

DEPRESSION, ANXIETY AND STRESS ON BURNOUT USING DASS21 AND COPENHAGEN BURNOUT INVENTORY QUESTIONNAIRES AMONG SELECTED NURSES OF PHILIPPINE ORTHOPEDIC CENTER

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ABSTRACT

Healthcare workers (HCWs) represent a demographic at high risk of encountering adverse mental health issues on a global scale. Substantial research has consistently shown that HCWs are particularly vulnerable to experiencing significant levels of psychological distress.

This study's primary objective is to investigate the relationship between depression, anxiety, and stress concerning burnout among a selected group of nurses at the Philippine Orthopedic Center. The researcher applied a descriptive correlational design using employed purposive sampling.

The utilization of the DASS-21 and Copenhagen Burnout Inventory questionnaires revealed that nurse respondents displayed normal levels of depression (48.68%) and anxiety (63.16%) with mild levels of stress (42.11%). In terms of burnout, most respondents reported personal burnout (51.32%) and work-related burnout (44.74%). A significant portion of participants showed occasional occurrences of client-related burnout (43.42%). When examining the relationships among different domains, the Cramer's V test indicated a significant association between depression and both work-related and client-related burnout. Additionally, a significant relationship was observed between anxiety and work-related as well as client-related burnout. Furthermore, stress was found to be significantly linked to personal, work-related, and client-related burnout.

The findings from this study have been instrumental in the development of stress management initiatives aimed at alleviating burnout among nurses. It is imperative that stress and burnout management programs are implemented by nurses within the hospital setting to reduce the risk of burnout.

KEYWORDS

Depression, Anxiety, Stress, Burnout, Philippine Orthopedic Center

BACKGROUND/INTRODUCTION

Healthcare workers (HCWs) represent a high-risk group for adverse mental health outcomes worldwide. Extensive research indicates that HCWs frequently grapple with significant psychological distress.¹ Among healthcare professionals, nurses play a pivotal role, and multiple studies have revealed that their patient care responsibilities often demand more time and effort compared to other healthcare roles, rendering them susceptible to depression, elevated stress levels, and anxiety. A study by Acharya et al.² reported that 50.8% of nurses experienced stress, 74% exhibited symptoms of anxiety, and 70.8% showed signs of depression, with 79.1% experiencing at least one of these mental health issues. It is well-established that nurses' work-related stress detrimentally impacts their ability to provide optimal patient care. Furthermore, higher turnover intentions among nurses at one and five years were associated with psychological stress, job burnout, and job satisfaction.³

Nurse burnout is a widespread phenomenon characterized by a reduction in nurses' energy that manifests in emotional exhaustion, lack of motivation, and feelings of frustration and may lead to reductions in work efficacy.⁴ A study conducted by Chou et al.⁵ revealed varying levels of work-related burnout among five distinct medical professions, with nurses (66%) experiencing the highest prevalence, followed

2nd Place - Podium Presentation

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Top 5 Study - Podium Presentation

Best Presenter International Research,
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by physician assistants (61.8%), physicians (38.6%), administrative staff (36.1%), and medical technicians (31.9%). Thus, the attrition rate among nurses is on the rise, largely due to the mental health challenges faced by healthcare employees during their service. These challenges ultimately culminate in physical and emotional manifestations of burnout, especially among nurses who manage critically ill patients or interact with difficult colleagues.²

The current challenge for the healthcare industry is to address work-related factors that contribute to an increased risk of depression, anxiety, and stress, consequently leading to burnout among nurses.³ However, studies exploring the connection between depression, anxiety, stress, and burnout among nurses have been limited in the Philippines.

Given this context, this study was conducted to acknowledge the issue, raise awareness, and determine the relationship of depression, anxiety and stress on burnout among selected nurses of the Philippine Orthopedic Center (POC). The ultimate goal is to develop and implement stress management and staff development programs that could potentially alleviate burnout among nurses.

METHODS

The study employed an analytical correlational quantitative design. This study specifically focuses on determining the relationship of depression, anxiety, and stress and their impact on burnout among selected nurses. Correlational research findings are valuable for determining prevalence and relationships between variables and for making predictions based on existing data and knowledge.⁶

The method for selecting respondents for the study was purposive sampling. This sampling technique is appropriate for this study because inclusion and exclusion criteria were applied to determine the eligibility of responders. The study encompassed the following criteria for inclusion: (A) Nurses assigned to specific wards and units, namely, Spinal ward, Traction Ward, Post Anesthesia Care Unit, Emergency Ward, and Emergency Room; (B) Nurses with a minimum of three years of service; (C) Nurses who willingly consented to participate in the study. Excluded from the study were individuals who met the following criteria: (A) Nurses with less than three years of service; (B) Nurses engaged in clerical or administrative roles; (C) Nurses who were pregnant and on leave during the study period; (D) Nurses who declined to participate in the study.

The research instruments used in the study were adopted standardized questionnaires and were considered both as public domain. The questionnaires were divided into three parts: Part one collected demographic information about the respondents, Part two included the Depression Anxiety Stress Scale 21 (DASS-21) questionnaire, and Part three featured the Copenhagen Burnout Inventory (CBI). The DASS-21 questionnaire comprises 21 items, divided into three self-reported scales that assess depression, anxiety and stress. It exhibits strong reliability, as well as discriminant and convergent validity, when compared to other scales used to measure depression and anxiety.⁷ The Copenhagen Burnout Inventory (CBI), developed by Kristensen et al.⁸, was employed to assess burnout. The questionnaire contains three sub-dimensions: personal burnout (six items), work-related burnout (seven items), and client-related burnout (six items). The items in the CBI questionnaire are rated on a 5-point scale from 0 to 4.⁸ The reliability of the questionnaires was confirmed with high Cronbach's alpha coefficients (0.953 for DASS-21 and 0.942 for CBI).⁹⁻¹⁰

The research was conducted in Philippine Orthopedic Center which employs a total of 308 nurses as of August 2022. The study employed the Cochran Formula with a 0.05 margin of error to ascertain the sample size. This specific margin of error was selected due to the study's minimal risk to the participants. As of August 2022, the estimated sample size determined through this formula amounted to approximately 76 respondents.

Data collection took place from November to December 2022 after the approval of the Research Ethics Committee in November 2022. Data was collected and entered into the SPSS software. The mode served as the statistical method for computing the data gathered for DASS-21 and the Copenhagen Burnout Inventory. Cramer's V test of correlation was employed to ascertain the association between depression, anxiety, and stress with burnout.

RESULTS

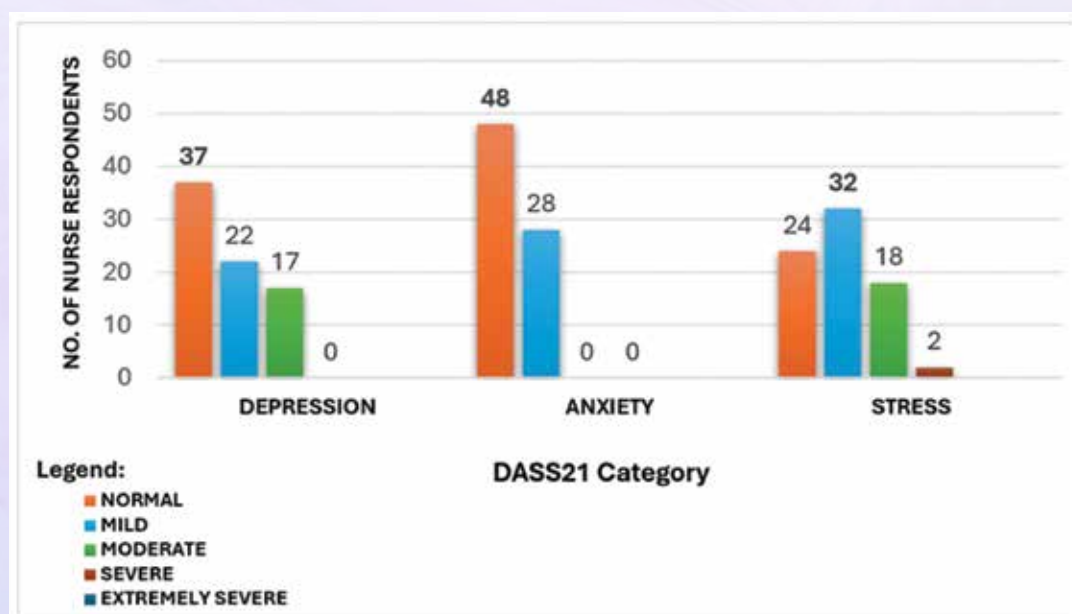
Table 1. Demographic profile of the nurse respondents

NURSE PROFILE		FREQUENCY	PERCENTAGE
SEX	Male	21	27.63 %
	Female	55	72.37 %
AGE	≤ 25 years old	11	14.47 %
	26-30 years old	29	38.16 %
	31-35 years old	27	35.53 %
	>36 years old	9	11.84 %
CIVIL STATUS	Single	41	53.95 %
	Married	35	46.05 %
	Widow	0	0
	Separated	0	0
YEARS IN SERVICE	3 years to 5 years	35	46.05 %
	6 years to 8 years	14	18.42 %
	8 years to 10 years	15	19.74 %
	More than 10 years in service	12	15.79 %
AREA OF ASSIGNMENT	Emergency Room	14	18.42 %
	Emergency Ward	10	13.16 %
	Post Anesthesia Care Unit (PACU)	13	17.16 %
	Spinal Ward	12	15.79 %
	Traction Ward (Male and Female)	27	35.53 %

The demographic analysis of the nurse respondents reveals notable trends. Firstly, a significant majority of respondents are female. In terms of age distribution, the largest group falls within the mid-20s to early 30s category followed by the mid-30s to early 40s. Regarding marital status, the majority are unmarried, constituting over half of the sample, with the remaining being married. Concerning tenure, the highest

proportion of respondents have worked for a duration of 3 to 5 years, comprising nearly half of the sample. Lastly, in terms of department assignment, the traction ward emerges as the most common, with over a third of nurse respondents reporting placement there. These findings offer valuable insights into the demographics of nurses, highlighting significant patterns within the profession.

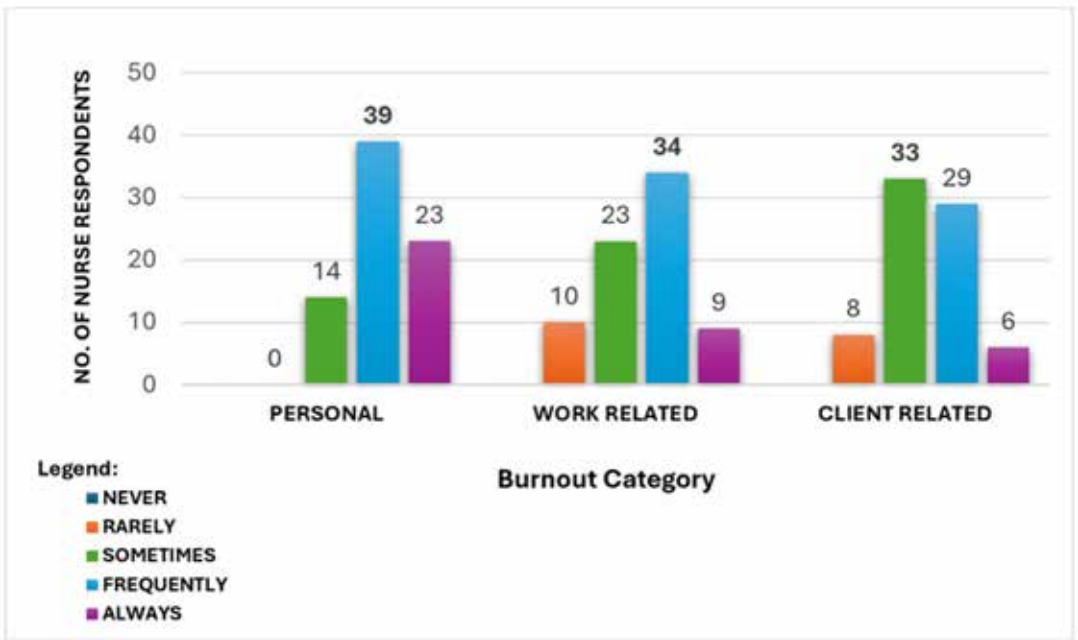
Fig 1. Depression, Anxiety and Stress Scale 21 (DASS21)



The analysis conducted using the Depression, Anxiety, and Stress Scale 21 (DASS21) offers significant insights into depression, anxiety, and stress levels. In terms of depression, approximately half of the respondents exhibit normal levels, while about a third report mild depression and the rest indicate moderate depression. Anxiety levels show a majority with normal levels, while a significant minority reports mild anxiety. Stress levels vary among respondents, with a notable proportion

reporting mild stress, followed by those indicating normal and moderate stress levels. A small percentage indicates severe stress levels. These findings provide a comprehensive overview of the mental health status of the respondents, emphasizing the prevalence of normal levels across depression, anxiety, and stress, along with notable proportions experiencing mild to moderate symptoms in each area.

Fig 2. Copenhagen Burnout Inventory



The evaluation of burnout levels among the respondents reveals significant insights into their professional experiences. In terms of personal burnout, a majority report frequent occurrences, with a significant portion experiencing it always or sometimes. Work-related burnout is prevalent, with many frequently experiencing it and a notable percentage encountering it sometimes or rarely. Similarly, client-related burnout

is notable, with a significant portion reporting occasional occurrences and a considerable percentage experiencing it frequently or always. These findings shed light on the prevalence and varying degrees of burnout across different aspects of the respondents' professional lives, underscoring the importance of addressing burnout to support their well-being and productivity.

Fig 1. Depression, Anxiety and Stress Scale 21 (DASS21)

VARIABLES	PERSONAL	WORK	CLIENT
DEPRESSION			
Correlation	0.731	0.870	0.822
Sig (2 Tail)	0.059	0.036	0.042
N	76	76	76
≤ 0.05	Not Significant	SIGNIFICANT	SIGNIFICANT
ANXIETY			
Correlation	0.792	0.859	0.920
Sig (2 Tail)	0.065	0.046	0.037
N	76	76	76
≤ 0.05	Not Significant	SIGNIFICANT	SIGNIFICANT
STRESS			
Correlation	0.889	0.851	0.824
Sig (2 Tail)	0.039	0.041	0.039
N	76	76	76
≤ 0.05	SIGNIFICANT	SIGNIFICANT	SIGNIFICANT

The study identified significant associations between depression and both work-related and client-related burnout. Likewise, it found significant links between anxiety and burnout in both work-related and client-related contexts. Furthermore, stress was notably correlated with personal, work-related, and client-related burnout. Each variable, depression, anxiety, and stress exhibits domains related to personal, work-related, and client-related burnout.

DISCUSSION

The study revealed significant association between depression on both work-related and client-related burnout. Similarly, it found significant relationships between anxiety and work-related as well as client-related burnout. Stress was also observed to have a significant correlation with personal, work-related, and client-related burnout. Notably, a study by Koutsimani et. al.¹¹ showed that there is no overlap or shared existence between burnout, anxiety, and stress. This suggests that while these experiences are distinct from each other, they are interconnected.

In a comprehensive study involving more than 498 healthcare professionals, Zheng et. al.¹² identified high levels of depression in approximately 63.4% of the respondents. The findings in this study align with this trend, indicating that all respondents are experiencing some level of depression, with 48.68% falling within the normal range, while the combined percentage for mild to moderate depression is 51.32%. These findings are closely related to factors such as workforce distribution, access to psychological support, the ability to rest and recover, and compensation.¹² In this study, it is worth noting that the institution where this study was conducted specializes in orthopedic conditions, but also admits cases of COVID-19 as comorbidities alongside orthopedic diseases. The area of assignment which plays a critical role in defining the patient population they handle, and the associated risk of exposure based on the types of cases they encounter affects the nurse ability to rest and recover. These factors can be correlated with burnout, depending on the nature of their work assignment or their area of hospital placement.

On the other hand, Anxiety is a prevailing concern among healthcare workers in general and nurses in particular, with direct correlations found between anxiety levels and factors such as financial strain, job categories, time constraints, lack of supervisory support, and reduced job autonomy.¹³ The findings in this study are consistent with the result of the study of Pala et. al.¹³ affirming that all participants experience some degree of anxiety, with the majority falling within the normal range at 61.16%, while the remaining portion reports mild levels of anxiety at 38.4%. The duration

of professional experience is intrinsically linked to the level of mastery in job responsibilities, as corroborated by Ozdemir's research.¹⁴ In lieu of this the combined population of individuals with 3 to 5 years of service tenure amounts to 46.05%. This suggests that nearly half of the respondents are expected to demonstrate mastery and expertise in their job-related functions in terms of their years of experience, while the remaining participants are progressing toward efficiency. This is of particular significance to the study, as the variables being investigated depression, anxiety, stress, and burnout; are notably influenced by the duration of professional experience. To have more than five years of experience fosters metacognitive thinking, enabling individuals to perceive life from a more insightful perspective.¹⁴

A study conducted in the Philippines established that the stress experienced by healthcare workers in hospitals is closely linked to factors such as age, gender, marital status, patient load, and length of service.³ It is well-documented that these factors act as stressors for healthcare workers, with workload emerging as the most significant stressor.¹⁵ In this study, all respondents report experiencing some degree of stress, with 31.58% experiencing normal stress levels, while the remaining participants report mild stress at 42.11%, moderate stress at 23.68%, and severe stress at 2%. The participants in this study fall within the 26-30 age group and majority are single individuals which represent a mature population, marked by psychosocial and psychological milestones. Notably, these developmental milestones relate to issues of intimacy and isolation, generativity versus stagnation, and ego integrity versus despair. These pivotal life stages significantly influence how knowledge, perspectives, and behaviors evolve within distinct age groups, characterized by their proficiency in socio-cultural skills, enabling them to effectively navigate their careers and work settings. Research indicates that single individuals may face a higher risk of experiencing reduced emotional well-being compared to their partnered counterparts. The high frequency of single individuals, heightened risk in developing burnout is often attributed to the greater availability of social support among those in relationships.¹⁶

The prevalence of physical and emotional exhaustion, collectively referred to as burnout, is notably high among healthcare workers in hospital settings. In a prior study involving 544 participants, it was found that 44.6% of respondents experienced burnout, with higher incidence rates observed among females and younger professionals aged 21-30 years.¹⁷ In this present study, an overwhelming 81.58% of respondents report experiencing personal burnout 'frequently to always,' while 18.42% indicate they have experienced

personal burnout only 'sometimes'. The level of burnout aligns with the findings of Khasne et. al.¹⁷, emphasizing the direct correlation between personal burnout and working conditions.

A considerable portion of the respondents frequently experiences work-related burnout, at 44.74%, with an additional 11.84% consistently experiencing it. The combined percentage of these two categories, approximately 56.54%, underscores the significant prevalence of work-related burnout. Nurses exhibit the highest incidence of burnout compared to physicians, paramedics, other medical staff, and non-medical staff members. The burnout rate among nurses is as high as 36.5%, and this is directly linked to factors such as workload, workplace bullying, and traumatic work experiences. The presence of stress also significantly elevates the likelihood of experiencing work-related burnout.¹⁸

According to studies^{16,13}, it was discovered that women face a higher risk of developing burnout compared to men, with a burnout rate of 25% for women and 21% for men. In this study, 72.37% of the participants were women, it underscores the increased risk of burnout among women when compared to the male population. In this study, 43.42% of respondents occasionally experience client-related burnout, but the combined percentage of those who frequently or always experience burnout is 46.05%. This indicates that majority of respondents are grappling with client-related burnout on a significant scale, underscoring the imperative to address these issues and mitigate the negative consequences associated with client-related burnout. As evidenced by a study, client-related burnout is closely linked to the perception of the healthcare provider's inability to meet the healthcare needs of their clients, which can result in adverse work-related outcomes. When nurses perceive that their clients are not making progress in terms of healthcare-related indicators, it contributes to their experience of burnout. This, in turn, leads to reduced job satisfaction, diminished job engagement, compromised workplace well-being, and elevated turnover rates.¹²

This study's sampling method and randomization of participants decrease the selection bias of the nurse respondents. It can be inferred that depression and anxiety were significantly correlated with client-related and work-related burnout, while stress displayed significant correlations with personal, work-related, and client-related burnout. These relationships have been consistently demonstrated in previous studies, highlighting the interconnectedness of these variables and reinforcing the findings of the present study, as documented by Kozakiewicz et al.¹⁸, Khasne et al.¹⁷, Dayrit et al.¹⁵, Pala et al.¹³, and Zheng et al.¹².

CONCLUSION

The study successfully identified notable connections between depression and both work-related and client-related burnout. Likewise, a significant relationship was observed between anxiety and work-related as well as client-related burnout. Furthermore, stress was found to have a significant correlation with personal, work-related, and client-related burnout.

Overall, this study's findings emphasize the relationship between mental health and occupational well-being. Depression, anxiety, and stress were identified as notable factors in the development of burnout, with specific attention paid to their influence on work-related and client-related burnout. These insights offer valuable guidance for organizations and individuals seeking to address and mitigate burnout in the workplace, underscoring the importance of addressing mental health concerns as part of a comprehensive strategy for well-being.

REFERENCES

1. Masanotti, Michele, G., Paolucci, S., Abbafati, E., Serratore, C., & Caricato, M. (2020). Sense of coherence in nurses: A systematic review. *International Journal of Environmental Research and Public Health*, 17(6), 1861. <https://doi.org/10.3390/ijerph17061861>
2. Acharya, S. D., Kaushik, A., Ravikiran, S. R., Suprasanna, K., Nayak, M. G., & Baliga, K. (2021). Depression, anxiety, stress, and workplace stressors among nurses in tertiary health care settings. *Indian Journal of Occupational and Environmental Medicine*, 25(1), 27. https://doi.org/10.4103/ijoem.ijoem_123_20
3. Labrague, L. J., los Santos, J. A. A., Falguera, C. C., Nwafor, C. E., Galabay, J. R., Rosales, R. A., & Firmo, C. N. (2020). Predictors of nurses' turnover intention at one- and five-years' time. *International Nursing Review*, 67(2), 191–198. <https://doi.org/10.1111/inr.12581>
4. Mudallal, R. H., Othman, W. M., & Al Hassan, N. F. (2017). Nurses' burnout: The influence of leader empowering behaviors, work conditions, and demographic traits. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 54, 004695801772494. <https://doi.org/10.1177/0046958017724944>
5. Chou, L.-P., Li, C.-Y., & Hu, S. C. (2014). Job stress and Burnout in hospital employees: Comparisons of different medical professions in a regional hospital in Taiwan. *BMJ Open*, 4(2). <https://doi.org/10.1136/bmjopen-2013-004185>
6. Curtis, E. A., Comiskey, C., & Dempsey, O. (2016). Importance and use of Correlational Research. *Nurse Researcher*, 23(6), 20–25. <https://doi.org/10.7748/nr.2016.e1382>
7. Coker, A. O., Coker, O. O., & Sanni, D. (2018). Psychometric Properties of the 21-item depression anxiety stress scale (DASS-21). *African Research Review*, 12(2), 135. <https://doi.org/10.4314/afrr.v12i2.13>
8. Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of Burnout. *Work & Stress*, 19(3), 192–207. <https://doi.org/10.1080/02678370500297720>

9. Laranjeira, C., Querido, A., Sousa, P., & Dixe, M. A. (2023). Assessment and psychometric properties of the 21-item depression anxiety stress scale (DASS-21) among Portuguese higher education students during the COVID-19 pandemic. *European Journal of Investigation in Health, Psychology and Education*, 13(11), 2546–2560. <https://doi.org/10.3390/ejihpe13110177>
10. Piperac, P., Todorovic, J., Terzic-Supic, Z., Maksimovic, A., Karic, S., Pilipovic, F., & Soldatovic, I. (2021). The validity and reliability of the Copenhagen Burnout Inventory for examination of Burnout among preschool teachers in Serbia. *International Journal of Environmental Research and Public Health*, 18(13), 6805. <https://doi.org/10.3390/ijerph18136805>
11. Koutsimani, P., Montgomery, A., & Georganta, K. (2019). The relationship between burnout, depression, and anxiety: A systematic review and meta-analysis. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.00284>
12. Zheng, Y., Tang, P. K., Lin, G., Liu, J., Hu, H., Wu, A. M. S., & Ung, C. O. L. (2023). Burnout among healthcare providers: Its prevalence and association with anxiety and depression during the COVID-19 pandemic in Macao, China. *PLOS ONE*, 18(3), e0283239. <https://doi.org/10.1371/journal.pone.0283239>
13. Pala, A. N., Chuang, J. C., Chien, A., Krauth, D. M., Leitner, S. A., Okoye, N. M., Costello, S. C., Rodriguez, R. M., Sheira, L. A., Solomon, G., & Weiser, S. D. (2022). Depression, anxiety, and burnout among hospital workers during the COVID-19 pandemic: A cross-sectional study. *PLOS ONE*, 17(12), e0276861. <https://doi.org/10.1371/journal.pone.0276861>
14. Ozdemir, G. N. (2019). The Development of Nurses' Individualized Care Perceptions and Practices: Benner's Novice to Expert Model Perspective. *International Journal of Caring Sciences*, 12(2), 1279–1285.
15. Dayrit, A., & Jabonete, F. (2018). *Reported Work-related Stressors among Staff Nurses in Metro Manila*. https://national-u.edu.ph/wp-content/uploads/2018/07/JSTAR3-6_Reported-Work-related-Stressors-among-Staff-Nurses-in-Metro-Manila.pdf
16. Celmece, N., & Menekey, M. (2020). *The Effect of Stress, Anxiety and Burnout Levels of Healthcare Professionals Caring for COVID-19 Patients on Their Quality of Life*. *Frontiers in Psychology*. <https://www.mybib.com/#/projects/vV75y7/citations/new/webpage>
17. Khasne, R. W., Kulkarni, A., Dhakulkar, B. S., & Mahajan, H. C. (2020). Burnout among Healthcare Workers during COVID-19 Pandemic in India: Results of a Questionnaire-based Survey. *Indian Journal of Critical Care Medicine*, 24(8), 664–671. <https://doi.org/10.5005/jp-journals-10071-23518>
18. Kozakiewicz, A., Kozakiewicz, A., Białorudzki, M., Dec-Pietrowska, J., & Mazur, J. (2023). Occupational Burnout in Healthcare Workers, Stress and Other Symptoms of Work Overload during the COVID-19 Pandemic in Poland. *International Journal of Environmental Research and Public Health*, 20(3), 2428. <https://doi.org/10.3390/ijerph20032428>