



An Added Challenge Amid the COVID-19 Pandemic: Critical Care Nurses Facing a Mental Health Crisis

Maria KARANIKOLA, RN, MSN, PhD,^a  and Elizabeth PAPATHANASSOGLOU, RN, MSc, PhD,^b 

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Since the onset of the COVID-19 pandemic caused by the novel severe acute respiratory syndrome (SARS)-CoV-2 coronavirus, the work demands, complexity, and intensity of critical care nursing work have been amplified, especially in large centers and in areas with increased burden of disease (Jansson & Rello, 2020). With an unprecedented up to 30% of hospitalized patients requiring intensive care unit (ICU) care (Alduraywish, 2020), overburdened healthcare systems, limitations in testing, shortages in ICU beds, ventilators, and in personal protective equipment (PPE), and ensuing ethical dilemmas, critical care nurses worldwide experience tremendous pressure and unparalleled psychological burden (Azoulay et al., 2020). In this editorial, we will briefly present data on the stressors and mental health challenges facing critical care nurses amid the COVID-19 pandemic, and we will support that these challenges are not new. Albeit currently intensified, they have been pervasive and chronic problems in critical care. Therefore, we will ponder the question “what next”? Can the COVID-19 pandemic function as a wakeup call to draw our attention to the chronic suffering of critical care nurses?

CRITICAL CARE ENVIRONMENT STRESSORS

In line with the general population, healthcare employees, including emergency and critical care nurses, experience the fear of illness of themselves and their beloved ones, socialisolation from

their supporting network and uncertainty, as well as marginalization and social stigma for being exposed to a highly contagious disease (Chopra & Arora, 2020; Lee et al. 2005; Xiao et al. 2020). Concerns regarding transmitting SARS-CoV-2 to family members constitute an added area of concern and ambiguity, which can be draining for healthcare workers (HCWs) and their families (Lai et al. 2019). The fact that the evidence on occupational transmission is inconclusive (Alberta Health Services (AHS), 2020) adds to the uncertainty. Earlier studies showed minimal additional risk (Folgueira, et al., 2020), especially, with patient contact less than 15 minutes—a time limit, nonetheless, unattainable in critical care (Canova et al., 2020). On the contrary, a subsequent study in New Jersey reported a 7% increase in absolute risk in HCW (Barrett et al., 2020), with higher rates in nurses in general (11.1%), but lower in ICU (2.1%), compared to other units (4.9%–9.7%). Reliable data on the transmission of SARS-CoV-2 from HCWs to their families are still sparse but seem to support the need for prompt household self-isolation of HCWs experiencing any symptoms (Cheng et al., 2020).

On top of these issues, the hospital working environment and healthcare system change rapidly, with new policies, procedures, and therapeutic approaches emerging daily, and being implemented with little time for training, debriefing, or adjustment (White & Lo, 2020). In many centers, critical care nurses may be providing

^aAssociate Professor, Department of Nursing, Cyprus University of Technology, Limassol, Cyprus

^bProfessor, Faculty of Nursing, University of Alberta, Scientific Director, Neurosciences Rehabilitation and Vision Strategic Clinical Network™, 5-262 Edmonton Clinic Health Academy (ECHA), 11405-87th Avenue, Edmonton, Alberta, Canada T6G 1C9. E-mail: papathan@ualberta.ca

end-of-life care and mediating remote communication with family more frequently, while they may be taking care of more patients and rationing care more often due to shortage of resources. These stressors may trigger physical, psychological, and mental disturbances, such as restlessness, agony, insomnia, anxiety and depressive symptoms in HCW (Wang et al. 2020). At the same time, the need for social distancing and isolation may worsen the psychological and mental burden in HCW (Morganstein et al. 2017).

MENTAL HEALTH RESPONSES

Anxiety, post-traumatic stress disorder (PTSD) syndrome and burnout are not new phenomena in critical care nursing. Ample evidence supports that critical care nurses' stress had acquired proportions of a health crisis even before the pandemic (Papathanassoglou & Karanikola, 2018), with up to one-third experiencing PTSD, and up to a quarter depression and significant anxiety symptoms (Mealer et al., 2007; Poncet et al., 2007). Moreover, due to the association between nurses' well-being and the quality of care (Curtis & Puntillo, 2007), these challenges constitute a tangible public health concern.

In pandemic conditions, these problems have intensified. Previous studies on nurses at the time of the SARS epidemic of 2003, showed that those working in SARS units had a higher incidence of mental distress, namely depressive symptoms, PTSD symptoms, and sleep disturbances (mainly insomnia) than nurses in other units (Robertson et al., 2004; Su et al. 2007). Also, high levels of tension and anxiety symptoms have been reported in emergency department nurses during the SARS outbreak compared to ICU nurses (Chua et al. 2004; Phua et al., 2005; Poon et al. 2004). The increased incidence of symptoms of anxiety and depression, as well as sleep disturbances have also been recorded in healthcare professionals in China who provided care in the SARS-CoV-2 pandemic (Lai et al. 2020). Currently, numerous sources report increased psychological trauma and PTSD among ICU nurses. In a multinational study on the psychological outcomes of HCW

during the COVID-19 outbreak, a considerable number of somatic symptoms was reported and a significant association with mental health outcomes (Chew et al., 2020). An additional work-related stress response in health professionals in viral epidemic conditions appears to be an increase in substance use, main alcohol, and nicotine (Morganstein et al. 2017).

Psychological burden in terms of emotional exhaustion and adverse emotions such as fear, distress, and insecurity, have been recorded in nurses with direct exposure to the care of patients in viral pandemic conditions (Maunder et al. 2003). Dysfunctional thoughts that trigger tension and emotional distress in healthcare professionals include the following: "*I am concerned that I may transmit the virus to my family, or to my colleagues*"; "*Others avoid me or will avoid me in the future being afraid that I may transmit COVID-19 to them*"; "*I am concerned that I do not have the appropriate knowledge and/or the appropriate means/equipment to protect myself from COVID-19*" (Karanikola 2020; Lee et al. 2005). The loss of perspective, pessimism, and spiritual distress have also been recorded, as well as experiences of moral distress relevant to care rationing (American College of Surgeons, 2020; White & Lo, 2020). Overall, these symptoms seem to hinder nurses' ability to fulfill their professional, as well as personal, familial, and social roles (Su et al. 2007).

NEED FOR SUPPORT

The need to provide support to diminish the physiological, psychological, and mental burden on HCW and critical care nurses, especially during outbreaks of infectious diseases (Morganstein, 2020; Su et al. 2007), has been emphasized several times, particularly in relation to past outbreaks, such as the SARS, Middle-Eastern respiratory syndrome (MERS), and Ebola outbreaks (Maben & Bridges, 2020; Robertson et al., 2004). Despite this awareness, our healthcare systems remain mostly unprepared to provide essential support to critical care nurses, during either pandemics, or regular operation, alike. We have previously

proposed that this may be in part explained by the tendency to attribute responsibility to critical care nurses themselves, gender bias, lack of solutions, and differing priorities (Papathanassoglou & Karanikola, 2018). In this context, critical care nurses are viewed as emotional and lacking resilience, and support programs tend to target individual cases, rather than the systemic shortcomings of the healthcare system. The COVID-19 pandemic has all but exposed the deficiencies of our healthcare systems worldwide, which rely heavily on nurses, while at the same time fail to provide organizational structures, resources, and funding to safeguard their well-being. Ensuring nurses' and HCW's well-being needs to be a central objective of healthcare, as poor well-being and burnout have been overwhelmingly associated with compromised patient outcomes and safety, worldwide (Hall et al., 2016). Moreover, with the documented psychiatric morbidities of COVID-19 patients and survivors (O'Hanlon & Inouye, 2020), an increased emphasis on HCWs' mental health is a prerequisite for the early and long-term psychological support and rehabilitation of patients and families.

A supportive environment in the workplace needs to be ensured by administrators for all employees, while empowerment interventions and relevant facilities need to be available for those most at risk, that is, those in referral centers and with the closest patient contact, as well as for those working in clinical settings with unpredictable conditions, that is, emergency departments (Brooks et al. 2018). Addressing physiological and safety needs, that is, need for adequate PPE and access to testing, food, drinks, sleep, and rest in comfort, is essential and highly prioritized in stressful conditions by HCW (Chen et al. 2020). Specifically, data from China show that psychological support was not a priority for healthcare professionals at the pick of the crisis; instead physiological needs as described above, and reassurance about their families' safety were at the forefront (Chen et al. 2020). One explanation may be that those in front lines do not seek help for psychological and mental needs or

are reluctant to focus on their own needs (Institute for Healthcare Improvement [IHI], 2020). Thus, administrators need to bring support to HCW and facilitate *them* to activate their own resilience mechanisms. Thus, following physiological needs and safety reassurance, adequate Psychological Personal Protective Equipment (P-PPE) is also of paramount importance (Maben & Bridges, 2020). P-PPE is about practically protecting the psychological and mental well-being of HCW, a term introduced by the IHI (2020). The P-PPE tool endorsed by the IHI provides easily applied evidence-based recommendations to support mental and psychological well-being of those working in extremely stressful conditions, including pandemics. The focus is on reducing agony and distress and promoting safety, peer support, and solidarity among employees by incorporating support strategies into everyday routine without increasing employee's workload. For instance, one way to promote high morale and boost joy in the healthcare team is by huddling at the end of every shift and each one sharing one incident or experience that made her/him feel valued or happy during the shift (IHI, 2020). This exercise is expected to encourage employees to open up and participate in an empowering conversation.

Overall, a number of personal and team leadership approaches have been found effective in prior outbreaks and mass trauma situations (Karanikola, 2020). Ensuring mental and psychological well-being necessitates a layered intervention plan, encompassing multiple approaches at different times and levels, that is, personal, team, organizational, and social; encompassing strategies focused on prevention, treatment, and rehabilitation (Maben & Bridges, 2020). Overall, supportive strategies may be adopted by individuals and leaders to empower healthcare personnel and support healthcare organization. For instance, the Center for the Study of Traumatic Stress in Bethesda, Maryland, offers insightful, evidence-based "psychological first aid" principles, easily accessible to HCW (Brooks et al. 2018). In the United Kingdom, HCW are given financial and practical assistance for everyday living, free

access to approximately 1,500 medical specialists, group counselling and online psychological therapies, as well as bereavement and psychological support. Also, volunteers support phone and text helplines, while the National Health System is further offering free access to supportive Applications such as Headspace, UnMind and Big Health for HCW and their families. These applications include relaxation techniques, guided meditation, and exercises for anxiety and sleep difficulties management (Maben & Bridges, 2020). As work-related stress and burnout in critical and emergency healthcare professionals remains a problem worldwide; the COVID-19 pandemic may be a valuable opportunity to destigmatizing psychological and mental health support for HCW (Maben & Bridges, 2020).

CONCLUSION

The burden of critical care has risen since the beginning of the COVID-19 pandemic, and previously identified effects on the psychological well-being of nurses have intensified. As most critical care nurses involved in the care of COVID-19 patients operate under unprecedented pressures, they exhibit significant psychiatric morbidities, and this is expected to take its toll on patients' and families' outcomes. The protracted pandemic has made the need for healthcare systems worldwide to re-think their structures and allocate resources to healthy work environments and HCWs' well-being more pressing than ever.

REFERENCES

- Alberta Health Services. (2020). *COVID-19 scientific advisory group*. <https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-COVID-19-hcw-risk-rapid-review.pdf>
- Alduraywish, T. (2020). Impact of COVID-19 on mental health of critical care nurses. *Midwifery Practice and Nursing Standards, 2020*(1), 01–03. doi:10.33513/MPNS/2001-03
- American College of Surgeons. (2020). *Bulletin: ACS COVID-19 Update-March 24. Ethical considerations*. Retrieved March 20, 2020, from <https://www.facs.org/COVID-19/newsletter/032420/ethics>
- Azoulay, E., Waele, De., J, Ferrer., R, Staudinger., T, Borkowska., M, Pova., P, Iliopoulou., K, Artigas., A, Schaller., J, S., Hari, M. S., Pellegrini, M., Darmon, M., Kesecioglu, J., & Cecconi, M. (2020). Symptoms of burnout in intensive care unit specialists facing the COVID-19 outbreak. *Ann Intensive Care, 10*(110), 1–8. doi:10.1186/s13613-020-00722-3
- Barrett, E. S., Horton, D. B., Roy, J., Laura, M., Gennaro, L., Brooks, A., Tischfield, J., Greenberg, P., Andrews, T., Jagpal, S., Reilly, N., Blaser, M. J., Carson, J., & Panettieri, R. A., Jr. (2020). Prevalence of SARS-CoV-2 infection in previously undiagnosed health care workers at the onset of the US COVID-19 epidemic. MedRxiv [Preprint]. <https://www.medrxiv.org/content/medrxiv/early/2020/04/24/2020.04.20.20072470.full.pdf>
- Brooks, S. K., Dunn, R., Amlôt, R., Rubin, G. J., & Greenberg, N. (2018). A systematic, thematic review of social and occupational factors associated with psychological outcomes in healthcare employees during an infectious disease outbreak. *Journal of Occupational and Environmental Medicine, 60*(3), 248–257. doi:10.1186/s13613-020-00722-3
- Canova, V., Schläpfer, H., Piso, R. J., Droll, A., Fenner, L., Hoffmann, T., & Hoffmann, M. (2020). Transmission risk of SARS-CoV-2 to healthcare workers: Observational results of a primary care hospital contact tracing. *Swiss Medical Weekly, 150*, 20257. doi:10.4414/sm w.2020.20257
- Cheng, H. Y., Jian, S. W., Liu, D. P., Ng, T. C., Huang, W. T., & Lin, H. H. (2020). Contact tracing assessment of COVID-19 transmission dynamics in Taiwan and risk at different exposure periods before and after symptom onset. *JAMA Internal Medicine, 180*(9), 1156–1163. doi:10.1001/jamainternmed.2020.2020
- Chen, Q., Liang, M., Li, Y., Guo, J., Fei, D., Wang, L., He, L., Sheng, C., Cai, Y., Li, X., Wang, J., & Zhang, Z. (2020). Mental health care for medical staff in China during the COVID-19 outbreak. *The Lancet, 7*(4), 15–16. doi:10.1016/S2215-0366(20)30078-X

- Chew, N. W. S., Lee, G. K. H., Tan, B. Y. Q., Jing, M., Goh, Y., Ngiam, N. J. H., Yeo, L. L. L., Ahmad, A., Khan, F. A., Shanmugam, G. N., Sharma, A. K., Komalkumar, R. N., Meenakshi, P. V., Shah, K., Patel, B., Chan, B. P. L., Sunny, S., Chandra, B., Ong, J. J. Y., . . . Sharma, V. K. (2020). A multinational, multicenter study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. *Brain, Behavior, and Immunity*, *88*, 559–565. doi:10.1016/j.bbi.2020.04.049
- Chopra, K. K., & Arora, V. K. (2020). COVID-19 and social stigma: Role of scientific community. *Indian Journal of Tuberculosis*, *67*(3), 284–285. doi:10.1016/j.ijtb.2020.07.012
- Chua, S. E., Cheung, V., Cheung, C., Cheung, C., McAlonan, G. M., Wong, W. S. J., Cheung, E. P. T., Chan, T. Y. M., Wong, M. C. M., Tang, S. W., Choy, K. M., Wong, M. K., Chun, M. C., & Tsang, K. W. T. (2004). Psychological effects of the SARS outbreak in Hong Kong on high-risk health care workers. *Canadian Journal of Psychiatry Nursing*, *49*(6), 391–398. doi:10.1177/070674370404900609
- Curtis, J. R., & Puntillo, K. (2007). Is there an epidemic of burnout and post-traumatic stress in critical care clinicians? *American Journal of Respiratory and Critical Care Medicine*, *175*(7), 634–636. doi:10.1164/rccm.200702-194ED
- Folgueira, M. D., Munoz-Ruiperez, C., Alonso-Lopez, M. A., & Delgado, R. (2020). SARS-CoV-2 infection in Health Care Workers in a large public hospital in Madrid, Spain, during March 2020. *MedRxiv*. <https://doi.org/10.1101/2020.04.07.20055723>
- Hall, L. H., Johnson, J., Watt, I., Tsipa, A., & O'Connor, D. B. (2016). Healthcare staff well-being, burnout, and patient safety: A systematic review. *PLOS ONE*, *11*(7), 1–12. doi:10.1371/journal.pone.0159015
- Institute for Healthcare Improvement. (2020, August 7). *Psychological PPE: Promote health care workforce mental health and well-being..* Retrieved September 7, 2020, from <http://www.ihl.org/resources/Pages/Tools/psychological-PPE-promote-health-care-workforce-mental-health-and-well-being.aspx>
- Jansson, M., & Rello, J. (2020). Mental health in healthcare workers and the COVID-19 pandemic era: Novel challenge for critical care. *Journal of Intensive and Critical Care*, *6*(2), 1–2.
- Karanikola, N. K. M. (2020). Mitigating psychological, emotional, mental, and spiritual implications in healthcare professionals during the SARS-CoV-2 Pandemic. *Hellenic Journal of Nursing*, *59*(1), 9–16.
- 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., Wanf, 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), 1–12. doi:10.1001/jamanetworkopen.2020.3976
- Lee, S. H., Juang, Y. Y., Su, Y. J., Lee, H. L., Lin, Y. H., & Chao, C. C. (2005). Facing SARS: Psychological impacts on SARS team nurses and psychiatric services in a Taiwan general hospital. *General Hospital Psychiatry*, *27*(5), 352–358. doi:10.1016/j.genhosppsych.2005.04.007
- Maben, J., & Bridges, J. (2020). COVID-19: Supporting nurses' psychological and mental health. *Journal of Clinical Nursing*, *29*(16), 2742–2750. doi:10.1111/jocn.15307
- Maunder, R., Hunter, J., Vincent, L., Bennett, J., Peladeau, N., Leszcz, M., Sadavoy, J., Verhaeghe, M. L., Steinberg, R., & Mazzulli, T. (2003). The immediate psychological and occupational impact of the 2003 SARS outbreak in a teaching hospital. *Canadian Medical Association*, *168*(10), 1245–1251.
- Mealer, M. L., Shelton, A., Berg, B., Rothbaum, B., & Moss, M. (2007). Increased prevalence of post-traumatic stress disorder symptoms in critical care nurses. *American Journal of Respiratory and Critical Care Medicine*, *175*(7), 693–697. doi:10.1164/rccm.200606-735OC
- Morganstein, J. C. (2020). Coronavirus and mental health: Taking care of ourselves during infectious disease outbreaks 2020.

Retrieved September 11, 2020, from <https://www.psychiatry.org/news-room/apablogs/apa-blog/2020/02/coronavirus-andmental-health-taking-care-of-ourselves-during-infectious-disease-outbreaks>

- Morganstein, J. C., Fullerton, C. S., Ursano, R. J., Donato, D., & Holloway, H. C. (2017). Pandemics: Health care emergencies. In J. S. Ursano, C. S. L. Fullerton, & B. Weisaeth (Eds.), *Textbook of disaster psychiatry* (2nd ed.). Cambridge University Press.
- O'Hanlon, S., & Inouye, S. K. (2020). Delirium: A missing piece in the COVID-19 pandemic puzzle. *Age and Ageing, 49*(4), 497–498. doi:10.1093/ageing/afaa094
- Papathanassoglou, E., & Karanikola, M. (2018). Stress in critical care nurses: A policy perspective. *Nursing in Critical Care, 23*(3), 117–120. doi:10.1111/nicc.12352
- Phua, D. H., Tang, H. K., & Tham, K. Y. (2005). Coping responses of emergency physicians and nurses to the 2003 severe acute respiratory syndrome outbreak. *Academic Emergency Medicine, 12*(4), 322–228. doi:10.1197/j.aem.2004.11.015
- Poncet, M. C., Toullic, P., Papazian, L., Kentish-Barnes, N., Timsit, F., Pochard, F., Chevret, S., Schlemmer, B., & Azoulay, E. (2007). Burnout syndrome in critical care nursing staff. *American Journal of Respiratory and Critical Care Medicine, 175*(7), 698–704. doi:10.1164/rccm.200606-806OC
- Poon, E., Liu, K. S., Cheong, D. L., Lee, C. K., Yam, L. Y., & Tang, W. N. (2004). Impact of severe acute respiratory syndrome on anxiety levels of front-line healthcare workers. *Hong Kong Medicine Journal, 10*(5), 325–330.
- Robertson, E., Hershenfield, K., Grace, S. L., & Stewart, D. E. (2004). The psychological effects of being quarantined following exposure to SARS: A qualitative study of Toronto health care workers. *Canadian Journal of Psychiatry, 49*(6), 403–407. doi:10.1177/070674370404900612
- Su, T. P., Lien, T. C., Yang, C. Y., Su, Y. L., Wang, J. H., Tsai, S. L., & Yin, J. C. (2007). Prevalence of psychiatric morbidity and psychological adaptation of the nurses in a structured SARS caring unit during outbreak: A prospective and periodic assessment study in Taiwan. *Journal of Psychiatry Research, 41*(1–2), 119–130. doi:10.1016/j.jpsychires.2005.12.006
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 Coronavirus disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health, 17*(5), 2–25. doi:10.3390/ijerph17051729
- White, D. B., & Lo, B. (2020). A framework for rationing ventilators and critical care beds during the COVID-19 Pandemic. *Journal of American Medical Association, 323*(18), 1773–1774. doi:10.1001/jama.2020.5046
- Xiao, H., Zhang, Y., Kong, D., Li, S., & Yang, N. (2020). Social capital, and sleep quality in individuals who self-isolated for 14 days during the coronavirus disease 2019 (COVID-19) outbreak in January 2020 in China. *Medical Science Monitor, 20*(26), e923921. doi:10.12659/MSM.923921