

# INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH

2022, Vol. 3, No. 1, 31 – 39

<http://dx.doi.org/10.11594/ijmaber.03.01.04>

## Research Article

### A Literature Review on the Mental Health and Coping Strategies of Healthcare Workers in This Time of Pandemic

Ma-Ai C. Aclon<sup>2,5</sup>, Ma. Chelsea Perez-Ambray<sup>3,5</sup>, Mae Cherryrose P. Antiporda<sup>1,5</sup>, Maria Pia S. Dizon<sup>5,7</sup>, Paul Reinald B. Garcia<sup>5,6</sup>, Marie Anne A. Lapitan<sup>5</sup>, Purisima M. Nocos<sup>5,8</sup>, Cecilia R. Vergara<sup>4,5</sup>, Sherwin S. Aquino<sup>5,9</sup>, Aristotle M. Parico<sup>5,10</sup>, Mary Ann E. Lopez<sup>5,6</sup>, Cecile F. Guevarra<sup>5,6</sup>, Christian Jay S. Orte<sup>5,10\*</sup>, Hanna Monique A. Floresca<sup>5</sup>, Liza May B. Jecino<sup>5</sup> & Fred B. Ruiz<sup>5</sup>

<sup>1</sup>Amang Rodriguez Memorial Medical Center, Marikina, Philippines

<sup>2</sup>Armed Forces of the Philippines – Health Service Command, Philippines

<sup>3</sup>King Saud University Medical City – King Abdulaziz University Hospital, KSA

<sup>4</sup>North Luzon Philippines State College, Philippines

<sup>5</sup>The Graduate School, Our Lady of Fatima University

<sup>6</sup>Taibah University, KSA

<sup>7</sup>Valenzuela Medical center, MM, Philippines

<sup>8</sup>Zone Medical and Intervention Hospital, Bicol, Philippines

<sup>9</sup>Lung Center of the Philippines, MM, Philippines

<sup>10</sup>Systems Plus College Foundation, Angeles City, Philippines

#### Article history:

Submission January 2022

Revised January 2022

Accepted January 2022

#### \*Corresponding author:

E-mail:

[jay\\_serafica19@yahoo.com](mailto:jay_serafica19@yahoo.com)

#### ABSTRACT

This literature review focused on the mental health and coping strategies of healthcare workers amidst pandemic. Coronavirus disease 2019 (COVID-19) has produced a worldwide health catastrophe that has mandatory emergency protocols and control in all countries. The increasing number of confirmed positive patients and deaths has caused health emergency to health care providers and even to the health system. Besides the population that had been infected, healthcare workers who are at the forefront of battling with the disease have also been ill. The fact that nurses have longer exposure, a revealing misery associated to mental health issues such as depression, drowsiness and sleep deprivation was fabled. As many people would say nowadays, “depression is real” and this opens gates as this study aims to explore on the mental health status of the healthcare workers and their coping strategies as identified by several studies.

**Keywords:** mental health, coping strategies, healthcare workers, pandemic, coping patterns, COVID-19, nurses

#### How to cite:

Aclon, Ma-Ai C., Ambray, Ma. C. P., Antiporda, Mae C. P., Dizon, M. P. S., Garcia, P. R. B., Lapitan, M. A. A., Nocos, P. M., Vergara, C. R., Aquino, S. S., Parico, A. M., Lopez, M. A. E., Guevarra, C. F., Orte, C. J. S., Floresca, H. M. A., Jecino, L. M. B. & Ruiz, F. B. (2022). A Literature Review on the Mental Health and Coping Strategies of Healthcare Workers in This Time of Pandemic. *International Journal of Multidisciplinary: Applied Business and Education Research*. 3 (1), 31 –39. doi: 10.11594/ijmaber.03.01.04

## **Introduction**

An unknown cause of pneumonia and its origin emerged in the later part of 2019 in Wuhan, China. The newly found virus was named the 2019 Novel Corona Virus n (2019 – NCoV) by the World Health Organization and later recognized as Corona Virus Disease (COVID – 19). The virus is transmitted from person-to-person, prompting the World Health Organization to designate it a worldwide pandemic. It has had a significant negative influence on the lives of individuals all over the world, both physically and mentally (World Health Organization 2020).

In one study, it revealed that the medical staff as front liners are those much affected by the global deluge of confusion and ordeal. The medical front liners especially nurses who are assigned in the COVID – 19 facilities and hospitals are the center of physical and psychological concern on this global pandemic (Lai et al., 2020).

In 2002, during the Middle East Respiratory syndrome (MERS), in comparison to COVID – 19, it caused much obligation among nurses and medical staff. Nurses are risking their lives in caring for the COVID – 19 patients throughout the pandemic as part of the healthcare system by handling and managing the crisis and building up plans, implementations and evaluation of strategies during the pandemic.

Objectives were created, resources were aligned, and policies were formulated in response to the needs of quality care (Shutz & Mattel, 2020). Fear and distress affected the nurses working for long hours. Stress and anxiety generated in their workplace and emotional support was not prioritized. Clinical risks and depression affected the nurses in their workload. These front liners are forefront in danger of worries and depression (Thobaity & Alshamman, 2020).

In a study from the American Nurses Association (ANA) in March to April 2020, it was found out that of 32,000 nurses, 87% feared of going to work, 36% caring from an infectious respiratory patient having insufficient PPE, and only 11% are prepared physically, emotionally, and psychologically prepared to take and manage the COVID-19 patients. Lack of personal

protective equipment or training may exacerbate mental health impacts (Muller et al., 2020).

Nurses being in the frontline consisted of the highest number of one thousand seven hundred thirty-four (1,734) out of 5, 008. This caused great burden to medical staffs and caused much concern for nurses in comparison to other health care experts (Huang et al. 2020). The fact that nurses have longer exposure, a revealing misery related to mental health matters including depression, drowsiness and sleep deprivation was fabled (Dong & Bouy, 2020; Li et al., 2020).

## **Research Objective**

Since several studies have been conducted about the effect of the pandemic on the psychological wellness and wellbeing of healthcare workers; hence, this study aims to explore the mental health status of the healthcare workers and their coping strategies. Consider as underreported, likewise, this will add to the growing knowledge on the mental health and coping strategies of health care providers amidst this pandemic times.

## **Methods**

A literature review was conducted to synthesize the main objective of this study, the synthesis of several study results regarding mental health and coping strategies among healthcare workers. Search strategies was made to several engines (ScienceDirect, Google Scholar, and EbscoHost) using the keywords of “Mental health of Healthcare workers during COVID-19” and Coping Strategies of Healthcare Workers during COVID-19.”

Cold (finding significant results) and warm analyses (synthesis and thematization) (Orte & Bautista, 2017; Tang et al., 2018) was done in order to derive the narratives into a flow of discussions.

## **Results and Discussions**

### ***Mental Health***

Coronavirus disease 2019 (COVID-19) has caused a worldwide health disaster, prompting a declaration of emergency. The total number of confirmed positive patients and deaths has

generated worry and concern among healthcare personnel and the whole healthcare system.

The World Health Organization emphasized that the mental health as a 'state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to his or her community'. Healthcare workers exposed to COVID-19 have a high-risk of emerging negative mental health consequences and may need psychological interventions or even support (Lai et al., 2019). As such, many studies have exposed that nursing and even allied health is considered as one of the most stressful professions (McGrath et al., 2003; Oyeleye et al., 2013). Stress among nurses, based on studies, has been related to undesirable results including burnout, psychological distress, anxiety, depression, musculoskeletal problems and even low-back pain (Farquharson et al., 2013; Gonge et al., 2002) and the quality of patient's care may lessen (Leveck & Jones, 1996). Even health facilities tend to lessen their efficacy and efficiency due to healthcare worker's exhaustion that leads to intention to leave as identified reasons (Coomber & Barriball, 2007; Lorente, et. al., 2020).

Burnout is a main healthcare concern in addition to the stressors brought by the ongoing pandemic. Emergency Department healthcare workers have had one of the highest incidences of burnout even before there was COVID-19. Frontliners who handle the patients directly to COVID-19 suspected and/or infected clients aggravates the situation (Chor et. al. 2020). In brief, healthcare workers are exposed to an extended source of distress which may go beyond to their capacity to cope-up with the situation resulting to overwork in extended period of time (Zhang et al., 2020).

Among all healthcare workers, nurses were those professionals who consumed most of their time with the patient and stressed out that they experienced a mix of negative reactions, such as shock, anxiety, fear, and even stress due to the reports on COVID-19 (Deliktas, et. al. 2020). They undergo extreme pressure because of the great risk contacting

the infection, the dread of providing insufficient care, being tagged as high risk and the over-all hesitation brought about by the past experiences from the earlier epidemics such Middle-East Respiratory Syndrome-Corona Virus (MERS-CoV) and severe acute respiratory syndrome (SARS) (Liu et al., 2020).

Others explicated that they felt psychological symptoms, including mental breakdown, social life problems, reluctance to perform anything, hesitancy, misery, apprehension about the future and pessimism. They also uttered that they were preoccupied with containing and controlling the virus. Most participants highlighted that their anxiety of dispersing the infection was consider a reason to the difficulties in coping with the situation during the pandemic. Moreover, living with family members amplified this anxiety, but some stated that, although they lived alone, they still anxious in contaminating people. As much as possible they are trying to control these factors and fears and voluntarily isolated themselves as they believe that they are considered carriers and doesn't want to disseminate the pathogen (Deliktas et al., 2020). On the other hand, healthcare practitioners were frequently experienced mental health status problems such as distress, apprehension, and panic leading to compromise patient safety (Thatrimontrichai, 2020). As COVID-19 considered more transmissible than MERS-CoV and SARS diseases based on literatures for about 10 times (Ahn et al., 2020), this actually upsurge the workload burden of frontline nurses and healthcare professionals (Shan et al., 2020).

Caring for COVID positive patients makes healthcare workers at-risk or susceptible not only for the physical aspect but also for mentally. Being exposed to COVID-19 is considered traumatic, together with the necessity to have a tough decision, puts them at-risk of stress. These occurrences call for a better emphasis on the desires of those with mental difficulties and on mental health matters among the healthcare workers and the general population (Lange, 2020). Prolonged exposure to traumatic events, such as the death of patients or coworkers, may result in the development of significant anxiety and depression symptoms

(Di Tella, et. al, 2020). When examining the influence of the COVID-19 pandemic on decision making, resource allocation, treatment planning, and ethical dilemmas, an already complicated situation becomes much present. (Crowe et. al., 2020).

The mental health impact of a disease outbreak is usually ignored in times of pandemic. Psychological well-being has an important impact on individuals' performance. Health professionals require a support structure at work to improve their mental well-being, and their activities must be constantly monitored. This is critical in times of health emergency. An early evaluation of health workers' mental health condition and mental health requirements during crises can assist management in responding to and reducing psychological distress, as well as aligning health professionals with patient needs (Khanal, et. al., 2020).

According to reports from throughout the world, healthcare professionals suffer considerable levels of self-reported anxiety, sadness, sleeplessness, and even signs of post-traumatic stress disorder. Following the conclusion of the epidemic, healthcare personnel may have a more serious mental health condition. The scientific community has stated that specialized mental health therapies for healthcare personnel are required. Protecting doctors' mental health following COVID-19 is critical, and it necessitates an evidence-based strategy to establishing and disseminating comprehensive clinicians' mental health care (Cabarkapa, Nadjidai, Murgier, & Ng, 2020).

### ***Coping Strategies***

The healthcare workers have undergone so many struggles in facing this COVID-19 pandemic but their resilience made them be able to manage the circumstances.

According to WHO (2020b), the healthcare staff is deemed critical to a successful pandemic response. It is recommended that their physical health be preserved and their mental health requirements be anticipated and handled in order to enhance their service. In addition, the CDC (2020) emphasized the significance of listening to and learning from healthcare practitioners' experiences as they respond to COVID-19. Earlier crisis processes, such as the Middle

East respiratory syndrome coronavirus (MERS-CoV), revealed the need of investigating the demands and challenges faced by healthcare personnel while developing a secure healthcare system to efficiently respond to national disasters (Yujeong Kim, 2018).

Given the high load, there is an increasing need and attention on protecting healthcare professionals across the world through the provision of personal protection equipment, training, managing tiredness, and mitigating psychosocial repercussions (Shaukat, 2020). Adequate rest, as well as recovery programs targeted at boosting resilience and psychological well-being, will be prioritized (Zhang, et. al., 2020).

Despite their dread, healthcare personnel in the front lines must adjust to the new conditions in their workplace (Aggari et al., 2019; Orte et al., 2020) and strive to overcome the traumatic circumstances brought about by the disease's spread (Pathania et al., 2020)

There are multiple elements that contribute to nurses' coping techniques, one of which was receiving various sorts of support from their social surroundings, institutions, and coworkers. The majority of the nurses reported strong communication and a sense of learning together, supporting one another, and combating the epidemic together. Some nurses stated that being appreciated by society gave them a sense of fulfillment. Sharing positive messages about nurses on social media and being praised by society at a specific time each evening provided them strength. Some people participated in leisure activities to feed their inner world and relieve psychological tiredness as part of their struggle against the disease's mental stress. Reading books and conversing were among the self-help activities. (Deliktas, et. al. 2020).

As one of the findings, it revealed that the utilization of social media platforms such as video chats, spending time with family and friends, and gestures of appreciation from one's workplace and colleagues were discovered to be preferable techniques for coping with the epidemic. The same consequences were seen in previous pandemic epidemics. These measures are also in line with the World Health Organization's guidelines for healthcare

workers' mental health and psychological concerns during the COVID-19 outbreak. (Chor et al., 2020).

Implementing efforts to alleviate anxiety among nurses may help to avoid the negative repercussions. Such strategies are critical for retaining a highly motivated nursing workforce. Nurse managers play a critical role in resolving nurses' COVID-19 worry or anxieties by supporting staff's mental, psychological, and emotional health through evidence-based measures, supportive organizational policies, as well as the provision of a safe and secure work environment (Mo et al., 2020; Catton, 2020).

One of the strategies to combat the disease were isolation strategies such as social distancing which were adopted globally. However, this may increase stress and increase the likelihood of psychological problems. Hence, the need to build resilience (Munawar & Choudhry, 2019). Personal resilience, as well as social and organizational support, were recognized as critical variables in nurses' resistance to adversity and stress, helping them to preserve their mental well-being and emotional health (Labrague et al., 2018b; Turner, 2015; Kim & Park, 2017; Bloom et al., 2017). Personal resilience, often defined as a person's ability to 'bounce back' or recover rapidly from a stressful situation (Hart et al., 2014), and may assist nurses to manage efficiently and bear the weight produced by stresses. Personal resilience in nurses during crisis events and disease outbreaks suggests that increasing nurses' toughness and coping abilities might help them better manage and deal with stressful conditions (Labrague et al., 2018b; Turner, 2015; Duncan, 2020). Hence, nurses' resilient actions in response to an overwhelming workplace has been associated with amplified quality of life and improving health (Gillespie et al., 2007; Glass, 2009 as cited by Lorente, 2020; Orte, et al., 2021). This positive attitude towards a stressful situation was the main protective factor (Babore, 2020).

Adequate social support was also viewed as critical in assisting healthcare personnel in properly managing stressful events such as emergency circumstances, catastrophe events, and infectious disease outbreaks (Labrague et al., 2018c; Kim & Park, 2017). Higher levels of

organizational support have been demonstrated to minimize the impact of various workplace stresses and to function as a protective factor against stress and anxiety induced by catastrophes, tragedies, and other new infectious illnesses (Bloom et al., 2017; Veenema et al., 2017).

According to the results of a research conducted in Italy, local and national organizations should invest in mental health care for hospital employees during this epidemic. Furthermore, because women are at a higher risk, particular care should be devoted to their mental health (Bettinsoli and Napier, 2020).

In China, the country that originally encountered the COVID-19 wave, the necessity of psychological help in emergency situations was clearly acknowledged. Psychological services, in particular, were provided to medical professionals and patients within hospitals in the form of psychological education and face-to-face psychological therapies. (Buselli, et. al., 2021).

In Indonesia, family involvement is the primary driving force for healthcare professionals to deliver quality healthcare during the COVID-19 outbreak. As a result, it is critical to give chances for healthcare personnel to reach out to and join with families in order to provide mutual support. If this is not feasible, each family member must communicate on a frequent basis, delivering encouraging signals and pushing health personnel to cope with the COVID-19 epidemic in a positive psychological manner. Nonetheless, strong professional teamwork, efficient preventative measures, and a positive attitude when dealing with the pandemic all play a significant role in decreasing stress. The availability of proper information and assistance from hospitals also aided in motivating the health workers in this research to cope with the pandemic. (Pathania, 2020).

At the same time, COVID-19 provided beneficial features that should be investigated in addition to the additional load of psychological risk factors. The global public reaction to healthcare workers has been heartwarming like never before. Numerous stories from throughout the world describe feelings of gratitude and connection to healthcare staff. The epidemic has put healthcare professionals in

the limelight, and for some, it has been a welcome boost. Others have speculated that the special components associated with COVID-19 may have shielded against burnout consequences, at least in the initial phase, by providing a powerful sense of self-efficacy. Based on what has been revealed so far, it is considered that the pandemic has caused changes in the working framework of healthcare staff, which appear to be operating both favorably and adversely (Buselli, et. al., 2020). Although nurses were able to cope with their emotional stress, their mental health should be examined on a regular basis (Zhang, 2020).

Because of the evident impact of this epidemic on nurses' mental health, these professionals have been recommended to implement ways to support their mental health, therefore limiting potential repercussions (Pinho, et. al., 2021) and as the epidemic progresses, significant clinical and policy measures are required to assist healthcare professionals (Tan, et. al., 2020). In these difficult times, health professionals require enough assistance to boost productivity and keep them engaged (Pathania et al., 2020).

It is critical to have appropriate coping skills for stressful situations since they can prevent experiences that lead to stress-related mental diseases. Although individual susceptibility to stress and certain conditions may have a role, coping skills are believed to be beneficial. The most common coping strategy was "hoping for the best," followed by "being busy." Some coped via religious beliefs, attempting to deal with situations as they arose, sharing sentiments and conversing with others. Avoiding thinking about the current stressful circumstance, being uninformed of coping skills, and trying to deal were all linked to anxiety and despair (Kar et al., 2021).

Other coping methods, such as job involvement, might be beneficial in this challenging and stressful scenario that professionals are in. This has resulted in improved health-care quality. Work involvement has been shown to be a protective factor against burnout in all of its aspects (emotional weariness, depersonalization, and personal fulfillment), as well as a predictor of quality of care. Furthermore, those with high

levels of job involvement have less moral anguish, avoiding the emotional discomfort of being unable to act in accordance with what they believe to be right. It might also be a valuable coping technique for health care providers dealing with the current dramatic circumstance as well as future ones (Gomez-Salgado et al., 2020).

## **Conclusion**

Healthcare professionals have been in the forefront of this pandemic, and it is understandable that they have experienced a range of negative emotional reactions. Fear of infecting others, being labeled high risk, adapting to many new factors, the learning process, psychological symptoms, and a lack of understanding of their position as team members have all contributed to their anxiety and overall mental health state.

The mental health of healthcare personnel must also be emphasized, especially given the pandemic's uncertainty. Several coping mechanisms were identified. There were strategies that were practiced by healthcare individuals themselves while the environment also played a big role for healthcare workers to abate the negative effects of the pandemic. Some gained gratification from their direct effect on people's lives, feeling that their contribution to the healthcare system is sacred and valued by the society, helped them regain their worth and be able to move forward as they continue to battle with the unseen enemy. Familial support, organizational support and care from peers were also found to have helped as a coping mechanism to the front liners. The role of managers in uplifting the healthcare workers was also found to have improved coping patterns. Lastly, extra-personal factors such as the provision of materials necessary like personal protective and alike were also noted to have a positive effect on the healthcare workers' management of stress and anxiety.

With all of this, it must be put in mind that in order for the healthcare workers to efficiently work in this pandemic time, the mental health should never be taken for granted and instead put on top priority.

## **Conflict of Interest**

In this article, the authors declare that they have no competing interests.

## References

- Aggari, M. I., Diño, M. J. S., & Orte, C. J. S. (2020). Leaders shaping leadership: Knowledge, professional values and competency as prognosticators of career growth and development among nurses. *Enfermeria clinica*, 30, 9-14. <https://doi.org/10.1016/j.enfcli.2019.09.020>
- Al Thobaity, A., & Alshammari, F. (2020). Nurses on the Frontline against the COVID-19 Pandemic: An Integrative Review. *Dubai Medical Journal*, 3(3), 87-92. <https://doi.org/10.1159/000509361>
- Babore, A., Lombardi, L., Viceconti, M. L., Pignataro, S., Marino, V., Crudele, M., Candelori, C., Bramanti, S. M., & Trumello, C. (2020). Psychological effects of the COVID-2019 pandemic: Perceived stress and coping strategies among healthcare professionals. *Psychiatry Research*, 293, 113366. <https://doi.org/10.1016/j.psychres.2020.113366>
- Bettinsoli, M. L., Di Riso, D., Napier, J. L., Moretti, L., Bettinsoli, P., Delmedico, M., Piazzolla, A., & Moretti, B. (2020). Mental Health Conditions of Italian Healthcare Professionals during the COVID-19 Disease Outbreak. *Applied Psychology: Health and Well-Being*, 12(4), 1054-1073. <https://doi.org/10.1111/aphw.12239>
- Buselli, R., Corsi, M., Baldanzi, S., Chiumiento, M., Del Lupo, E., Dell'Oste, V., Bertelloni, C. A., Massimetti, G., Dell'Osso, L., Cristaudo, A., & Carmassi, C. (2020). Professional Quality of Life and Mental Health Outcomes among Health Care Workers Exposed to Sars-Cov-2 (Covid-19). *International Journal of Environmental Research and Public Health*, 17(17), 6180. <https://doi.org/10.3390/ijerph17176180>
- Buselli, R., Corsi, M., Veltri, A., Baldanzi, S., Chiumiento, M., Lupo, E. D., Marino, R., Necciari, G., Caldi, F., Foddìs, R., Guglielmi, G., & Cristaudo, A. (2021). Mental health of Health Care Workers (HCWs): A review of organizational interventions put in place by local institutions to cope with new psychosocial challenges resulting from COVID-19. *Psychiatry Research*, 299, 113847. <https://doi.org/10.1016/j.psychres.2021.113847>
- Cabarkapa, S., Nadjidai, S. E., Murgier, J., & Ng, C. H. (2020). The psychological impact of COVID-19 and other viral epidemics on frontline healthcare workers and ways to address it: A rapid systematic review. *Brain, behavior, & immunity-health*, 100144.
- CDC (2020). Coping with Stress. <https://www.cdc.gov/mentalhealth/stress-coping/cope-with-stress/index.html>
- Cheema, M., Mitrev, N., Hall, L., Tiongson, M., Ahlenstiel, G., & Kariyawasam, V. (2021). Depression, anxiety and stress among patients with inflammatory bowel disease during the COVID-19 pandemic: Australian national survey. *BMJ Open Gastroenterology*, 8(1), e000581. <https://doi.org/10.1136/bmjgast-2020-000581>
- Chor, W. P. D., Ng, W. M., Cheng, L., Situ, W., Chong, J. W., Ng, L. Y. A., Mok, P. L., Yau, Y. W., & Lin, Z. (2020). Burnout amongst emergency healthcare workers during the COVID-19 pandemic: A multi-center study. *The American Journal of Emergency Medicine*, S0735675720309360. <https://doi.org/10.1016/j.ajem.2020.10.040>
- Crowe, S., Howard, A. F., Vanderspank-Wright, B., Gillis, P., McLeod, F., Penner, C., & Haljan, G. (2021). The effect of COVID-19 pandemic on the mental health of Canadian critical care nurses providing patient care during the early phase pandemic: A mixed method study. *Intensive and Critical Care Nursing*, 63, 102999. <https://doi.org/10.1016/j.iccn.2020.102999>
- Deliktas Demirci, A., Oruc, M., & Kabukcuoglu, K. (2021). 'It was difficult, but our struggle to touch lives gave us strength': The experience of nurses working on COVID-19 wards. *Journal of Clinical Nursing*, 30(5-6), 732-741. <https://doi.org/10.1111/jocn.15602>
- Di Tella, M., Romeo, A., Benfante, A., & Castelli, L. (2020). Mental health of healthcare workers during the COVID -19 pandemic in Italy. *Journal of Evaluation in Clinical Practice*, 26(6), 1583-1587. <https://doi.org/10.1111/jep.13444> *E-learning Depression, anxiety, and stress symptomatology.pdf*. (n.d.).
- Gómez-Salgado, J., Domínguez-Salas, S., Romero-Martín, M., Romero, A., Coronado-Vázquez, V., & Ruiz-Frutos, C. (2021). Work engagement and psychological distress of health professionals during the COVID-19 pandemic. *Journal of Nursing Management*, jonm.13239. <https://doi.org/10.1111/jonm.13239>
- Htay, M. N. N., Marzo, R. R., Bahari, R., AlRifai, A., Kamberi, F., El-Abasiri, R. A., Nyamache, J. M., Hlaing, H. A., Hassanein, M., Moe, S., Abas, A. L., & Su, T. T. (2021). How healthcare workers are coping with mental health challenges during COVID-19 pandemic? - A cross-sectional multi-countries study. *Clinical Epidemiology and Global Health*, 11, 100759. <https://doi.org/10.1016/j.cegh.2021.100759>
- Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Zhang, L., Fan, G., Xu, J., Gu, X., Cheng, Z., Yu, T., Xia, J., Wei, Y., Wu, W., Xie, X., Yin, W., Li, H., Liu, M., ... Cao, B. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The Lancet*, 395(10223), 497-506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)
- Kar, N., Kar, B., & Kar, S. (2021). Stress and coping during COVID-19 pandemic: Result of an online survey. *Psychiatry Research*, 295, 113598. <https://doi.org/10.1016/j.psychres.2020.113598>
- Khanal, P., Devkota, N., Dahal, M., Paudel, K., & Joshi, D. (2020). Mental health impacts among health workers during COVID-19 in a low resource setting: A cross-sectional survey from Nepal. *Globalization and Health*, 16(1), 89. <https://doi.org/10.1186/s12992-020-00621-z>
- Labrague, L. J., & Santos, J. A. A. (2020). COVID-19 anxiety among front-line nurses: Predictive role of organisational support, personal resilience and social support. *Journal of Nursing Management*, 28(7), 1653-1661. <https://doi.org/10.1111/jonm.13121>



- Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., Wu, J., Du, H., Chen, T., Li, R., Tan, H., Kang, L., Yao, L., Huang, M., Wang, H., Wang, G., Liu, Z., & Hu, S. (2020). Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. *JAMA Network Open*, 3(3), e203976. <https://doi.org/10.1001/jamanetworkopen.2020.3976>
- Lai, X., Wang, M., Qin, C., Tan, L., Ran, L., Chen, D., Zhang, H., Shang, K., Xia, C., Wang, S., Xu, S., & Wang, W. (2020). Coronavirus Disease 2019 (COVID-2019) Infection Among Health Care Workers and Implications for Prevention Measures in a Tertiary Hospital in Wuhan, China. *JAMA Network Open*, 3(5), e209666. <https://doi.org/10.1001/jamanetworkopen.2020.9666>
- Lange, K. W. (2021). Coronavirus disease 2019 (COVID-19) and global mental health. *Global Health Journal*, 5(1), 31–36. <https://doi.org/10.1016/j.glohj.2021.02.004>
- Lorente, L., Vera, M., & Peiró, T. (2021). Nurses' stressors and psychological distress during the COVID-19 pandemic: The mediating role of coping and resilience. *Journal of Advanced Nursing*, 77(3), 1335–1344. <https://doi.org/10.1111/jan.14695>
- Muller, A. E., Hafstad, E. V., Himmels, J. P. W., Smedslund, G., Flottorp, S., Stensland, S. Ø., Stroobants, S., Van de Velde, S., & Vist, G. E. (2020). The mental health impact of the covid-19 pandemic on healthcare workers, and interventions to help them: A rapid systematic review. *Psychiatry Research*, 293, 113441. <https://doi.org/10.1016/j.psychres.2020.113441>
- Munawar, K., & Choudhry, F. R. (2021). Exploring stress coping strategies of frontline emergency health workers dealing Covid-19 in Pakistan: A qualitative inquiry. *American Journal of Infection Control*, 49(3), 286–292. <https://doi.org/10.1016/j.ajic.2020.06.214>
- Orte, C. J. S., & Bautista, R. A. (2017). Echoing Difficulties of Student Nurses at Various Clinical Areas in the Hospital through Doodling. *The Upland Farm Journal*, 25(1), 97–104. [https://www.researchgate.net/publication/331310520\\_Echoing\\_Difficulties\\_of\\_Student\\_Nurses\\_at\\_Various\\_Clinical\\_Areas\\_in\\_the\\_Hospital\\_through\\_Doodling](https://www.researchgate.net/publication/331310520_Echoing_Difficulties_of_Student_Nurses_at_Various_Clinical_Areas_in_the_Hospital_through_Doodling)
- Orte, C. J. S., Bautista, R. A., Borrico, C. B., Neo, J. E. C., Parico, A. M., & De Dios, M. A. S. (2020). Comparative study on patient satisfaction on healthcare service delivery in selected private and government hospitals. *Enfermería Clínica*, 30, 47–51. <https://doi.org/10.1016/j.enfcli.2020.07.010>
- Orte, CJS, Nwosu, NOB, Maniago, JD, Matibag, RS, Corpuz, AM, Cabaluna, J. (2021). Health Promotion Practices in Nursing: A Scoping Review. *Pakistan Journal of Medical and Health Sciences*, 15(9), 2273–2278. <https://doi.org/10.53350/pjmhs211582273>
- Pinho, L., Correia, T., Sampaio, F., Sequeira, C., Teixeira, L., Lopes, M., & Fonseca, C. (2021). The use of mental health promotion strategies by nurses to reduce anxiety, stress, and depression during the COVID-19 outbreak: A prospective cohort study. *Environmental Research*, 195, 110828. <https://doi.org/10.1016/j.envres.2021.110828>
- Sarah, K., Oceane, S., Emily, F., & Carole, F. (2021). Learning from lockdown—Assessing the positive and negative experiences, and coping strategies of researchers during the COVID-19 pandemic. *Applied Animal Behaviour Science*, 236, 105269. <https://doi.org/10.1016/j.applanim.2021.105269>
- Shan, Y., Shang, J., Yan, Y., Lu, G., Hu, D., & Ye, X. (2021). Mental workload of frontline nurses aiding in the COVID-19 pandemic: A latent profile analysis. *Journal of Advanced Nursing*, 77(5), 2374–2385. <https://doi.org/10.1111/jan.14769>
- Shaukat, N., Ali, D. M., & Razzak, J. (2020). Physical and mental health impacts of COVID-19 on healthcare workers: A scoping review. *International Journal of Emergency Medicine*, 13(1), 40. <https://doi.org/10.1186/s12245-020-00299-5>
- Tan, B. Y. Q., Chew, N. W. S., Lee, G. K. H., Jing, M., Goh, Y., Yeo, L. L. L., Zhang, K., Chin, H.-K., Ahmad, A., Khan, F. A., Shanmugam, G. N., Chan, B. P. L., Sunny, S., Chandra, B., Ong, J. J. Y., Paliwal, P. R., Wong, L. Y. H., Sagayanathan, R., Chen, J. T., ... Sharma, V. K. (2020). Psychological Impact of the COVID-19 Pandemic on Health Care Workers in Singapore. *Annals of Internal Medicine*, 173(4), 317–320. <https://doi.org/10.7326/M20-1083>
- Tang, J.A.C., Orte, C.J.S., Alawi, R., Bansale, J., Limbag, C.L., & Manaog, J.A. (2018). Caring Behavior of Male Nurses Based on Clients' Perspectives in Pampanga, Philippines. *The Upland Farm Journal*, 26 (1). [https://www.researchgate.net/publication/339817618\\_Caring\\_Behavior\\_of\\_Male\\_Nurses\\_Based\\_on\\_Clients'\\_Perspectives\\_in\\_Pampanga\\_Philippines?\\_sg=g84hae-w0sUr-rDY5B4\\_2rUmX3YTVux\\_GR4CX91n96P4JGTrm-dvPlq84pkA8bL5X5b8GmWnQvNxfWf7M2dpryn-MxkqrKPuhSxi-YDPX](https://www.researchgate.net/publication/339817618_Caring_Behavior_of_Male_Nurses_Based_on_Clients'_Perspectives_in_Pampanga_Philippines?_sg=g84hae-w0sUr-rDY5B4_2rUmX3YTVux_GR4CX91n96P4JGTrm-dvPlq84pkA8bL5X5b8GmWnQvNxfWf7M2dpryn-MxkqrKPuhSxi-YDPX)
- Thatrimontrichai, A., Weber, D. J., & Apisarnthanarak, A. (2021). Mental health among healthcare personnel during COVID-19 in Asia: A systematic review. *Journal of the Formosan Medical Association*, 120(6), 1296–1304. <https://doi.org/10.1016/j.jfma.2021.01.023>
- Windarwati, H. D., Ati, N. A. L., Paraswati, M. D., Ilmy, S. K., Supianto, A. A., Rizzal, A. F., Sulaksono, A. D., Lestari, R., & Supriati, L. (2021). Stressor, coping mechanism, and motivation among health care workers in dealing with stress due to the COVID-19 pandemic in Indonesia. *Asian Journal of Psychiatry*, 56, 102470. <https://doi.org/10.1016/j.ajp.2020.102470>
- World Health Organization (2020). Mental health and psychosocial considerations during the COVID-19 outbreak. <https://www.who.int/docs/default-source/coronaviruse/mental-health-considerations.pdf>
- Zhang, M., Niu, N., Zhi, X., Zhu, P., Wu, B., Wu, B., Meng, A., & Zhao, Y. (2021). Nurses' psychological changes and coping strategies during home isolation for the 2019 novel coronavirus in China: A qualitative



- study. *Journal of Advanced Nursing*, 77(1), 308–317.  
<https://doi.org/10.1111/jan.14572>
- Zhang, W., Wang, K., Yin, L., Zhao, W., Xue, Q., Peng, M., Min, B., Tian, Q., Leng, H., Du, J., Chang, H., Yang, Y., Li, W., Shanguan, F., Yan, T., Dong, H., Han, Y., Wang, Y., Cosci, F., & Wang, H. (2020). Mental Health and Psychosocial Problems of Medical Health Workers during the COVID-19 Epidemic in China. *Psychotherapy and Psychosomatics*, 89(4), 242–250.  
<https://doi.org/10.1159/00050763>.