



WWJMRD 2025; 11(05): 46-51
www.wwjmr.com
International Journal
Peer Reviewed Journal
Refereed Journal
Indexed Journal
Impact Factor SJIF 2017:
5.182 2018: 5.51, (ISI) 2020-
2021: 1.361
E-ISSN: 2454-6615

Dr. Prof. Catherine Mary Abou-Zaid
EdD MSc (HCM)- Training
Development & Research
MKCC, Royal Medical
Services, Kingdom of Bahrain.

Ms. Lulwa Albuainain
BSc (Nursing)- Team Leader,
Cardiac Intensive Care Unit,
MKCC, Royal Medical
Services, Kingdom of Bahrain.

Mr. Yoonus Pathikkal
BSc. MSc (Stats & Computer)-
Statistician, MKCC, Royal
Medical Services, Kingdom of
Bahrain.

Correspondence:
Catherine Mary Abou-Zaid
EdD MSc (HCM)- Training
Development & Research
MKCC, Royal Medical
Services, Kingdom of Bahrain.

Compassion Fatigue Among ICU Nurses and Coping Strategies.

Catherine Mary Abou-Zaid EdD, Ms. Lulwa Albuainain, Mr. Yoonus Pathikkal

Abstract

Background:

Intensive care nursing is one of the most specialized fields requiring admirably competent and high-quality practice. Being constantly exposed to the stressful workload of the intensive care unit (ICU) work environment to maintain the best nursing practice subsequently leads to compassion fatigue syndrome among ICU nurses. Compassion fatigue awareness and concepts among healthcare teams are still undervalued. A lack of understanding of the significant adverse effects of compassion fatigue will negatively affect the quality of work, patient safety, and the nursing staff's mental and physical health. Acquiring compassion fatigue is unavoidable, although adopting healthy coping strategies to reduce and elevate it is addressed in such evidence-based research papers.

Objectives:

This study aimed to determine the relationship between 'Perceived Compassion Fatigue' among ICU nurses and coping strategies as a transformation factor in an ICU environment.

Research Methodology:

This study was conducted at the Mohamed Bin Khalifa Specialist Cardiac Centre in Bahrain. Ethical approval of this study has been obtained from the Royal Medical Services and Mohamed Bin Khalifa Cardiac Centre (MKCC) Ethical approval committee. This qualitative study used a web-based questionnaire targeting all Intensive care unit nurses at MKCC, including all nurses currently working in the critical care unit or cardiac intensive care unit with less than one year of experience and up to 10 years of ICU nursing experience. This online survey used two valid tools: multidimensional fatigue inventory to measure tiredness among ICU staff and how it's seriousness. In addition, 'brief coping orientation to problems experienced inventory', has been used to find out the methods and approaches that are effective in coping mechanisms among nurses.

Conclusion:

The analysis results will be presented to the department head, including principal nursing officers, charge nurses, head of training, the chairman of MKCC and the cardiac clinical psychologist. After discussion, recommendations will be given to the administrator and center director. The training department within MKCC will organize and carry out extra teaching and training.

Keywords: ICU, Compassion fatigue, Stress, Tired, Coping.

Introduction

Intensive care nurses are the frontline in care provision and health maintenance among critically ill patients presenting with life-threatening conditions characterized by high mortality and morbidity rates. Compassion fatigue is progressive and comes together with the outcome of prolonged, continuous, and intense contact with patients, self-utilization, and continuous exposure to multi factors of stress which in turn leads to being in a position of not being comfortable with compassion that can become beyond the nurse's endurance levels (Zhang et al., 2018). Intensive Care Unit (ICU) nurses are constantly exposed to unavoidable stressful situations due to the nature of their work. Being constantly exposed to stress, tension, and extreme workload, increases the rate and risk of developing compassion fatigue syndrome among ICU nurses. Providing highly demanding supportive care to the patient as an ICU nurse requires passion and motivation (Tirviene, Spigriene, and Simatoniene, 2020).

Background

Constantly being a compassionate provider will subsequently lead to compassion fatigue syndrome. This is seen in other areas where the aging population puts strain on critical carers (Dall et al., 2013).

Compassion fatigue is considered a negative consequence of providing care to patients experiencing complex conditions. Loss of passion, physical exhaustion, mental fatigue, stress disorders, and burnout reflect the primary symptoms of compassion fatigue among healthcare providers.

Compassion fatigue awareness and concepts among healthcare teams are still undervalued. In addition, a lack of understanding of the significant adverse effects of compassion fatigue will negatively affect the quality of work, patient safety, and the nursing staff's mental and physical health (Potter, Divanbeigi, and Norris, 2010). Acquiring compassion fatigue is unavoidable, although adopting healthy coping strategies to reduce and elevate it is addressed in such evidence-based research papers.

Study Aim

The rationale behind the implementation and conducting this research study was to explore the find out the relationship between 'perceived compassion fatigue' among ICU nurses and coping strategies as a transformational factor in an ICU environment (Friganovic et al., 2019).

Study Methodology

Study Design

This study used a qualitative design methodology. A web-based questionnaire approach developed based on the most realistic and professional instrument was used to collect the data.

Population

This study was conducted at the Mohamed Bin Khalifa Specialist Cardiac Centre (MKCC) in the Kingdom of Bahrain. This study targeted all staff nurses working in critical care settings in MKCC. Included in the study were nurses currently or were working in the critical care unit (CCU) or cardiac intensive care unit (CICU) with less than one year and up to 10 years or more of ICU nursing experience. All nurses working in the non-critical care area were excluded from participation in the study. This was done through sharing the survey questionnaire by an email which contained the link to the survey with all critical care staff.

Data collection - Study instruments

In this online survey, two valid tools were used: the 'multidimensional fatigue inventory' and the 'brief coping orientation to problems experienced inventory'. These tools were used to develop the questions that were answered giving the researchers the data for analysis.

Multidimensional fatigue Inventory:

Multidimensional fatigue Inventory is a measurement Inventory scale designed to measure five types of perceived fatigue among individuals working under constant levels of stress and fatigue. These are general fatigue, mental, physical, and motivational fatigue, or activity reduction due to serious fatigue. This inventory has been raised to examine fatigue for various groups of community not just health care providers. This Inventory has been verified with proper validity and reliability and sensitive results and outcomes. The scoring system of this tool reflected the most serious acute level of fatigue by the "strongly agree" option and the least level of fatigue was represented by the 'strongly disagree'

option. Between these two options, there were other options which included 'Agree or neither agree nor disagree or Disagree'. (To reference the Tool).

Multidimensional fatigue Inventory was used in this study to assess and measure the fatigue severity among ICU nurses.

Brief coping orientation to problems experienced inventory

This inventory has been used in healthcare settings among patients undergoing a stressful health condition, to measure how the patients are emotionally coping with the illness stressors.

This tool measures the individual way of coping mechanisms which are displayed in such different personal ways. For instance: using Humour, emotional support, religion, or positive reframing to cope and ventilate their stress. This tool delivers the coping mechanisms into 3 subscales:

1. Problem-focused coping.
2. Emotional Focused coping.
3. Avoidant.

This study scoring system is represented on a scale of 4 - 1 reflected in Always, usually, sometimes, rarely, or never. The constantly low scoring for all subscales indicates 3 things:

1. Life with no stressors.
2. Personal disclosure for the way of coping and dealing with stressors.
3. The participant or responder cannot find some way to cope with their stressors.

approval Ethical

Ethical approval for this study has been obtained from the Royal Medical Services and Mohamed Bin Khalifa Cardiac Centre (MKCC) ethical approval committees. Research study information details were shared and explained to all participants before they took part in the study. Informed consent was obtained from all participants before starting the official online survey questionnaire, by attaching the Informed consent in the first page. Participant confidentiality was maintained throughout the research process.

Data analysis

Demographic Data: Staff who participated in the research study included 12 Bahraini and 19 non-Bahraini. Specifically non-Bahrainis can be categorised as e.g. 10 Indian 4 Malaysian and 5 Philippino. The diversity (See Table 1) of the background in nursing critical care patients was significant when using the fatigue syndrome tool.

Table 1: Demographic Details.

Demographic data details	Total number	Percentage
Bahraini	12	38.7%
Non-Bahraini	19	61.29%

Participated staff Age group.

The participated age group (See Table 2) varies from 9 staff (29.03%) being from 20-30 years old, 18 staff (58.06%) being 30-40 years old, and 4 staff (12.9% being 40-60 years old. This age range was significant in the experience of the staff ratio. The majority of staff are between 30-40 years old therefore, the sharing of gained knowledge and experience was expected to be significant at this range. It was also noted

by Jiang et al., (2024) that individual born after 1995 are referred to as Generation Z so this contributes to the way in which they work. They are described as innovative, pragmatic, goal-orientated, thoughtful, good with technology, good with feedback, and like to complete tasks in a timely manner (Jiang et al., 2024). This may contribute to the way they deal with stressful situation, and this makes them different to the older staff.

Table 2. Participants Age Group.

Demographic data details	Total number	Percentage
20 – 30 Years old	9	29.03%
30 – 40 Years old	18	58.06%
40 – 60 Years old	4	12.9%

Participated Staff Nursing Degree.

The educational levels (See Table 3) of the staff were also varied with Masters (MSc) in nursing being the highest level gained, bachelor's degree in nursing being the second highest level with diploma in nursing being the lowest level within the critical care areas (Joo and Jang, 2025). Educational status is an important factor in ICU nursing as the dependence on evidence-based information can affect patient outcome. The complicated nature of having to nurse patients in an ICU setting makes the task more challenging, therefore specialization is a must in this area (Perez-Talavera, 2025).

The gap between theoretical knowledge and intensive care unit practice is increased by the demands of specialist care and also the medical advancement of equipment that needs a trained mind, hence a younger generation of staff nurses as referred to by Jiang et al., (2024) as generation Z, being familiar with technological and theoretical concepts.

Table 3. Educational Level of Nursing among Staff.

Demographic data details	Total number	Percentage
Diploma	3	9.68%
Bachelor's degree in nursing	26	83.87%
MSc in nursing	2	6.45%
PHD	0	0%
Education	0	0%

Table 4. Participant Job Title.

Demographic data details	Total number	Percentage
Staff Nurse	16	51.6%
Team Leader	14	45.16%
Supervisor	1	3.23%
Manager	0	0%

Table 5. Participant Years in Intensive care and Critical Care Unit.

Demographic data details	Total number	Percentage
Less than one Year	1	3.23%
One Year – 5 Years	13	41.9%
5 year – 10 Years	5	16.13%
More than 10 Years	12	38.71%

Table 6. Participant unit of Work.

Demographic data details	Total number	Percentage
CCU	12	38.71%
CICU	19	61.29

Multidimensional Fatigue inventory

Acute fatigue syndrome among critical care unit nurses who participated was refracted by converting the significant values as frequency values into relative frequencies, giving the full percentage of staff out of the 30 Participants. However, 2 questions were excluded due to inaccuracy in answering them.

Demographic Data

31 critical ICU nurses participated in this research study. The completion rate of the survey is 94%. One of the participants disagreed with the questions of the Informed consent, this responder was excluded. The total number of considered participants was 30 critical ICU nurses. These nurses included 12 Bahraini ICU nurses with a percentage of 38.7%. 19 non-Bahraini nurses with a rate of 61.29%. Most of the ICU staff who participated were in the 30 to 40-year-old age group, this contributed to 58.06% of the total participants. Most of the were certified with a bachelor's degree in nursing. Most of the participating nurses were staff nurses with a rate of 51.6% and the remaining participants being team leaders and supervisors. No managers have participated in this study. The participating critical care nurses worked in the ICU for one to 5 years with a rate of 41.9%. In this study, the number of critical care nurses working in the post-cardiothoracic surgeries ICU was higher than the number of nurses from the coronary ICU. Currently, 25 of the participating ICU staff are represented at a rate of 80.65%.

Multidimensional Fatigue inventory

Acute fatigue syndrome among critical care unit nurses who participated was refracted by converting the significant values as frequency values into relative frequencies, giving the full percentage of staff out of the 30 Participants. However, 2 questions were excluded due to inaccuracy in answering them. Mean, Madinat, and standard deviation are shown in Table (2). Standard deviation: The standard deviation (n-1) indicates the data's deviation from an average mean. A lower standard deviation concludes that the value is very close to the average (Expanded value), while a high standard deviation indicates that the value has spread out in a wide range. In this research study, the standard deviation indicates that the cumulated probability of a normal distribution shows a standard deviation of n-1. The mean standard deviation for this study was 0.78. This indicated the variance in acute fatigue syndrome. The nursing staff working in intensive care units and critical care units were found to have a low to moderate level of burnout See Figure 1. For nurses working in ICU burnout is a serious workplace risk. Nurse burnout is associated with reduced safety and quality of care, decreased patient satisfaction, and reduced organizational commitment and productivity of nurses (Bruyneel et al., 2025). Long shifts, high patient acuity, and staffing shortages all contribute to nurses' stress levels and decline in wellbeing, which has an impact on patient care results (Kaur, 2025) The findings are not significant due to the low response of the participants that were asked to complete the survey questionnaire. The understanding of fatigue and burnout may not have been fully understood by some staff. This is in comparison from each sample to the total score for burnout in each category (See Figure 2).

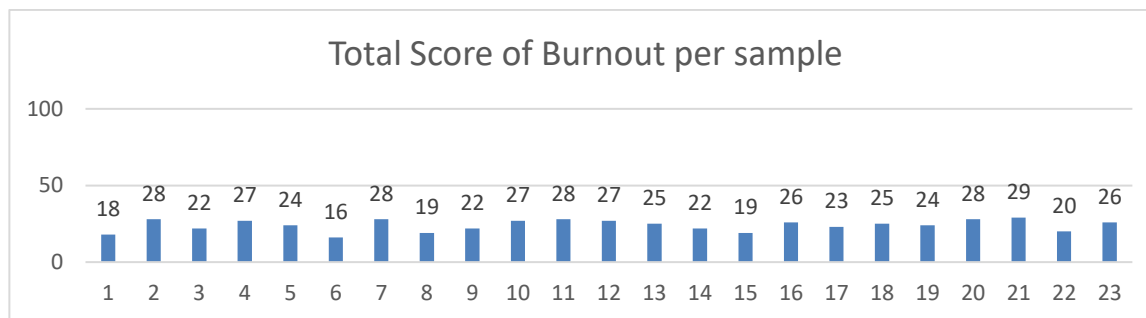


Fig. 1. Total Score of Burnout.

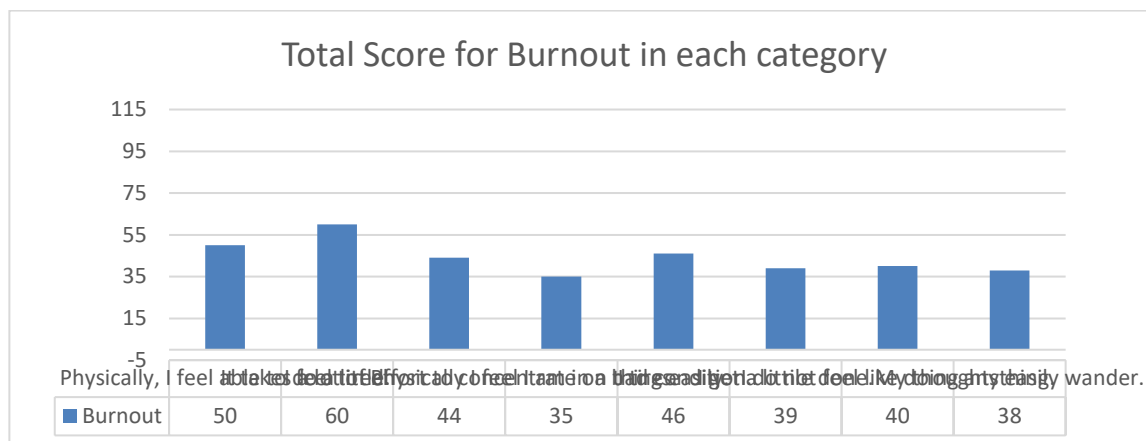


Fig. 2. Total Score for Burnout in Each Category.

COPE Inventory

Throughout the COPE inventory, all participated staff coping strategies (See Table 7) in response to the workload and stressors have been examined. Coping strategies according to the COPE inventory have been subdivided into three main categories, which are problem, problem-focused coping strategies, Emotional-focused coping strategies, and avoidant coping strategies. Problem-focused coping strategies are the first type or subcategory of the COPE tool. Within this subcategory, most of the staff were using positive reforming techniques to overcome life stressors. These reforms included assessing whether a multifaceted education program that included simulation scenarios was effective in reducing job strain as a reconditioning reform to reduce stress among staff (Khamali et al., 2018). An understanding of the 'coping strategy index' may help in categorizing the concepts of how to deal with issues towards psychological aspects.

Throughout the COPE inventory, all participating staff coping strategies in response to the workload and stressors have been examined. Coping strategies according to the COPE inventory have been subdivided into three main categories, which are Problem -focused coping strategies, Emotional-focused coping strategies, and Avoidant coping strategies. Problem-focused coping strategies are the first type or subcategory of the COPE tool.

Data Analysis/Correlation

The data collected was evaluated for discrepancies and violations with general statistical analysis.

Spearman's rank correlation was used to which also checked the normality of both variable using Shapiro Wilk test and based on the result I have chosen the rank correlation.

Spearman's correlation coefficient indicated that the strength and direction of the relationship between the

variables will always range between +1 then -1 then upwards the results showed that stress is positively correlated with burnout (0.586) indicating higher stress levels are associated with higher burnout. Coping is negatively correlated with burnout (0.285) suggesting that coping mechanisms may help to reduce burnout (See Table 7).

Table 7. Correlation on Coping.

	Total B	STS	PF
Total Burnout	1		
STS	0.586396438	1	
PF	-0.285102116	0.026264	1

Stress had a direct effect on burnout showing that stress significantly increased burnout ($p=0.003$) showing that it had a high impact on staff burnout within critical care areas (See Table 8).

Table 8. Burnout and Stress.

Burnout and stress		
		p
beata	1.54	0.003
Stress significantly increase the burnout		
Stress has highy impact on burnout		

Mediation Analysis

Using ANNOVA Burnout and coping with stress have a weak negative effect on burnout and stress still strongly affects burnout even with coping strategies as in the model, R square being 43.4% of the variation in burnout is explained by stress and coping together showing that the slight increase suggests that coping adds some explanatory

power, but not much. Mediation (see Table 9) partially exists because the stress affects coping, and this has some impact on burnout. However, the effect of coping is not strongly significant, therefore, stress still directly affects burnout. Final interpretations show that stress significantly increased

burnout among staff and coping has some influence but does not fully mediate the effect of stress on burnout. Moderation analysis does not support that coping significantly changes the relationship between stress and burnout.

Table 9. Mediation Analysis.

Regression Statistics								
Multiple R	0.658957836							
R Square	0.434225429							
Adjusted R Square	0.377647972							
Standard Error	2.937146958							
Observations	23							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	2	132.419877	66.20993831	7.674884	0.003360735			
Residual	20	172.536645	8.626832256					
Total	22	304.956522						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	22.75062406	4.94873458	4.597260911	0.000174	12.42774461	33.07350351	12.42774461	33.07350351
STS	1.556894119	0.44077199	3.532198389	0.002093	0.637459856	2.476328382	0.637459856	2.476328382
PF	-0.330402964	0.18486359	-1.78727987	0.089058	-0.716021646	0.055215717	-0.716021646	0.055215717

Moderation Analysis

In Moderation Analysis

The moderation analysis (See Table 10) showed slight improvement over the mediation process model. R square showed that coping moderately affects the effect of stress.

Stress co-efficient was not significant (0.49), coping co-efficient was not significant (0.12) and interaction term was not significant (0.24). The interaction effect was significant, meaning that coping does not significantly moderate the stress-burnout relationship.

Regression Statistics								
Multiple R	0.68869748							
R Square	0.47430421							
Adjusted R Square	0.39129961							
Standard Error	2.90475435							
Observations	23							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	3	144.642163	48.21405	5.714192	0.005811541			
Residual	19	160.3143587	8.437598					
Total	22	304.9565217						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	42.8360386	17.39122036	2.463084	0.023495	6.435796039	79.23628	6.435796039	79.23628112
STS	-2.2262941	3.173419983	-0.70154	0.491468	-8.868338473	4.41575	-8.868338473	4.415750244
PF	-1.2120069	0.754969484	-1.60537	0.124905	-2.792176233	0.368162	-2.792176233	0.368162348
STS*PF	0.1657165	0.137688903	1.203557	0.243542	-0.122469684	0.453903	-0.122469684	0.453902688

Table 10. Moderation Analysis.

Conclusion

Overall, compassion fatigue was seen to be associated with moderate inverse correlation with burnout, although the results were geared toward a negative relation between satisfaction and compassion fatigue. Correlation may be described as the degree of association between two variables being that of compassion fatigue and coping strategies. The Correlation coefficient $r = -0.343$. There was a moderate, negative statistically significant relationship between being able to cope and feeling stressed at work.

Limitation:

Some limitations in this study included lack of research knowledge and the attitudes towards evidenced based best

practice procedures, therefore, upgrade of knowledge regarding research benefits would help to improve best practice. These improvements include, the number of participants enrolled in this study was less, whereas more participants would have given a better more rounded result, but adequate enough to accomplish data saturation across both units, which included the CICU and the CCU. Moreover, there was a lack of understanding of 'The Compassion Fatigue Syndrome', which is reflected in some participants' survey questionnaire responses.

The lack of knowledge regarding how research improves evidence-based practice is still low. Lack of educational knowledge regarding staff well-ness and staff empathy from

leadership categories can still be felt by some of the participants in the study, therefore adherence to staff wellness protocols could be a focus for change. The workforce and employees' eight dimensions of wellness are significantly out of sync with what is going on and since the turn of the 20th century, there has been a greater push for workplace wellness as a means of boosting productivity (Youngberg, 2025). The ability of the health care system to satisfy the demands of all parties involved—patients, healthcare professionals, healthcare organizations, and society at large—is acknowledged to be significantly impacted by the well-being of healthcare professionals (Wieneke, et al., 2025).

Recommendation

Throughout this research results, such recommendations could be applied to improve the healthcare provider's compassion fatigue awareness and understanding. First, to introduce compassion fatigue study days for the health care providers by the training department. Moreover, Organize a training course on the importance of compassion fatigue management for all unit managers. In addition, cooperate with the clinical psychologist to look after the staff's mental wellness and provide needed awareness (Zheng et al., 2025). Furthermore, to suggest mandatory updates on the staff's mental and emotional wellness yearly. The clinical psychologist within the centre could be used as a resource as part of staff wellness.

Encouragement from management for charge nurses and team leaders along with supervisors to attend study days and/or short lectures that will bring up knowledge-based evidence-based practice towards coping strategies and to understand the resources available that may help fatigue and burnout among staff. References

References

1. Alharbi, H., and Alshehry, A. (2019). "Perceived stress and coping strategies among ICU nurses in government tertiary hospitals in Saudi Arabia: a cross-sectional study". *Annals of Saudi Medicine*. Available from: <https://pubmed.ncbi.nlm.nih.gov/30712051/> [Accessed 2023 Nov 20].
2. Bruyneel, A., Dello, S., Dauvergne, J.E., Kohnen, D. and Sermeus, W., (2025) 'Prevalence and risk factors for burnout, missed nursing care, and intention-to-leave the job among intensive care unit and general ward nurses: A cross-sectional study across six European countries in the COVID-19 era'. *Intensive and Critical Care Nursing*, 86, p.103885.
3. Dall, T.M., Gallo, P.D., Chakrabarti, R., West, T., Semilla, A.P. and Storm, M.V., (2013) 'An aging population and growing disease burden will require a large and specialized health care workforce by 2025'. *Health affairs*, 32(11), pp.2013-2020. Dall et al., (2025).
4. El Khamali, R, Mouaci, A, Valera, S, Cano-Chervel, M., Pinglis, C., Sanz, C, Allal, A., Attard, V., Malardier J., Delfino M., D'Anna F., Rostini P., Aguilard S., Berthias K., Cresta B., Iride F., Reynaud V., Suard J., Syja ,W., Vankiersbilck, C, Chevalier N., Inthavong K., Forel, J., M., Baumstarck, K., Papazian, L.; SISTRESSREA Study Group. (2018) 'Effects of a Multimodal Program Including Simulation on Job Strain Among Nurses Working in Intensive Care Units: A Randomized Clinical Trial'. *JAMA*. Nov 20;320(19):1988-1997. doi: 10.1001/jama.2018.14284.
5. García FE, Barraza-Peña CG, Włodarczyk A, Alvear-Carrasco M, Reyes-Reyes A., (2018). 'Psychometric properties of the Brief-COPE for the evaluation of coping strategies in the Chilean population', *Psicologia: Reflexão e Crítica*. Volume 1 (issue 22), pp. 3-3. Doi: /doi.org/10.1186/s41155-018-0102-3.
6. Joo, Y., Han, E. and Jang, Y. (2025) 'Educational programs to improve nursing competency of patient-and family-centered care in intensive care units: A systematic review'. *Nurse Education Today*, p.106699.
7. Kaur, K. (2025) "Stress and burnout among ICU nurses" (2025). Spring Honors Capstone Projects 6. https://mavmatrix.uta.edu/honors_spring2025/6
8. Pérez-Talavera, C., (2025) 'Nursing specialization in intensive care: A scoping review'. *Enfermería Intensiva* (English ed.), 36(2), p.500529.
9. Potter, P., Divanbeigi, J., and Norris, L. (2010). "Compassion Fatigue and Burnout: Prevalence Among Oncology Nurses". *Journal Club and CJonPlus Podcast*. [Serial on the Internet]. Available from: <https://pubmed.ncbi.nlm.nih.gov/20880809/> [Accessed 2023 Nov 20].
10. Smets EM, Garssen B, Bonke B, De Haes JC.(1995). 'The Multidimensional Fatigue Inventory (MFI) psychometric qualities of an instrument to assess fatigue', *Journal of Psychosomatic Research*. Volume 39 (issue 3), pp. 315-325. doi: [https://doi.org/10.1016/0022-3999\(94\)00125-O](https://doi.org/10.1016/0022-3999(94)00125-O)
11. Tirviene, G., Spirgiene, L. , and Simatoniene, V. (2020). "Fatigue among Intensive Care Unit Nurses". *Nursing Education, Research & Practice*. [Serial on the Internet]. Available from: <https://nerp.lsmuni.lt/fatigue-among-intensive-care-unit-nurses/> [Accessed 2023 Nov 20].
12. Wieneke, K.C., Berkland, B.E., Kruse, G.C., Priestley, M.R., Teal, D.M. and West, C.P., 2025, March. Charting a new path forward in addressing employee well-being in health care. In *Mayo Clinic Proceedings* (Vol. 100, No. 3, pp. 501-513). Elsevier.
13. Youngberg, T., 2025. Holistic Wellness in the Workplace (Doctoral dissertation, Liberty University).
14. Zheng, X., Song, J., Shi, X., Kan, C. and Chen, C., (2025) 'The effect of authoritarian leadership on young nurses' burnout: the mediating role of organizational climate and psychological capital'. *BMC Health Services Research*, 25(1), pp.1-11.