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Perceived Stress During COVID-19 Pandemic: The Malaysian Nurses Experience

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Abstract

Research shows that nurses are one of the most vulnerable categories of professionals to develop stress and other problems due to the nature of their job. Thus the objective of this study is to describe the perceived stress experienced during the COVID-19 pandemic among Malaysian nurses. A cross-sectional study was conducted through an online form involving 319 randomly selected nurses from a teaching hospital on the east coast of Pahang, Malaysia, between January to December 2022. The perceived stress was measured using the Malay version 10-item Perceived Stress Scale, PSS-10 questionnaire. Descriptive and linear regression analysis was applied to measure the mean score of perceived stress and the association between perceived stress scores and other factors in this population. The study found that the total mean score of PSS-10 among the respondents was 19.1 ± 5.8. The three items with the highest mean scores were under the subscales "lack of self-efficiency" of the questionnaire (item-4, item-7, and item 5), while the item with the lowest mean scores belonged to subscales "perceived helplessness" (item-10). However, further analysis performed shows no significant association between perceived stress towards COVID-19 with sociodemographic and work-related factors among respondents. This study concluded that lack of self-efficiency was perceived as the main stress experienced by Malaysian nurses during the COVID-19 pandemic. Thus, it is pivotal that the nurse's manager and higher authority of the organization focus on improving the efficiency of these nurses through targeted programs focusing on problem-solving, emotional and on-the -job management plan, along with accessibility to resources, a positive work environment and support.

Keywords: Perceived Stress, Pandemic, Nurses.

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1. INTRODUCTION

Stress classically refers to "the bodily processes that result from circumstances that place physical or psychologic demands on an individual". Although a certain degree of stress can facilitate task performance, it becomes problematic when the demands outweigh the perceived resources to cope (Selye, 1973; Folkman & Lazarus, 1988). Similarly, World Health Organization, WHO defines stress as any type of change that causes physical, emotional, or psychological strain; or the reaction people may have when presented with demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope. Additionally, it may also cause negative and positive emotions and has both physical and mental effects (Ersöğütçü & Şener, 2019; WHO, 2023).

It is an undeniable fact that the COVID-19 pandemic has leave a massive impact on human populations globally. Focusing on Malaysia, even though the country is recognized as one of the countries that have successfully controlled the pandemic, thanks to the efficient public health system, it still experiences the same massive impacts of this pandemic. As a results, the number of job retractions and business losses keep on rising day by day. The situations were made worse by the second and third wave of this pandemic. The continuum of the scenario were the socioeconomic and health impacts of the population. Addressing on a healthcare, with the increase health and disease burden as a direct and indirect impact of the pandemic, the job expectations such as long hours of work, lesser day-off, shrinking staff numbers during each shift due to compulsory quarantine, especially when they are suspected to be in contact with a positive patient, unclear or administrative instructions which keep on changing, worrying about family members at home, aging parents etc, has made the impacts to be even more pronounced (Zhan, et al., 2020; Llop-Gironés et al., 2021; ASPE, 2022; Wanninayake, O'Donnell & Williamson, 2022).

Zeroing on nurses, they uninterruptedly continued to work in such a critical situation, taking the risk to be affected by COVID-19 makes them one of the most vulnerable categories of professionals to develop psychological stress and other mental health symptoms. Previous studies even shows that majority of the healthcare workers reported a perceived stress towards, and as a result of; working during the COVID-19 pandemic for a prolonged period of time. Thus, understanding the immediate mental health and psychological response of the healthcare providers after a public health emergency is important for implementing better prevention and response mechanisms to a disaster (Babore et al., 2020; Chekole, Yimer, Mekonnen, & Mekuriaw, 2020; King, Farrington, Donohue, & McCann, 2021; Aloweni, Ayre, Teo, Tan, & Lim, 2022).

In term of measurement, the current study is using the Perceived Stress Scale (PSS), one of the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes a number of direct queries about current levels of experienced stress. The PSS was designed for use in community samples with at least a junior high school education. The items are easy to understand, and the response alternatives are simple to grasp. Moreover, the questions are of a general nature and hence are relatively free of content specific to any subpopulation group. In interest of using the most adaptable version of the questionnaire, the Malay version of PSS-10 will be used for this study. These versions of questionnaire have also been reliably used among a varied of populations including patients and other specific populations (Al-Dubai, Barua, Ganaseqeran, Ali Jadoo, & Rampal, 2014; Sandhu, Ismail & Rampal, 2015; Siang, et al., 2016; Ibrahim, Cham, Chu, Kalaman, & Siau, 2023). Therefore, this study aims to describe the perceived stress experience by the nurses during the pandemic COVID-19 among the Malaysian nurses.

2. RESEARCH METHOD

The study was conducted as an online cross-sectional study whereby data collections were elicited using self-filled online questionnaire between January to December 2022. A list of all registered nurses obtained from the hospitals administration office was used as the sampling frame. Respondents were then randomly selected from this sampling frame using Excel randomly generated numbers.

All selected nurses who were a registered employee of IIUM Sultan Ahmad Shah Medical Centre@IIUM (SASMEC@IIUM), Pahang, Malaysia either on permanent or contract basis, or nurses who were an employee of other organization (eg ministry of health) but currently doing nursing work as part of his or her post basic or post graduate clinical attachment were recruited as the participants of this study. Meanwhile, undergraduate nursing students and those who were a known case of or been diagnosed and treated as having mental related problems, including depression, stress or anxiety, were excluded from the study

The sociodemographic data collected were explained in detail in a previous paper which was conducted to study the perceived threat and coping mechanism adopted among this population (Pasi, Kamaruzaman, & Basri, 2022). In a nutshell, the data encompassed the information on social and demographic characteristics, work related information and on history of contact with positive COVID-19 patient while on duty.

On the measurement of respondents' perceived stress, the Perceived Stress Scale, PSS developed by Cohen, Kamarck and Mermelstein (1983) is a widely used self-report measure assessing "the degree to which situations in one's life are appraised as stressful". The scale measures, over the past month, the degree to which life has been experienced as unpredictable, uncontrollable, and overloaded. Due to the low factor loadings on four items, the scale's original 14 items were subsequently reduced to 10 by Cohen and Williamson (1988), which slightly increased the scale's reliability as measured by Cronbach's alpha (ranging from 0.67 to 0.91). For telephone interviews or other time-constrained circumstances, a further 4-item version was created; however, it has not performed as well as the full 14- and 10-item versions (Cohen & Williamson, 1988).

The PSS-10's Malay version was the same validated version that was used in previous research among Malaysian medical students (Al-Dubai et. al. 2014). The PSS-10 measures the degree to which one perceives aspects of one's life as stressful. It has a 5-point Likert scale and response ranged from 0 (never) to 4 (very often), indicating how often they have felt within the past month. Total scores range from 0 to 40, with higher scores indicating greater perceived stress. Six out of 10 items of the PSS-10 were considered negative (1, 2, 3, 6, 9 and 10) and the remaining four as positive (4, 5, 7 and 8), representing "perceived distress" and "perceived coping," respectively. The Cronbach's alpha values for Malay versions of the scale were reported to be between 0.70 to 0.85.

The study was approved by the university's research ethical committee and SASMEC@IIUM research committee. A general description, including an informed consent form, was posted through email and WhatsApp messaging. Respondents had been assured that all the information would be kept confidential. Additionally, the grant to finance the conduct of this study was awarded by the Sultan Ahmad Shah Medical Centre@IIUM, SASMEC Research Grant 2021 (Project ID: SRG21-004-0004).

Regarding analysis, data collected was analyzed using the IBM SPSS Statistics for Windows, Version 26.0. All continuous variables were described using mean (SD) and / or median (IQR) whereas for categorical data as frequency (%). Univariate and multiple linear regression were applied to assess the association between perceived stress scores towards COVID-19 with other factors in this populations.

3.   RESULTS AND DISCUSSION

This study was conducted to explore the perceived stress experienced by nurses during the COVID-19 pandemic among Malaysian nurses.

Table 1. Respondents sociodemographic and work characteristic (N=319).

Sociodemographic characteristic	n	Mean (Standard deviation)	Percentage
Age (years)	319	28.8 (5.1) (minimum= 22, maximum= 63)	
Ethnic group			
Malay	309		96.9
Indian	2		0.6
Bumiputera Sabah	7		2.2
Other (Eurasian)	1		0.3
Marital status			
Single	136		42.6
Married	182		57.1
Divorcee	1		0.3
No of living child		1(1) (minimum=0, maximum= 5)	
Highest formal education			
Attained			
Diploma	303		95.0
Degree	15		4.7
Master	1		0.3
Household income/ month (RM)			
Median		RM 3,100	
Interquartile range			
25%		RM 2,500	
50%		RM 3,100	
75%		RM 5,000	
Total no of household		4 (2) (minimum= 1, maximum= 12)	
Total no of years' services as nurse (years)		3.0 (2.4) (minimum= 1, maximum= 17)	
Total no of years working in the current ward/ unit (years)		2.5 (1.9) (minimum= 1, maximum= 14)	
No of days on night duty in this past 1 week (days)		1(1) (minimum=0, maximum= 3)	
No of days-off in this past week (days)		2 (1) (minimum=0, maximum= 3)	

History of contact with positive COVID-19 patient while on duty?		
Yes	192	60.2
No	127	39.8

Table 1 present the sociodemographic and work characteristic of the respondents. The response rate for this study was found to be 91.1% (319 out of the 350 calculated sample size) with all being Muslim and more than ninety percent were Malay female (96.9%, 94.6%). Married and single respondents were equally represented with mean number of households of four and one for child. The median household income was reported at equivalent to about USD 700.00 per month with 90.0% attained highest education at the diploma level. In term of work, their mean year of service as nurse was three years and being at their current ward or unit for about more than two years. Additionally, more than sixty percent reported history of contact with positive COVID-19 patents while on duty.

Table 2. Perceived Stress Scale, PSS-10 Mean Scores among respondents (N=319).

PSS-10 Items (In the last month, how often)	**Mean ± Standard deviation**
PSS-10: Item 1 …have you been upset because of something that happened unexpectedly?	1.89 ± 0.97
PSS-10: Item 2 …have you felt that you were unable to control the important things in your life?	1.61 ± 0.95
PSS-10: Item 3 ... have you felt nervous and stressed?	1.86 ± 0.96
PSS-10: Item 4 …have you felt confident about your ability to handle your personal problems?	2.29 ± 0.90
PSS-10: Item 5 …have you felt that things were going your way?	2.10 ± 0.84
PSS-10: Item 6 …have you found that you could not cope with all the things that you had to do?	1.66 ± 0.86
PSS-10: Item 7 …have you been able to control irritations in your life?	2.27 ± 0.87
PSS-10: Item 8 …have you felt that you were on top of things?	2.06 ± 0.78
PSS-10: Item 9 …have you been angered because of things that happened that were outside of your control?	1.76 ± 0.95
PSS-10: Item 10 …have you felt difficulties were piling up so high that you could not overcome them?	1.59 ± 0.95
Total mean PSS-10 scores	19.08 ± 5.77

Table 2 describes the perceived stress related to COVID-19 among respondents. The total mean score of PSS-10 among the respondents was 19.1 ± 5.8. The item with the highest mean score was item- 4 (… [in the last month] how often have you felt confident about your ability to handle your personal problems?) with mean score of 2.29 ± 0.90 followed by item- 7 (… [in

the last month] how often have you been able to control irritations in your life?) and item-5 (… [in the last month] how often have you felt that things were going your way?...) with mean score of 2.27 ± 0.87 and 2.10 ± 0.84 respectively. The lowest mean perceived threat was item-10 with mean score of 1.59 ± 0.95 (… [in the last month] how often have you felt difficulties were piling up so high that you could not overcome them?...).

A further analysis was performed to investigate if there are any association between perceived stress towards COVID-19 with sociodemographic and work-related factors among respondents of this study. Lamentably, results revealed that there were no significant association between perceived stress towards COVID-19 with any of these variables (results were not shared here). Thus, no further analyses were performed.

As explained above, the analysis revealed that the total mean score of PSS-10 among the respondents was 19.08 ± 5.77. Out of the 10 items listed in the scale, item number four which asked "(… [in the last month] have you felt confident about your ability to handle your personal problems?" scored the highest mean of 2.29 ± 0.09. This item focuses on personal problem as the highest perceived stress among nurses in this study. Despite its significant role, not many researchers were interested on highlighting the negative effect of personal problems on the workplace. However, it is important to note that without proper intervention, the personal problem has the potential to spill over into the workplace, which resulted in not only magnifying the existing other stressor among this healthcare workers, but also may even cause adverse effect in patient care (Bhui, Dinos, Galant-Miecznikowska, de Jongh, & Stansfeld, 2016; Khamisa, Peltzer, Ilic, & Oldenburg, 2017; Yu, Raphael, Mackay, Smith, & King, 2019).

The second highest mean score of PSS-10 item recorded among the respondents was the item number seven which asked "(… [in the last month] how often have you been able to control irritations in your life?)?" with the score of 2.27 ± 0.87. This item focuses on the ability of respondents to control irritations, which he or she perceived as one of the main contributors of stress in their life. Irritations which is a state of feeling annoyed or angry, could arise or experienced by nurses when they perceived that they were subjected to a discriminatory situation, either in a form of treatment by patients, colleagues, or superiors. Often nurses must suppress or avoid expressing their irritations, a situation known as emotional dissonance, whereby there is a difference between the emotions they experience and those they need to express. This in turn causes them to feel stress, helpless, frustrated or even resentment (Han, Won, Kim, & Lee, 2015; Yun & Yoo, 2021, Cybulska et al., 2022).

The third highest mean score of the PSS-10 item among these respondents was item number five which asked (… [in the last month] how often have you felt that things were going your way?) with the score of 2.10 ± 0.84. This item highlighting the nurses concern on how their performance and their ability to follow through and proceed according to theirs or their manager has planned can itself become a stressor for them. The nature of their work with complex job demands and needs, high expectations, excessive responsibility, and minimal authority will easily be causing what was carefully planned to be going in the opposite directions. Eventually the magnitude of the problem causes them to end up feeling overwhelmed, and it is significant enough to be one of the high-perceived stressors for their works environment (Jacobs and Lourens 2016; Jäppinen, Roos, Slater, & Suominen, 2021; Babapour, Gahassab-Mozaffari, & Fathnezhad-Kazemi, 2022).

It is interesting to note that the three items with the highest mean score of the PSS-10 among this population, which is items four, five and seven were all fall under the same subscales of the questionnaire. And even more interesting is that even though it was not discussed above, the fourth highest item's mean score was coincidently item number eight, which is the last four item within the mentioned subscale. These four items (items four, five, seven and eight) were known as the subscales for "lack of self-efficiency" which measuring an individual's perceived inability to handle problems. As a comparison, the other six items of the

scales (items one, two, three, six, nine and ten) belongs to the subscales of "perceived helplessness" that measuring an individual's feelings of a lack of control over their circumstances or their own emotions or reactions. All these items have much lower mean scores (range from 1.89 to 1.61) as compared to the four items under the initial subscale. Thus, it can be concluded that nurses in this study have a strong control over the situation, and able to adapt their work and emotions accordingly during the pandemic. However, when it comes to perceiving their efficiency in handling the repetitive and multiple problems related to the pandemic which include but not limited to both personal and job-related problem, it causes significant stress to them (Roberts & Grubb, 2014; Soudagar, Rambod, & Beheshtipour, 2015; Khomami and Rustomfram, 2019).

It is substantial to mention a few of the limitations faced by this study. Firstly, it will not be possible to accurately determine any causal relationships among variables, owing to the design of this study which is a cross sectional. Secondly, data collection was carried out through a self-filled online questionnaire. Thus, make it prone to information bias. Thirdly, the current study was conducted when the country already facing out and moving towards the endemic phase of COVID-19. Therefore, it may confound the effect on the variables of this study. And lastly, the sample population of this study came from a single center, which is a teaching hospital in Pahang, Malaysia. Hence, the results must be interpreted with cautious if it is to be applied to a population from different setting and background. Nevertheless, the findings may be useful in improving the organization management by implementing a suitable programmed for nurses.

4. CONCLUSION

Findings of the current study show that lack of self-efficiency which encompasses ability to handle problems, control irritation and carried out task as planned were perceived as the main stress experienced by Malaysian nurses during the pandemic COVID-19. Thus, it is pivotal that the nurse's manager and higher authority of the organization focuses on improving the efficiency of these nurses, through targeted programme focusing on problem solving, emotional and on-the-job management plan, along with accessibility to resources, positive work environment and supports.

REFERENCES

Al-Dubai, S. A., Barua, A., Ganasegeran, K., Jadoo, S. A., & Rampal, K. G. (2014). Concurrent validity of the Malay version of Perceived Stress Scale (PSS-10). *Asian J Psychiatr*, *15*(1), 8-13. Retrieved from https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=0a707aec918fbeb47 cb6a2885dc1bf86c1255320#page=14

Aloweni, F., Ayre, T. C., Teo, I., Tan, H. K., & Lim, S. H. (2022). A year after COVID-19: Its impact on nurses' psychological well-being. *Journal of Nursing Management*, *30*(7), 2585-2596. https://doi.org/10.1111/jonm.13814

ASPE. (2022). Impact of the COVID-19 pandemic on the hospital and outpatient clinician workforce: Challenges and policy responses. Retrieved from https://aspe.hhs.gov/reports/covid-19-health-care-workforce

Babapour, A. R., Gahassab-Mozaffari, N., & Fathnezhad-Kazemi, A. (2022). Nurses' job stress and its impact on quality of life and caring behaviors: a cross-sectional study. *BMC nursing, 21(1), 75.* https://doi.org/10.1186/s12912-022-00852-y

Babore, A., Lombardi, L., Viceconti, M. L., Pignataro, S., Marino, V., Crudele, 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

Bhui, K., Dinos, S., Galant-Miecznikowska, M., de Jongh, B., & Stansfeld, S. (2016). Perceptions of work stress causes and effective interventions in employees working in public, private and non-governmental organisations: a qualitative study. *BJPsych bulletin, 40(6), 318–325*. https://doi.org/10.1192/pb.bp.115.050823

Chekole, Y. A., Yimer, M. S., Mekonnen, A.S., & Mekuriaw, B. (2020). Perceived stress and its associated factors during COVID-19 among healthcare providers in Ethiopia: A cross-sectional study. *Advances in Public Health, 2020, 1–7.* https://doi.org/10.1155/2020/5036861

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24(4), 385–396*. https://doi.org/10.2307/2136404

Cohen, S., & Williamson, G. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan, & S. Oskamp (Eds.), *The Social Psychology of Health: Claremont Symposium on Applied Social Psychology* (pp. 31-67). Newbury Park, CA: Sage Publications, Inc.

Cybulska, A. M., Rachubińska, K., Stanisławska, M., Grochans, S., Cymbaluk-Płoska, A., & Grochans, E. (2022). Analysis of factors related to mental health, suppression of emotions, and personality influencing coping with stress among nurses. *International Journal of Environmental Research and Public Health*, *19*(16), 9777. https://doi.org/10.3390/ijerph19169777

Ersöğütçü, F., & Şener, N. (2019). Stress as a basic concept and nursing approaches. *Biomedical Journal of Scientific & Technical Research, 21(5), 16225–16227*. https://doi.org/10.26717/BJSTR.2019.21.003669

Folkman, S., & Lazarus, R. S. (1988). Coping as a mediator of emotion. *Journal of Personality and Social Psychology, 54(3), 466–475.* https://doi.org/10.1037/0022-3514.54.3.466

Han, A., Won, J., Kim, O., & Lee, S. E. (2015). Anger expression types and interpersonal problems in nurses. *Asian Nursing Research, 9(2), 146–151.* https://doi.org/10.1016/j.anr.2015.04.001

Ibrahim, N., Cham, C. Q., Chu, S. Y., Kalaman, C. R., & Siau, C. S. (2023). Translation and validation of the Malay perceived stress scale modified for covid-19. *Malaysian Journal of Medical Sciences, 30(2), 161–171*. https://doi:10.21315/mjms2023.30.2.15

Jacobs, A. C., & Lourens, M. (2016). Emotional challenges faced by nurses when taking care of children in a private hospital in South Africa. *Africa Journal of Nursing and Midwifery, 18(2), 196–210*. https://doi.org/10.25159/2520-5293/1076

Jäppinen, K., Roos, M., Slater, P., & Suominen, T. (2021). Connection between nurse managers' stress from workload and overall job stress, job satisfaction and practice environment in Central Hospitals: A cross-sectional study. *Nordic Journal of Nursing Research*, *42*(2), 109–116. https://doi.org/10.1177/20571585211018607

Khamisa, N., Peltzer, K., Ilic, D., & Oldenburg, B. (2017). Effect of personal and work stress on burnout, job satisfaction and general health of hospital nurses in South Africa. *Health SA Gesondheid - Journal of Interdisciplinary Health Sciences, December 22, 252-258.* https://doi.org/10.1016/j.hsag.2016.10.001

Khomami, H. M., & Rustomfram, N. (2019). Nursing efficiency in patient care: A comparative study in perception of staff nurse and hospital management in a trust hospital. *Journal of Family Medicine and Primary Care, 8(5), 1550–1557.* https://doi.org/10.4103/jfmpc.jfmpc_37_19

King, M., Farrington, A., Donohue, G., & McCann, E. (2021). Psychological impact of the COVID-19 pandemic on Mental Health Nurses. *Issues in Mental Health Nursing*, *43*(4), 300–307. https://doi.org/10.1080/01612840.2021.1978598

Llop-Gironés, A., Vračar, A., Llop-Gironés, G., Benach, J., Angeli-Silva, L., Jaimez, L., … Julià, M. (2021). Employment and working conditions of nurses: Where and how health inequalities have increased during the COVID-19 pandemic? *Human Resources for Health, 19(1), 1–11.* https://doi.org/10.1186/s12960-021-00651-7

Pasi, H., Kamaruzaman, N. A., Basri, N. A., Manan, N. H. A., & Nasreen, H. E. (2022). Translation and Validation of Malay Version 5-Items Brief Illness Perception Questionnaire, BIP-Q5 towards COVID-19 among Malaysian Nurses. *Advances in Infectious Diseases*, *12*(3), 383-391. https://doi.org/10.4236/aid.2022.123030.

Roberts, R. K., & Grubb, P. L. (2014). The consequences of nursing stress and need for Integrated Solutions. *Rehabilitation Nursing, 39(2), 62–69.* https://doi.org/10.1002/rnj.97

Sandhu, S. S., Ismail, N. H., & Rampal, K. G. (2015). The Malay version of the Perceived Stress Scale (PSS)-10 is a reliable and valid measure for stress among nurses in Malaysia. *The Malaysian Journal of Medical Sciences : MJMS, 22(6), 26–31.*

Selye, H. (1973). The Evolution of the Stress Concept: The originator of the concept traces its development from the discovery in 1936 of the alarm reaction to modern therapeutic applications of syntoxic and catatoxic hormones. *American Scientist, 61(6), 692–699.* http://www.jstor.org/stable/27844072

Siang, L. C., Baharuddin, M. R., Abd Rahman, A., Shah, S. A., & Noor, S. B. M. (2016). A malay version of Perceived Stress screening scale (PSS-10): Psychometric evaluation among manufacturing industry workers. *Malaysian Journal of Public Health Medicine*, *16*(3), 99-105.

Soudagar, S., Rambod, M., & Beheshtipour, N. (2015). Factors associated with nurses' self-efficacy in clinical setting in Iran, 2013. *Iranian Journal of Nursing and Midwifery Research*, *20*(2), 226–231.

Yu, F., Raphael, D., Mackay, L., Smith, M., & King, A. (2019). Personal and work-related factors associated with Nurse Resilience: A Systematic Review. *International Journal of Nursing Studies*, *93*, 129–140. https://doi.org/10.1016/j.ijnurstu.2019.02.014

Yun, K., & Yoo, Y.S. (2021). Effects of the anger management program for nurses. *Asian Nursing Research, 15(4), 247–254.* https://doi.org/10.1016/j.anr.2021.07.004

WHO. (2023). Newsroom: stress. Retrieved from https://www.who.int/news-room/questions-and-answers/item/stress.

Wanninayake, S. D., O'Donnell, M., & Williamson, S. (2022). COVID-19 and job demands and resources experienced by nurses in Sri Lanka. *The Economic and Labour Relations Review, 33(1), 100–116.* https://doi.org/10.1177/10353046221077509

Zhan, Y., Ma, S., Jian, X., Cao, Y., & Zhan, X. (2020). The current situation and influencing factors of job stress among frontline nurses assisting in Wuhan in fighting COVID-19. *Frontiers in Public Health, 8, 579866.* https://doi.org/10.3389/fpubh.2020.579866