is a global problem, governments are having serious problems in acquiring this equipment in the market and providing these materials to healthcare professionals. This situation has been a real problem, because it contributes to the collapse of the health system by having a large number of professionals on sick leave, in addition to limited available space and beds within the ICUs (del Rio and Malani, 2020; Saglietto et al., 2020).

This has led to a scenario where nurses and doctors are working under physical and psychological pressure unheard of in our Western societies (Chen et al., 2020; WHO, 2020a). In a social context where it could be debated whether it is a priority at this time to attend to the psychosocial aspects of these professionals in their workplaces (Chen et al., 2020), the fact is that these workers are exposed to the virus on a daily basis and are afraid of infecting themselves and/or their families or patients; face long working hours, high mental workload, stress and emotional fatigue; are exposed to high doses of pain and emotional suffering; and are even exposed to the stigma and physical and psychological violence of a society that is also afraid (Duan and Zhu, 2020; Huang et al., 2020; Jiang et al., 2020; WHO, 2020a). But these are not the only elements of risk present. In this article, we examine the occupational psychosocial risk factors that have emerged or have been accentuated during the COVID-19 crisis for the health professional; the psychosocial risks to which he or she is exposed, with particular attention to various forms of stress that may be developing at this time and their consequences; as well as the urgent protective measures that should be taken in psychosocial protection. We will end with some considerations to be taken into account by the health authorities and agencies in order to ensure a future in which we have health professionals recovered from this crisis, resilient and with optimal levels of work engagement to face the new challenges that the future holds for us as a society.

2. Emerging and/or accentuated occupational psychosocial risk factors during the health crisis produced by COVID-19

The psychosocial risk factors at work are “those aspects of work design and the organization and management of work, and their social and environmental contexts, which have the potential for causing psychological, social or physical harm” (Cox and Griffiths, 1996). It is well known that health professionals in emergency departments and ICUs were already exposed to intense cognitive, physical, social and emotional demands in their daily work, even before this pandemic (Adriaenssens et al., 2015; Blanco-Donoso et al., 2018; Wang et al., 2020). Just remember that according to the last European Working Conditions Survey (Eurofound 2017), workers in the health sector (e.g. nurses, physicians, etc.) were exposed to the highest levels of work intensity, which includes aspects related to working at high speed and under time pressure, and experiencing high emotional demands (Eurofound, 2019).

The situation produced by COVID-19 has only aggravated and multiplied the presence of these psychosocial risk factors in this population (Cai et al., 2020; Zheng et al., 2020). In addition to physical stress, the health professional is currently facing an enormous mental burden (Huang et al., 2020), as has already happened in other epidemics such as SARS or the Ebola crisis (Lehmann et al., 2015; Marjanovic et al., 2007). Professionals do not have all the human and technological resources desirable for safe patient care (Chen et al., 2020; del Rio and Malani, 2020; Jiang et al., 2020). In many places in Spain, improvised spaces are being organized to care for patients, without sufficient coordination, specialization, and health organization (State Confederation of Medical Unions, 2020). Professionals also have to attend to the psychological needs of patients and their isolated relatives, since the entry of other specialized mental health personnel is limited by the period of quarantine (Duan and Zhu, 2020). They are seeing patients die without the presence of their families because of the conditions of isolation, and these professionals are the only ones who can humanize and dignify this farewell. Therefore, they are exposed abruptly and in large doses to death, human suffering and loneliness. They are afraid of becoming infected and of infecting patients and their loved ones (Huang et al., 2020). Ultimately, they are also afraid of their own death and that of their relatives (Cai et al., 2020). Their levels of work overload and emotional demand are very high (Cai et al., 2020). Conflict and role ambiguity can also arise, especially among professionals who are being called upon to act in the field with less experience and without the proper expertise. Many are also isolated and not being able to be in touch with the families. Time pressure and rapid decision-making are multiplying, sometimes in the face of ethical dilemmas that would require complex solutions, increasing the pressure for civil and criminal liability for irreversible acts and mistakes that may be committed (Greenberg et al., 2020).

3. Workplace stress, moral injury, burnout and other psychosocial risks present

Exposure to the aforementioned occupational risk factors will increase the likelihood that professionals dealing with the COVID-19 crisis will experience psychosocial situations and experiences that have a high potential to seriously affect their physical and mental health. We are talking about the so-called psychosocial risks at work, for example, work stress, secondary traumatic stress, burnout, work-family conflict, or violence at work. The first works being carried out in China, the epicenter of the crisis, seem to point in this direction.

Probably the most explicit psychosocial risk at this time is job stress, a pattern of psychological, emotional, cognitive and behavioural reactions that the professional will experience when faced with extremely overwhelming and demanding aspects of the content, organization and environment in which he/she is performing his/her work (Houtman et al., 2007), and which is frequently experienced when there is no control over these demands (McGrath, 1970). Today, there is also concern about what is known as moral distress and moral injury (de Veer et al., 2013): psychological distress that results from actions (or lack of actions) that violate one's morals and ethical standards (Litz et al., 2009). The way in which different health resources are triaged and distributed to the population according to different criteria (e.g. the life expectancy of the patient) could lead these workers to experience moral suffering (Greenberg et al., 2020).

The acute stress of the professional in the face of this crisis can evolve in many cases into post-traumatic stress (Cai et al., 2020), as a result of repeated exposure to critical incidents and traumatic events in the workplace. In this sense, these professionals will be exposed to what is known as secondary traumatic stress, a set of psychological symptoms that a professional acquires due to exposure to people who have experienced a trauma (Figley, 2002; Kelly, 2020; Wang et al., 2020). In other words, these are reactions derived from the performance of a traumatic work task that can be enhanced when mixed with high degrees of empathy. The symptoms suffered by the professional may be the same as those of the victims of the trauma, and include intrusive thoughts, traumatic memories, nightmares, insomnia, irritability, emotional lability, fatigue, difficulty in concentrating, avoidance of people and places, hypervigilance and sadness.

Emotional exhaustion and burnout may also appear, probably the former before other dimensions of the construct such as depersonalization/cynicism and lack of adjustment, responses that may come later, following one of the possible known evolutions of this syndrome (Leiter, 1993). The previously mentioned mismatch between demands and resources to cope with them could explain this depletion, as well as other elements such as the lack of physical and psychological recovery of these workers (de Wijn and van der Doef, 2020). How will the high percentage of health workers who already had high levels of burnout before the pandemic be experiencing this crisis? (Adriaenssens et al., 2015; Cañadas-de la Fuente, 2015; Moss et al., 2016; Wang et al., 2020) The impact of this crisis on them is likely to have been dire.

Finally, many workers who are working on the front lines are away from their families, and some cannot see their partners and children because of long working hours or shifts that are difficult to reconcile with personal lives. Others have been placed in a quarantine situation to avoid infecting their families. This situation can also increase the conflict between work and family

(Greenberg et al., 2020). Moreover, this situation not only affects individuals, but also work teams that are exhausted: the high-stress situation can lead to interpersonal conflicts between colleagues.

4. Urgent psychosocial protection actions

The psychological impact that this crisis can have on the mental health of health professionals as a result of being exposed to these risk factors can translate into greater problems of adaptation, insomnia, depression, anxiety and performance in the short, medium and long terms. It may also have important consequences on the quality of care and in the desire to leave the profession (Brooks et al., 2020; Huang et al., 2020; Lai et al., 2020; Zhu et al., 2020). Therefore, it would be necessary to implement urgent psychosocial protection plans, which necessitates, first of all, recognizing the existence of this type of psychosocial risk in the field and not reducing its importance (Greenberg et al., 2020). The loss of health professionals due to this inadequate management can be very serious for the optimal functioning of the health system.

In the face of this type of crisis, it is essential that the basic needs of professionals are covered and that rest spaces are offered between shifts in comfortable spaces (Unadkat and Farquhar, 2020; WHO, 2020a). The incorporation of psychologists specializing in crises and emergencies not only reduces the emotional demands that patients and families place on already overburdened health professionals, but also allows the psychological needs of the staff to be met (Chen et al., 2020; Duan and Zhu, 2020). Debriefing and emotional ventilation can be an interesting resource at this time to implement in the unit, with the aim of expressing in a controlled way the emotions and stories experienced. The support of colleagues and supervisors is fundamental, and the approaches to collective coping are extremely interesting (Rodríguez et al., 2019). Organizational and leadership support is also critical to support these actions (Brooks et al., 2020; Unadkat and Farquhar, 2020; WHO, 2020a). Providing health professionals with the necessary technical resources and support will increase their levels of self-efficacy and personal control (which is much needed in these circumstances), and may reduce their stress levels as a result (Cai et al., 2020). For example, it can be very useful for the professional to receive sufficient preparation about how to deal with the ethical dilemmas that will be presented (Greenberg et al., 2020). This will also help professionals to be able to control and manage their own stress response, with the help of techniques such as diaphragmatic breathing, maintaining basic nutritional and physical activity guidelines, controlling negative thoughts and rumination and allowing them to be connected to their loved ones through social networks. The practitioner should be encouraged to develop active coping with stress and the situation (Cai et al., 2020; Huang et al., 2020). Likewise, promoting personal resources of resilience (hardiness, optimism and emotional competence) is useful to foster psychological health and well-being of professionals, as well as more resilient organizations (Garrosa et al., 2011).

5. Ensuring a psychosocially healthy future for our healthcare providers

It has been twelve years since Leka et al. (2008) reflected in a study conducted with occupational health and safety experts in Great Britain that being prepared for a pandemic was one of the top-priority and emerging areas in terms of occupational health issues. However, it seems that this crisis has now exceeded our expectations and has caught us all off guard.

Psychosocial interventions should be extended beyond the acute period of the crisis, as traumatic stress and some emotional problems are likely to have a high incidence in the future among our health professionals (Duan and Zhu, 2020). We cannot make the mistake that when the pandemic and health crisis situation ends, we do not engage in deep reflection on what has happened and what it means to have a healthy health system – also in terms of human resources developing their activity under optimal working conditions (Unadkat and Farquhar, 2020). Spaces for reflection will be needed to learn from the experience, promoted by the organizations and health directorates (Greenberg et al., 2020). Occupational risk prevention services will play an important role in the prevention of psychosocial risks in the workplace, and employee care programmes will be a relevant resource, if you are willing and invest in it. Caring for the professional is an inseparable part of the humanization of healthcare in general and of the quality of care provided (Gálvez-Herrer et al., 2017). Otherwise, the loss of health professionals and their talent may be irreversible, as well as the abandonment of the profession.

Thousands of citizens in Spain and elsewhere in the world go out to their balconies every day to applaud the health professionals who are dealing with the health crisis generated by COVID-19. And recently, in an article published in the International Journal of Nursing Studies, Santos et al. (2019) showed us how important the impact and perceived social value is for health professionals when explaining their levels of burnout and engagement. Without a doubt, going out to applaud motivates professionals, but the authorities and health institutions will have to take a step forward and carry out structural measures that will result in real change in the working conditions of these professionals. Several recognised experts in occupational health are already warning that if we do not make these changes, the number of professionals who are burned, and who leave the profession will increase (Eurofound, 2019; Maslach, 2017). They are exposed to risks on a daily basis, often out of their own moral duty. Our society must respond to them in the same way, and this time we cannot fail them.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Luis Manuel Blanco-Donoso*

Eva Garrosa

Jennifer Moreno-Jiménez

Macarena Gálvez-Herrer

Bernardo Moreno-Jiménez

Stress and Health Research Team, Autonomous University of Madrid (UAM), Calle Ivan Pavlov, 6, Cantoblanco, Madrid 28049, Spain

*Corresponding author.

E-mail address: luismanuel.blanco@uam.es (L.M. Blanco-Donoso)

References

- Adriaenssens, J., De Gucht, V., Maes, S., 2015. Determinants and prevalence of burnout in emergency nurses: a systematic review of 25 years of research. *Int. J. Nurs. Stud.* 52 (2), 649–661. doi:[10.1016/j.ijnurstu.2014.11.004](https://doi.org/10.1016/j.ijnurstu.2014.11.004).
- Brooks, S.K., Webster, R.K., Smith, L.E., Woodland, L., Wessely, S., Greenberg, N., Rubin, G.J., 2020. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet* 395 (10227), 912–920. doi:[10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8).
- Blanco-Donoso, L.M., Carmona-Cobo, I., Moreno-Jiménez, B., Rodríguez de la Pinta, M.L., Almeida, E.C.D., Garrosa, E., 2018. Stress and well-being in nursing professionals of intensive care within the organ donation and transplantation field: a proposal from the occupational health psychology. *Med. Secur. Trab. (Madr.)* 64 (252), 244–262. Retrieved from <http://scielo.isciii.es/pdf/mesetra/v64n252/0465-546X-mesetra-64-252-00244.pdf>.
- Cai, H., Tu, B., Ma, J., Chen, L., Fu, L., Jiang, Y., Zhuang, Q., 2020. Psychological impact and coping strategies of frontline medical staff in Hunan between January and March 2020 during the outbreak of coronavirus disease 2019 (COVID-19) in Hubei, China. *Med. Sci. Monitor* 26, e924171. Retrieved from <https://www.medscimonit.com/download/inPress/idArt/924171>.
- Cañadas-De la Fuente, G.A., Vargas, C., San Luis, C., García, I., Cañadas, G.R., Emilia, I., 2015. Risk factors and prevalence of burnout syndrome in the nursing profession. *Int. J. Nurs. Stud.* 52 (1), 240–249. doi:[10.1016/j.ijnurstu.2014.07.001](https://doi.org/10.1016/j.ijnurstu.2014.07.001).
- Chen, Q., Liang, M., Li, Y., Guo, J., Fei, D., Wang, L., Wang, J., 2020. Mental health care for medical staff in China during the COVID-19 outbreak. *The Lancet Psychiatry* 7 (4), e15–e16. doi:[10.1016/S2215-0366\(20\)30078-X](https://doi.org/10.1016/S2215-0366(20)30078-X).
- Cox, T., Griffiths, A.J., 1996. The assessment of psychosocial hazards at work. In: Schabracq, M.J., Winnubst, J.A.M., Cooper, C.L. (Eds.), *Handbook of Work and Health Psychology*. Wiley and Sons, Chichester, pp. 127–146.
- de Veer, A.J., Francke, A.L., Struijs, A., Willems, D.L., 2013. Determinants of moral distress in daily nursing practice: a cross sectional correlational questionnaire survey. *Int. J. Nurs. Stud.* 50 (1), 100–108. doi:[10.1016/j.ijnurstu.2012.08.017](https://doi.org/10.1016/j.ijnurstu.2012.08.017).
- de Wijn, A.N., van der Doef, M.P., 2020. Patient-related stressful situations and stress-related outcomes in emergency nurses: a cross-sectional study on the role of work factors and recovery during leisure time: stressful situations in emergency. *Int. J. Nurs. Stud.*, 103579 doi:[10.1016/j.ijnurstu.2020.103579](https://doi.org/10.1016/j.ijnurstu.2020.103579).
- del Rio, C., Malani, P.N., 2020. COVID-19—new insights on a rapidly changing epidemic. *JAMA* doi:[10.1001/jama.2020.3072](https://doi.org/10.1001/jama.2020.3072).
- Duan, L., Zhu, G., 2020. Psychological interventions for people affected by the COVID-19 epidemic. *The Lancet Psych.* 7 (4), 300–302. doi:[10.1016/S2215-0366\(20\)30073-0](https://doi.org/10.1016/S2215-0366(20)30073-0).
- Eurofound, 2017. Working Anytime, Anywhere: The effects On the World of Work. Joint ILO- Eurofound report, Luxembourg, Geneva doi:[10.2806/372726](https://doi.org/10.2806/372726).
- Eurofound, 2019. Working Conditions and Workers' Health. Publications Office of the European Union, Luxembourg.
- Gálvez-Herrer, M., Gómez, J.M., Martín, M.C., Ferrero, M., 2017. Humanizing Healthcare and Occupational Health: implications, State of Issue and Proposal from HU-CI Project. *Medicina y Seguridad en el Trabajo* 63 (247), 103–119. Retrieved from <http://scielo.isciii.es/pdf/mesetra/v63n247/0465-546X-mesetra-63-247-00103.pdf>.
- Garrosa, E., Moreno-Jiménez, B., Rodríguez-Muñoz, A., Rodríguez-Carvajal, R., 2011. Role stress and personal resources in nursing: a cross-sectional study of burnout and engagement. *Int. J. Nurs. Stud.* 48 (4), 479–489. doi:[10.1016/j.ijnurstu.2010.08.004](https://doi.org/10.1016/j.ijnurstu.2010.08.004).
- Greenberg, N., Docherty, M., Gnanapragasam, S., Wessely, S., 2020. Managing mental health challenges faced by healthcare workers during covid-19 pandemic. *Br. Med. J.* 368. doi:[10.1136/bmj.m1211](https://doi.org/10.1136/bmj.m1211).
- Houtman, I., Jettinghof, K., Cedillo, L., & World Health Organization. (2007). Raising awareness of stress at work in developing countries: a modern hazard in a traditional working environment: advice to employers and worker representatives.
- Huang, L., Miang, Xu, Rong Liu, H., 2020. Emotional responses and coping strategies of nurses and nursing college students during COVID-19 outbreak. *medRxiv* doi:[10.1101/2020.03.05.20031898](https://doi.org/10.1101/2020.03.05.20031898).
- Figley, C.R., 2002. Compassion fatigue: psychotherapists' chronic lack of self care. *J. Clin. Psychol.* 58 (11), 1433–1441. doi:[10.1002/jclp.10090](https://doi.org/10.1002/jclp.10090).
- Jiang, L., Broome, M.E., Ning, C., 2020a. The performance and professionalism of nurses in the fight against the new outbreak of COVID-19 epidemic of Chinese nurses is laudable. *Int. J. Nurs. Stud.*, 103578 doi:[10.1016/j.ijnurstu.2020.103578](https://doi.org/10.1016/j.ijnurstu.2020.103578).
- Jiang, F., Deng, L., Zhang, L., Cai, Y., Cheung, C.W., Xia, Z., 2020b. Review of the clinical characteristics of coronavirus disease 2019 (COVID-19). *J. Gen. Intern Med.* 1–5. doi:[10.1007/s11606-020-05762-w](https://doi.org/10.1007/s11606-020-05762-w).
- Kelly, L., 2020. Burnout, Compassion Fatigue, and Secondary Trauma in Nurses: recognizing the Occupational Phenomenon and Personal Consequences of Caregiving. *Crit. Care Nurs. Q* 43 (1), 73–80. doi:[10.1097/CNQ.0000000000000293](https://doi.org/10.1097/CNQ.0000000000000293).
- Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., Tan, H., 2020. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Netw. Open* 3 (3), e203976. doi:[10.1001/jamanetworkopen.2020.3976](https://doi.org/10.1001/jamanetworkopen.2020.3976), -e203976.
- Lehmann, M., Bruenahl, C.A., Löwe, B., Addo, M.M., Schmiedel, S., Lohse, A.W., Schramm, C., 2015. Ebola and psychological stress of health care professionals. *Emerg. Infect. Dis.* 21 (5), 913–914. doi:[10.3201/eid2105.141988](https://doi.org/10.3201/eid2105.141988).
- Leiter, M.P., 1993. Burnout as a developmental process: consideration of models. In: Schaufeli, W.B., Maslach, C., Marek, T. (Eds.), *Professional Burnout: Recent developments in Theory and Research*. Taylor & Francis, Washington, DC doi:[10.4324/9781315227979-18](https://doi.org/10.4324/9781315227979-18).
- Leka, S., Khan, S., Griffiths, A., 2008. Exploring Health and Safety practitioners' Training Needs in Workplace Health Issues. Institution of Occupational Safety and Health, Wgston, UK.
- Litz, B.T., Stein, N., Delaney, E., Lebowitz, L., Nash, W.P., Silva, C., Maguen, S., 2009. Moral injury and moral repair in war veterans: a preliminary model and intervention strategy. *Clin. Psychol. Rev.* 29 (8), 695–706. doi:[10.1016/j.cpr.2009.07.003](https://doi.org/10.1016/j.cpr.2009.07.003).
- Marjanovic, Z., Greenglass, E.R., Coffey, S., 2007. The relevance of psychosocial variables and working conditions in predicting nurses' coping strategies during the SARS crisis: an online questionnaire survey. *Int. J. Nurs. Stud.* 44 (6), 991–998. doi:[10.1016/j.ijnurstu.2006.02.012](https://doi.org/10.1016/j.ijnurstu.2006.02.012).
- Maslach, C., 2017. Finding solutions to the problem of burnout. *Consult. Psychol. J. Pract. Res.* 69 (2), 143–152. doi:[10.1037/cpb0000090](https://doi.org/10.1037/cpb0000090).

- McGrath, J.E., 1970. A conceptual formulation for research on stress. In: McGrath, J.E. (Ed.), *Social and Psychological Factors in Stress*. Holt, Rinehart and Winston, New York, NY, pp. 10–21.
- Moss, M., Good, V., Gozal, D., Kleinpell, R., Sessler, C.N., 2016. An official critical care societies collaborative statement: burnout syndrome in critical care healthcare professionals: a call for action. *Critical Care Med.* 44 (7), 1414–1421. doi:10.4037/ajcc2016133.
- Rodríguez, I., Kozusznik, M.W., Peiró, J.M., Tordera, N., 2019. Individual, co-active and collective coping and organizational stress: a longitudinal study. *Eur. Manag. J.* 37 (1), 86–98. doi:10.1016/j.emj.2018.06.002.
- Saglietto, A., D'Ascenzo, F., Zoccai, G.B., De Ferrari, G.M., 2020. COVID-19 in Europe: the Italian lesson. *The Lancet* doi:10.1016/S0140-6736(20)30690-5.
- Santos, A., Chambel, M.J., Castanheira, F., 2019. Well-being among hospital nurses: a cross-sectional study of the contributions of relational job characteristics. *Int. J. Nurs. Stud.*, 103438 doi:10.1016/j.ijnurstu.2019.103438.
- Unadkat, S., Farquhar, M., 2020. Doctors' wellbeing: self-care during the covid-19 pandemic. *Br. Med. J.* 368. doi:10.1136/bmj.m1150.
- Wang, J., Okoli, C.T., He, H., Feng, F., Li, J., Zhuang, L., Lin, M., 2020. Factors associated with compassion satisfaction, burnout, and secondary traumatic stress among Chinese nurses in tertiary hospitals: a cross-sectional study. *Int. J. Nurs. Stud.* 102, 103472. doi:10.1016/j.ijnurstu.2019.103472.
- World Health Organization, 2020a. Coronavirus Disease (COVID-19) outbreak: Rights, roles, and Responsibilities of Health workers, Including Key Considerations For Occupational Safety and Health Retrieved from https://www.who.int/docs/default-source/coronaviruse/who-rights-roles-respon-hw-covid-19.pdf?sfvrsn=bcabd401_0.
- World Health Organization, 2020b. Coronavirus Disease 2019 (COVID-19): Situation Report, 70 Retrieved from <https://reliefweb.int/sites/reliefweb.int/files/resources/20200330-sitrep-70-covid-19.pdf>.
- Zheng, M., Yao, J., Narayanan, J., 2020. Mindfulness Buffers the Impact of COVID-19 Outbreak Information On Sleep Duration doi:10.31234/osf.io/wuh94.
- Zhu, Z., Xu, S., Wang, H., Liu, Z., Wu, J., Li, G., y Zhu, S., 2020. COVID-19 in Wuhan: immediate Psychological Impact on 5062 Health Workers. *medRxiv* doi:10.1101/2020.02.20.20025338.