

A Review of Job Satisfaction and Burnout among Intensive Care Unit Nurses

Khlood Musfer Alotaibi¹, Afaf Musfer Alotaibi¹, Ibtihal Faisal Almutairi¹, Wafa Mohammad Almflih Alqahtani², Walaa Mohammed Aide Al-Moflah³, Rnda Faisal Almutairi⁴, Yasmeen Abd Rab Alrasool Altawal⁵, Shog Abdullah Aljarbooa⁶, Sukinah Muneer Alsaihati⁵, Ahlam Kadeah Al Bishi⁷, Sarah Ghazi Awadallah Alosaimi⁸, Khowlah Nasser Aliyani⁹, Layla Ali Hakami Hakami¹⁰, Aisha Jahwee Zaila Ibrahim¹¹, Fatimah Abdullah Essa Jaferi¹²

1. Nurse Specialist, Maternity and Children Hospital Alkharj, Ministry of Health, Kingdom Of Saudi Arabia
2. Nurse, King Khalid Hospital Alkharj, Ministry of Health, Kingdom Of Saudi Arabia.
3. Nursing, Abha Maternity and Children's Hospital, Ministry of Health, Kingdom Of Saudi Arabia.
4. Nurse, Al-Hayatham Health Center, Ministry of Health, Kingdom Of Saudi Arabia.
5. Nursing, Maternity and Children's Hospital in Dammam, Ministry of Health, Kingdom Of Saudi Arabia.
6. Nursing, Erada Complex for Mental Health in Riyadh, Ministry of Health, Kingdom Of Saudi Arabia.
7. Nursing, Will and Mental Health Complex in Dammam, Ministry of Health, Kingdom Of Saudi Arabia.
8. Nursing, King Khalid & Prince Sultan Center in Alkharj Hospital, Ministry of Health, Kingdom of Saudi Arabia.
9. Nurse Specialist, Mufaduh, Ministry of Health, Kingdom of Saudi Arabia.
10. Nursing, General Gizan Hospital, Ministry of Health, kingdom of Saudi Arabia.
11. Nursing Assist, General Gizan Hospital, Ministry of Health, kingdom of Saudi Arabia.
12. Nursing Specialist, Prince Mohammed Bin Nasser Hospital, , Ministry of Health, kingdom of Saudi Arabia.

Email: Khlood.al@gmail.com

ABSTRACT

Burnout syndrome and job dissatisfaction are prevalent issues among intensive care unit (ICU) nurses, with studies reporting burnout rates ranging from 32.8% to 79%. This review explores the relationship between burnout and job satisfaction in ICU nurses, as well as the risk factors contributing to burnout. Burnout is characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, and is associated with chronic workplace stress. ICU nurses are particularly vulnerable to burnout due to the demanding nature of their work, which involves constant exposure to challenging professional circumstances, such as confrontations, excessive workloads, and the emotional strain of caring for critically ill patients. Job satisfaction, which is inversely related to burnout, is influenced by factors such as autonomy, positive relationships with colleagues, and perceived workplace management. Personal risk factors for burnout include being female, married, and

engaging in substance use behaviors. However, inadequate working conditions, such as poor work environments, night shifts, and excessive patient loads, are identified as the primary drivers of burnout. The COVID-19 pandemic has further exacerbated burnout levels among ICU nurses, with rates reaching up to 79% in those caring for COVID-19 patients. Effective prevention strategies and interventions are needed to address burnout and enhance job satisfaction among ICU nurses, ultimately improving the quality of patient care and reducing professional attrition.

KEYWORDS: job satisfaction, burnout, nurses.

1. Introduction

The World Health Organization defines burnout as “a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed” (Downey et al., 2023). In the context of the workplace, burnout syndrome is characterized by three dimensions: emotional exhaustion (EE), which refers to the depletion of physical and emotional energy; depersonalization (D), described as the development of cynical attitudes toward others; and a perceived lack of personal accomplishment (PA), which involves self-perceptions of ineffectiveness and incompetence in performing one’s job (Maslach & Jackson, 1981). Burnout predominantly affects professionals who engage extensively with the public, such as healthcare workers, police officers, teachers, and social workers. However, healthcare workers face heightened vulnerability to burnout and depression due to the nature of their roles, which often involve close and continuous interactions with others, as is common in health services (García-Arroyo & Osca Segovia, 2018). Recent data indicate that the prevalence of burnout among professionals varies widely, ranging from 2.5% to 87.9% (Wright et al., 2022).

Mental health issues among healthcare workers have emerged as a significant threat to healthcare systems. Burnout syndrome is the most prevalent mental health issue affecting both nurses and physicians. In this study, burnout is defined as a prolonged reaction to chronic emotional and interpersonal stressors, characterized by emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment (Maslach et al., 2011). This syndrome typically arises among individuals working in roles that demand frequent and intense interactions with others (). Factors contributing to the onset of burnout may include moral distress, the emotional and spiritual demands of caregiving, the perception of an excessive workload, and stressors linked to the physical and psychological environment (Florin & Basham, 2000). The rising number of patients with chronic conditions requiring ongoing care, combined with hospital staff’s continual exposure to physical and emotional strain, has led to a systemic shift toward implementing preventive programs (Florin & Basham, 2000). While burnout can affect any worker, compassion fatigue is particularly associated with professionals in caregiving roles (Duarte & Pinto-Gouveia, 2017). Healthcare institutions are inherently demanding and high-risk environments (Henderson, 2015).

Symptoms of burnout often emerge when nurses struggle to adapt to or manage high levels of stress (Stordeur et al., 2001). According to existing literature, coping mechanisms and job satisfaction are closely associated with the occurrence of

Khloud Musfer Alotaibi, Afaf Musfer Alotaibi, Ibtihal Faisal Almutairi, Wafa Mohammad Almflih Alqahtani, Walaa Mohammed Aide Al-Moflah, Rnda Faisal Almutairi, Yasmeen Abd Rab Alrasool Altawal, Shog Abdullah Aljarbooa, Sukinah Muneer Alsaihati, Ahlam Kadeah Al Bishi, Sarah Ghazi Awadallah Alosaimi, Khowlah Nasser Aliyani, Layla Ali Hakami Hakami, Aisha Jahwee Zaila Ibrahim, Fatimah Abdullah Essa Jaferi

burnout symptoms in the workplace (Myhren et al., 2013). Differences in job satisfaction have been noted across various types of intensive care units, often correlating with patient diagnoses and nursing management practices (Myhren et al., 2013). Frequently, the tasks and responsibilities of healthcare workers are misaligned with the resources or capabilities of the workplace, and training for new tasks is often inadequate (Selmanovic et al., 2012).

Personality traits also play a role in the development of burnout. It is important to recognize that the high prevalence of burnout in certain professions may also reflect the predispositions of individuals drawn to these roles (Čebašek-Travnik, 2002). Nurses, in particular, are at an elevated risk of burnout (Myhren et al., 2013; Selmanovic et al., 2012). However, despite this increased risk, there is still no systematic approach to prevention programs, data collection, or training addressing either the prevalence of burnout or the coping strategies necessary to mitigate its impact (Myhren et al., 2013; Selmanovic et al., 2012; Franczak, 2012; Baker et al., 2004; Schaufeli et al., 2003).

Among healthcare professionals, doctors and nurses experience the highest levels of burnout (Cañadas-De la Fuente et al., 2015; Patel et al., 2018). In the nursing profession, burnout arises not only from excessive workloads but also from an imbalance between the demands placed upon nurses and the resources available to meet those demands. These workplace challenges are largely associated with frequent and intimate interactions with patients and their families, as well as the need for ongoing emotional management (Ślusarz et al., 2022). Nevertheless, the nursing profession encompasses a wide range of specialties, with significant variations across different fields and work settings (Dos Santos et al., 2020; Misiak et al., 2020). Nurses working in specialized areas such as intensive care units (ICUs), emergency departments, and oncology face particularly high levels of burnout due to the emotional demands of their work (Gómez-Urquiza et al., 2017). The Maslach Burnout Inventory (MBI) is a commonly used tool for measuring burnout levels. This instrument comprises 22 items in the form of statements addressing the feelings and attitudes of individuals exposed to burnout risk. It evaluates three core aspects of the condition: EE, D, and PA. Responses are scored and classified into low, moderate, or high levels of burnout based on established reference values (Schaufeli et al., 2009).

Job satisfaction is described as the presence of positive and pleasant feelings and attitudes that employees associate with their work environment (Zhu, 2012). Numerous factors contribute to job dissatisfaction, including night shifts, excessive workloads, poor work environments, conflicts between work and family responsibilities, stress, burnout, and compassion fatigue (Lu et al., 2019). Financial constraints in the healthcare system have, in many cases, led to significantly reduced patient hospital stays (Ślusarz et al., 2022). This development has increased nurses' workloads, negatively affecting their health and, consequently, the quality of care they deliver. Prolonged working hours and irregular schedules, such as rotating shifts, further elevate the risk of burnout (Vargas-Benítez et al., 2023). Overwork negatively impacts nurses' health and is a significant factor contributing to the frequency and severity of burnout, which in turn affects both their performance and

the quality of care they provide (Misiak et al., 2020).

Consequently, nurses are recognized as being at professional risk for work-related stress and burnout. Implementing organizational strategies to prevent burnout and enhance job satisfaction among nurses could lead to improved patient care quality (Al Sabei et al., 2020). Preventing burnout requires fostering positive attitudes, and job satisfaction plays a critical role in this process. Job satisfaction develops through the interaction of workers' subjective characteristics, the specific nature of their tasks, and the broader work environment. Notably, the relationship between burnout and job satisfaction is often negative and statistically significant (Universidad Nacional Santiago Antúnez de Mayolo. Ancash, Perú et al., 2019).

Compared to other healthcare environments, ICU nurses face significantly high stress levels due to their constant exposure to challenging professional circumstances, including confrontations, excessive workloads, emotional strain, and the psychological toll of caring for terminally ill patients (Unjai et al., 2022). These stressors were further intensified during the COVID-19 pandemic, which brought increased workloads, a heightened risk of workplace-acquired infections, and insufficient resources (da Silva & Barbosa, 2021).

Burnout, therefore, constitutes a critical issue in the lives of healthcare workers, necessitating in-depth research to understand its underlying causes and ramifications. Evidence from prior studies indicates that burnout significantly affects nurses' physical and mental well-being. It also compromises the quality of care they deliver and raises the likelihood of clinical errors, which can sometimes lead to professional attrition through resignation or voluntary departure from the field (Ślusarz et al., 2022).

Job satisfaction plays a vital role in motivating workers and fostering their commitment to their roles (Vargas-Benítez et al., 2023). The working conditions in ICUs often induce stress and detract from the quality of professional life. Given the heavy workloads ICU nurses bear, it is unsurprising that they frequently experience dissatisfaction and burnout. This issue existed even before the pandemic and warrants thorough investigation (Dehghan et al., 2023; Ntantana et al., 2017). Although the COVID-19 pandemic generally led to a rise in workloads and stress levels among healthcare workers (Da Silva & Barbosa, 2021), comparing these findings with pre-pandemic studies is crucial to understanding the impact of pandemics or health emergencies on healthcare professionals.

Burnout syndrome, therefore, is an occupational health challenge that affects many workers and can influence job satisfaction. However, with proactive prevention strategies, nursing professionals may enhance their work performance and improve the quality of patient care. Thus, it is essential to examine the current state of this issue and establish a global perspective based on recent years' findings.

Burnout and Job Satisfaction

Professionals who enjoy greater autonomy at work, maintain positive relationships with colleagues, and perceive their workplace as well-managed tend to experience lower levels of burnout. In a study by Ntantana et al. (2017) involving 149 doctors and 320 ICU nurses, job satisfaction levels were reported as 80.8% for doctors and

Khloud Musfer Alotaibi, Afaf Musfer Alotaibi, Ibtihal Faisal Almutairi, Wafa Mohammad Almflih Alqahtani, Walaa Mohammad Aide Al-Moflah, Rnda Faisal Almutairi, Yasmeen Abd Rab Alrasool Altawal, Shog Abdullah Aljarbooa, Sukinah Muneer Alsaihati, Ahlam Kadeah Al Bishi, Sarah Ghazi Awadallah Alosaimi, Khowlah Nasser Aliyani, Layla Ali Hakami Hakami, Aisha Jahwee Zaila Ibrahim, Fatimah Abdullah Essa Jaferi

63.4% for nurses. Burnout was observed in 32.8% of the participants, with nurses showing significantly higher levels of burnout compared to doctors ($p < 0.001$) (Ntantana et al., 2017). Similarly, Friganović and Selič (2021), in a study of 620 ICU nurses, identified an inverse relationship between burnout and job satisfaction ($OR = 0.01$, 95% $CI = 0.00-0.02$, $p < 0.001$). These findings suggest that ICU nurses face greater burnout and lower job satisfaction than doctors working in the same setting (Friganović & Selič, 2021).

Burnout among nurses is a global issue, resulting from the intense demands and stressors they face daily. However, its prevalence and severity are not uniform across countries. In this research, no significant differences were found between the countries studied in overall burnout levels, except for the dimension of depersonalization (D), which was notably higher in Spain than in Portugal ($p < 0.001$) (Das Neves Borges et al., 2021).

Before the COVID-19 pandemic, 54.6% of ICU nurses exhibited emotional exhaustion (EE), 71.9% showed signs of depersonalization (D), and 35.2% reported low personal accomplishment (PA). During the pandemic, these values shifted to 52% for EE, 83.1% for D, and 29.1% for low PA (Bruyneel et al., 2021; Guirardello, 2017). Health workers in ICUs treating COVID-19 patients, especially those responsible for implementing extracorporeal membrane oxygenation, were particularly vulnerable to low PA (Yarad et al., 2023).

Conversely, Srinivas et al. (2022) highlighted positive outcomes for job satisfaction during the COVID-19 pandemic, as nurses reported increased opportunities for learning and personal growth (Srinivas et al., 2022).

According to Friganović and Selič (2021), there is generally no significant association between gender and burnout coping mechanisms or job satisfaction. Nonetheless, their research confirmed an inverse association between burnout and job satisfaction ($OR = 0.01$, 95% $CI = 0.00-0.02$, $p < 0.001$), indicating that higher burnout levels correspond to lower job satisfaction, while higher job satisfaction correlates with reduced burnout. Additionally, a positive association was observed between passive coping mechanisms and burnout ($OR = 9.93$, 95% $CI = 4.01-24.61$, $p < 0.001$) (Friganović & Selič, 2021).

Prevalence and Risk Factors for Burnout Among ICU Personnel

The majority of studies indicated a high prevalence of burnout among ICU workers, reflected in various percentages across the sample populations: 33% (Swamy et al., 2020), 32.8% with a higher prevalence in nurses compared to doctors ($p < 0.001$) (Ntantana et al., 2017), 42% (Das Neves Borges et al., 2021), 61% (Kelly et al., 2021), 63% (Kim & Yeom, 2018), 42% (Salimi et al., 2020), 53.6% (Aragão et al., 2021), 61% (Mohr et al., 2021), 74.5% (Fernandes et al., 2017), 44% (Yarad et al., 2023), 64.5% (Omar et al., 2022), and up to 79% (Srinivas et al., 2022).

Overall, research shows that burnout prevalence among ICU personnel can reach up to 80%, with various factors contributing to this outcome. Regarding personal risk factors, being female, married rather than single, and certain substance use behaviors, such as a 100% alcohol consumption prevalence ($PR 1.84$) and a 65.6%

tobacco prevalence (PR 1.45), have been identified as significant contributors (Aragão et al., 2021; Vincent et al., 2019).

In addition to personal factors, several authors highlight working conditions as having the most substantial impact on burnout levels. For example, Swamy et al. (2020) found that the work environment was the most significant predictor of burnout (OR 2.20, 95% CI 1.50–3.22) (Swamy et al., 2020). Other contributing variables included the hospital's quality (OR 1.44, 95% CI 1.05–1.99), its location (OR 1.93, 95% CI 1.09–3.42), and the nurse's years of experience (OR 2.11, 95% CI 1.44) (Swamy et al., 2020). Yarad et al. (2023) further observed that 52% of those experiencing burnout lacked permanent employment (Yarad et al., 2023). Other occupational characteristics influencing burnout include working night shifts (65%, PR 1.39), holding a specialist qualification in intensive care (58.9%, PR 2.36), managing an excessive number of patients per shift, and perceiving their salary as insufficient (Aragão et al., 2021).

Personal characteristics also play a role, such as being a female ICU nurse, as reported by Vincent et al. (2019). Yarad et al. (2022) noted that 91% of respondents were female, with an average age of 47 years and ICU experience exceeding a decade. Nevertheless, despite the influence of personal factors, several authors, including Swamy et al. (2020), emphasize that an inadequate work environment is the primary driver of burnout.

The COVID-19 pandemic has further exacerbated burnout levels. Omar et al. (2022) observed that working in ICUs during the pandemic, particularly when applying extracorporeal membrane oxygenation techniques, was an additional risk factor, with 64.5% of these professionals' experiencing burnout compared to 63.7% otherwise. The heightened levels of burnout were attributed to fears of infection and the distress of witnessing colleagues affected by COVID-19.

Similarly, Srinivas et al. (2022) reported a 79% burnout rate among ICU nurses caring for COVID-19 patients. The primary reasons included the discomfort associated with using personal protective equipment and the emotional strain of providing direct care to critically ill patients.

2. Discussion

Burnout is recognized as a significant occupational hazard for nurses, who comprise up to 30% of a hospital's workforce (Shah et al., 2021). It is a common practice to assess burnout levels among nurses, particularly those working in ICUs. Numerous studies have focused on this area and have been subsequently reviewed in meta-analyses (Papazian et al., 2023; Ramírez-Elvira et al., 2021). Among ICU nurses, specific burnout rates have been recorded: 31% for emotional exhaustion (EE), 18% for depersonalization (D), and 46% for low personal accomplishment (PA) (Vasconcelos et al., 2018).

Risk factors for burnout include being young, female, single, and without children. Another critical factor is the lack of experience in ICU settings, where tasks often require significant technical expertise. Inexperienced nurses are more prone to

Khloud Musfer Alotaibi, Afaf Musfer Alotaibi, Ibtihal Faisal Almutairi, Wafa Mohammad Almflih Alqahtani, Walaa Mohammed Aide Al-Moflah, Rnda Faisal Almutairi, Yasmeen Abd Rab Alrasool Altawal, Shog Abdullah Aljarbooa, Sukinah Muneer Alsaihati, Ahlam Kadeah Al Bishi, Sarah Ghazi Awadallah Alosaimi, Khowlah Nasser Aliyani, Layla Ali Hakami Hakami, Aisha Jahwee Zaila Ibrahim, Fatimah Abdullah Essa Jaferi
developing compassion fatigue and burnout in such demanding environments (Ünlügedik & Akbaş, 2023; Xie et al., 2021).

Burnout is also more prevalent among nurses working night shifts and those exceeding 30 working hours per week. Long hours and insufficient sleep impair cognitive performance, contributing to burnout (Durán-Gómez et al., 2021). Taking regular breaks during shifts, especially outdoors, has been shown to alleviate burnout, reducing EE and D more effectively than breaks taken indoors (Vermeir et al., 2018). Furthermore, ICU night shift nurses face a higher risk of psychiatric issues, including depression, anxiety, and circadian rhythm disruptions. Depressive symptoms and burnout are also linked to inadequate wages (Kashtanov et al., 2022), prompting some nurses to seek additional work or even consider leaving the profession (Zeng et al., 2021).

The number of patients assigned per nurse is another critical factor. ICU nurses often face heavy workloads due to the complexity of patient care and staff shortages. A higher patient-to-nurse ratio compromises both care quality and patient safety (Lasater et al., 2021). The perception of being overworked correlates with burnout and the intention to leave the nursing profession. These challenges increase the pace of work and reduce the availability of rest periods (Kashtanov et al., 2022).

Substance use, such as alcohol and tobacco, has also been identified as a predictor of burnout. Studies indicate that nurses who consume alcohol are more likely to experience burnout, marked by increased EE and D. This pattern arises as healthcare workers turn to substances to cope with stress caused by adverse working conditions (Lwiza & Lugazia, 2023) or to avoid work altogether (Fernandes et al., 2018). Conversely, burnout can foster maladaptive coping mechanisms, further triggering alcohol and tobacco use (Ramírez-Elvira et al., 2021).

The quality of communication with supervisors also influences job satisfaction. Most studies indicate that ICU nurses are generally satisfied with their immediate supervisors but less so with hospital management. Many nurses feel that organizational goals and accomplishments are not aligned with their expectations. High turnover among new ICU staff is another frequent issue, disrupting team cohesion, which could be mitigated through effective communication with management (Bry & Wigert, 2022). Notably, 80% of nurses reported an inability to participate in policy-making decisions, while 72% felt that management did not adequately address their concerns (Zeng et al., 2021).

The COVID-19 pandemic further exacerbated burnout and job dissatisfaction among ICU nurses. Effective teamwork in ICUs relies on adequate staffing, which was severely lacking during the pandemic, causing significant stress and dissatisfaction (Bragadóttir et al., 2023). These stressors profoundly affected nurses' mental health and heightened EE levels (Thomas et al., 2022). Even after the pandemic subsided, ICU nurses continued to report psychological distress, particularly those who had faced intense stress during the crisis (Hovland et al., 2023).

3. Conclusion

Burnout is a significant occupational hazard among ICU nurses, posing severe challenges to their mental health, job satisfaction, and the overall quality of care provided to patients. The demanding nature of ICU work, characterized by excessive workloads, emotional strain, and complex technical responsibilities, exacerbates the risk of burnout. Personal factors such as gender, age, marital status, and substance use, as well as professional factors like inadequate staffing, night shifts, and insufficient wages, are all strongly associated with the syndrome.

The COVID-19 pandemic amplified the stressors faced by ICU nurses, leading to increased rates of burnout and job dissatisfaction. The pandemic highlighted the critical need for systemic interventions, including improved workplace environments, adequate staffing, and effective communication between nurses and management. Preventive strategies, such as outdoor breaks, sufficient rest periods, and comprehensive training, can mitigate burnout and enhance job satisfaction.

Despite its prevalence, burnout among ICU nurses remains inadequately addressed at a systemic level, with limited data collection and inconsistent prevention efforts. Future research should focus on the development of standardized approaches to prevent burnout and promote job satisfaction, ensuring the sustainability of the healthcare workforce and the delivery of high-quality patient care.

References

- Al Sabei, S. D., Labrague, L. J., Miner Ross, A., Karkada, S., Albashayreh, A., Al Masroori, F., & Al Hashmi, N. (2020). Nursing Work Environment, Turnover Intention, Job Burnout, and Quality of Care: The Moderating Role of Job Satisfaction. *Journal of Nursing Scholarship*, 52(1), 95–104. Scopus. <https://doi.org/10.1111/jnu.12528>
- Aragão, N. S. C. de, Barbosa, G. B., Santos, C. L. C., Nascimento, D. dos S. S., Bôas, L. B. S. V., Martins Júnior, D. F., & Nascimento Sobrinho, C. L. (2021). Burnout Syndrome and Associated Factors in Intensive Care Unit Nurses. *Revista Brasileira de Enfermagem*, 74, e20190535. <https://doi.org/10.1590/0034-7167-2019-0535>
- Bragadóttir, H., Kalisch, B. J., Flygenring, B. G., & Tryggvadóttir, G. B. (2023). The Relationship of Nursing Teamwork and Job Satisfaction in Hospitals. *SAGE Open Nursing*, 9, 23779608231175027. <https://doi.org/10.1177/23779608231175027>
- Bruyneel, A., Smith, P., Tack, J., & Pirson, M. (2021). Prevalence of burnout risk and factors associated with burnout risk among ICU nurses during the COVID-19 outbreak in French speaking Belgium. *Intensive and Critical Care Nursing*, 65. Scopus. <https://doi.org/10.1016/j.iccn.2021.103059>
- Bry, A., & Wigert, H. (2022). Organizational climate and interpersonal interactions among registered nurses in a neonatal intensive care unit: A qualitative study. *Journal of Nursing Management*, 30(6), 2031–2038. <https://doi.org/10.1111/jonm.13650>
- Cañadas-De la Fuente, G. A., Vargas, C., San Luis, C., García, I., Cañadas, G. R., & De la Fuente, E. I. (2015). Risk factors and prevalence of burnout syndrome in the nursing profession. *International Journal of Nursing Studies*, 52(1), 240–249. Scopus. <https://doi.org/10.1016/j.ijnurstu.2014.07.001>
- da Silva, F. C. T., & Barbosa, C. P. (2021). The impact of the COVID-19 pandemic in an intensive care unit (ICU): Psychiatric symptoms in healthcare professionals. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 110. Scopus. <https://doi.org/10.1016/j.pnpbp.2021.110299>
- Das Neves Borges, E. M., Queirós, C. M. L., Da Silva Neves De Abreu, M., Mosteiro-Diaz,

- Khloud Musfer Alotaibi, Afaf Musfer Alotaibi, Ibtihal Faisal Almutairi, Wafa Mohammad Almflih Alqahtani, Walaa Mohammed Aide Al-Moflah, Rnda Faisal Almutairi, Yasmeen Abd Rab Alrasool Altawal, Shog Abdullah Aljarbooa, Sukinah Muneer Alsaihati, Ahlam Kadeah Al Bishi, Sarah Ghazi Awadallah Alosaimi, Khowlah Nasser Aliyani, Layla Ali Hakami Hakami, Aisha Jahwee Zaila Ibrahim, Fatimah Abdullah Essa Jaferi
- M. P., Baldonado-Mosteiro, M., Baptista, P. C. P., Felli, V. E. A., Dos Santos Almeida, M. C., & Silva, S. M. (2021). Burnout among nurses: A multicentric comparative study. *Revista Latino-Americana de Enfermagem*, 29. Scopus. <https://doi.org/10.1590/1518-8345.4320.3432>
- Dehghan, M., Mokhtarabadi, S., Rashidi, E., Rahiminejad, E., & Asadi, N. (2023). Correlation between professional quality of life and alarm fatigue symptoms among intensive care unit nurses. *Health Science Reports*, 6(10). Scopus. <https://doi.org/10.1002/hsr2.1583>
- Dos Santos, T. A., Santos, H. S., Sampaio, E. E. S., de Melo, C. M. M., Souza, E. A., & Pires, C. G. D. S. (2020). Intensity of nursing work in public hospitals. *Revista Latino-Americana de Enfermagem*, 28, 1–8. Scopus. <https://doi.org/10.1590/1518-8345.3221.3267>
- Downey, E., Fokeladeh, H. S., & Catton, H. (2023). What the COVID-19 pandemic has exposed: The findings of five global health workforce professions. *World Health Organization*. <https://iris.who.int/handle/10665/366632>
- Durán-Gómez, N., Guerrero-Martín, J., Pérez-Civantos, D., López-Jurado, C. F., Montanero-Fernández, J., & Cáceres, M. C. (2021). Night Shift and Decreased Brain Activity of ICU Nurses: A Near-Infrared Spectroscopy Study. *International Journal of Environmental Research and Public Health*, 18(22), 11930. <https://doi.org/10.3390/ijerph182211930>
- Fernandes, L. S., Nitsche, M. J. T., & Godoy, I. D. (2017). Síndrome de burnout em profissionais de enfermagem de uma unidade de terapia intensiva Burnout syndrome in nursing professionals from an intensive care unit. *Revista de Pesquisa Cuidado é Fundamental Online*, 9(2), 551–557. <https://doi.org/10.9789/2175-5361.2017.v9i2.551-557>
- Fernandes, L. S., Nitsche, M. J. T., & Godoy, I. D. (2018). Associação entre Síndrome de burnout, uso prejudicial de álcool e tabagismo na Enfermagem nas UTIs de um hospital universitário. *Ciência & Saúde Coletiva*, 23(1), 203–214. <https://doi.org/10.1590/1413-81232018231.05612015>
- Frganović, A., & Selič, P. (2021). Where to look for a remedy? Burnout syndrome and its associations with coping and job satisfaction in critical care nurses—a cross-sectional study. *International Journal of Environmental Research and Public Health*, 18(8). Scopus. <https://doi.org/10.3390/ijerph18084390>
- García-Arroyo, J., & Osca Segovia, A. (2018). Effect sizes and cut-off points: A meta-analytical review of burnout in latin American countries. *Psychology, Health and Medicine*, 23(9), 1079–1093. Scopus. <https://doi.org/10.1080/13548506.2018.1469780>
- Gómez-Urquiza, J. L., De la Fuente-Solana, E. I., Albendín-García, L., Vargas-Pecino, C., Ortega-Campos, E. M., & Cañadas-De la Fuente, G. A. (2017). Prevalence of burnout syndrome in emergency nurses: A meta-analysis. *Critical Care Nurse*, 37(5), e1–e9. Scopus. <https://doi.org/10.4037/ccn2017508>
- Guirardello, E. B. (2017). Impact of critical care environment on burnout, perceived quality of care and safety attitude of the nursing team. *Revista Latino-Americana de Enfermagem*, 25. Scopus. <https://doi.org/10.1590/1518-8345.1472.2884>
- Hovland, I. S., Skogstad, L., Stafseth, S., Hem, E., Diep, L. M., Ræder, J., Ekeberg, O., & Lie, I. (2023). Prevalence of psychological distress in nurses, physicians and leaders working in intensive care units during the COVID-19 pandemic: A national one-year follow-up study. *BMJ Open*, 13(12). Scopus. <https://doi.org/10.1136/bmjopen-2023-075190>
- Kashtanov, A., Molotok, E., Yavorovskiy, A., Boyarkov, A., Vasil'ev, Y., Alsaegh, A., Dydykin, S., Kytko, O., Meylanova, R., Enina, Y., Troitskiy, V., Kapitonova, M., Vaits, S., Vaits, T., Saleev, R., Saleeva, G., & Saleev, N. (2022). A Comparative Cross-Sectional Study Assessing the Psycho-Emotional State of Intensive Care Units' Physicians and Nurses of COVID-19 Hospitals of a Russian Metropolis. *International*

- Journal of Environmental Research and Public Health, 19(3), 1828. <https://doi.org/10.3390/ijerph19031828>
- Kelly, L. A., Johnson, K. L., Bay, R. C., & Todd, M. (2021). Key elements of the critical care work environment associated with burnout and compassion satisfaction. *American Journal of Critical Care*, 30(2), 113–120. Scopus. <https://doi.org/10.4037/ajcc2021775>
- Kim, H. S., & Yeom, H.-A. (2018). The association between spiritual well-being and burnout in intensive care unit nurses: A descriptive study. *Intensive and Critical Care Nursing*, 46, 92–97. Scopus. <https://doi.org/10.1016/j.iccn.2017.11.005>
- Lasater, K. B., Aiken, L. H., Sloane, D. M., French, R., Martin, B., Reneau, K., Alexander, M., & McHugh, M. D. (2021). Chronic hospital nurse understaffing meets COVID-19: An observational study. *BMJ Quality & Safety*, 30(8), 639–647. <https://doi.org/10.1136/bmjqs-2020-011512>
- Lu, H., Zhao, Y., & While, A. (2019). Job satisfaction among hospital nurses: A literature review. *International Journal of Nursing Studies*, 94, 21–31. <https://doi.org/10.1016/j.ijnurstu.2019.01.011>
- Lwiza, A. F., & Lugazia, E. R. (2023). Burnout and associated factors among healthcare workers in acute care settings at a tertiary teaching hospital in Tanzania: An analytical cross-sectional study. *Health Science Reports*, 6(5). Scopus. <https://doi.org/10.1002/hsr2.1256>
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior*, 2(2), 99–113. Scopus. <https://doi.org/10.1002/job.4030020205>
- Misiak, B., Sierżantowicz, R., Krajewska-Kulak, E., Lewko, K., Chylińska, J., & Lewko, J. (2020). Psychosocial work-related hazards and their relationship to the quality of life of nurses—A cross-sectional study. *International Journal of Environmental Research and Public Health*, 17(3). Scopus. <https://doi.org/10.3390/ijerph17030755>
- Mohr, D. C., Swamy, L., Wong, E. S., Mealer, M., Moss, M., & Rinne, S. T. (2021). Critical care nurse burnout in veterans health administration: Relation to clinician and patient outcomes. *American Journal of Critical Care*, 30(6), 435–442. Scopus. <https://doi.org/10.4037/ajcc2021187>
- Ntantana, A., Matamis, D., Savvidou, S., Giannakou, M., Gouva, M., Nakos, G., & Koulouras, V. (2017). Burnout and job satisfaction of intensive care personnel and the relationship with personality and religious traits: An observational, multicenter, cross-sectional study. *Intensive and Critical Care Nursing*, 41, 11–17. Scopus. <https://doi.org/10.1016/j.iccn.2017.02.009>
- Omar, A. S., Labib, A., Hanoura, S. E., Rahal, A., Kaddoura, R., Chughtai, T. S., Karic, E., Shaikh, M. S., Hamad, W. J., ElHassan, M., AlHashemi, A., Khatib, M. Y., & AlKhulaifi, A. (2022). Impact of Extracorporeal Membrane Oxygenation Service on Burnout Development in Eight Intensive Care Units. A National Cross-Sectional Study. *Journal of Cardiothoracic and Vascular Anesthesia*, 36(8), 2891–2899. Scopus. <https://doi.org/10.1053/j.jvca.2022.02.018>
- Papazian, L., Hraiech, S., Loundou, A., Herridge, M. S., & Boyer, L. (2023). High-level burnout in physicians and nurses working in adult ICUs: A systematic review and meta-analysis. *Intensive Care Medicine*, 49(4), 387–400. <https://doi.org/10.1007/s00134-023-07025-8>
- Patel, R. S., Bachu, R., Adikey, A., Malik, M., & Shah, M. (2018). Factors related to physician burnout and its consequences: A review. *Behavioral Sciences*, 8(11). Scopus. <https://doi.org/10.3390/bs8110098>
- Ramírez-Elvira, S., Romero-Béjar, J. L., Suleiman-Martos, N., Gómez-Urquiza, J. L., Monsalve-Reyes, C., Cañadas-De La Fuente, G. A., & Albendín-García, L. (2021). Prevalence, Risk Factors and Burnout Levels in Intensive Care Unit Nurses: A Systematic Review and Meta-Analysis. *International Journal of Environmental Research and Public Health*, 18(21), 11432. <https://doi.org/10.3390/ijerph182111432>
- Salimi, S., Pakpour, V., Rahmani, A., Wilson, M., & Feizollahzadeh, H. (2020). Compassion

- Khloud Musfer Alotaibi, Afaf Musfer Alotaibi, Ibtihal Faisal Almutairi, Wafa Mohammad Almflihi Alqahtani, Walaa Mohammed Aide Al-Moflah, Rnda Faisal Almutairi, Yasmeen Abd Rab Alrasool Altawal, Shog Abdullah Aljarbooa, Sukinah Muneer Alsaihati, Ahlam Kadeah Al Bishi, Sarah Ghazi Awadallah Alosaimi, Khowlah Nasser Aliyani, Layla Ali Hakami Hakami, Aisha Jahwee Zaila Ibrahim, Fatimah Abdullah Essa Jaferi
- Satisfaction, Burnout, and Secondary Traumatic Stress Among Critical Care Nurses in Iran. *Journal of Transcultural Nursing*, 31(1), 59–66. Scopus. <https://doi.org/10.1177/1043659619838876>
- Schaufeli, W. B., Leiter, M. P., & Maslach, C. (2009). Burnout: 35 years of research and practice. *Career Development International*, 14(3), 204–220. Scopus. <https://doi.org/10.1108/13620430910966406>
- Shah, M. K., Gandrakota, N., Cimiotti, J. P., Ghose, N., Moore, M., & Ali, M. K. (2021). Prevalence of and Factors Associated with Nurse Burnout in the US. *JAMA Network Open*, 4(2). Scopus. <https://doi.org/10.1001/jamanetworkopen.2020.36469>
- Ślusarz, R., Filipińska, K., Jabłońska, R., Królikowska, A., Szewczyk, M. T., Wiśniewski, A., & Biercewicz, M. (2022). Analysis of job burnout, satisfaction and work-related depression among neurological and neurosurgical nurses in Poland: A cross-sectional and multicentre study. *Nursing Open*, 9(2), 1228–1240. Scopus. <https://doi.org/10.1002/nop2.1164>
- Srinivas, G. C., Whitham, A., Rouse, R., Hamlyn, V., & Williams, M. (2022). Occupational burnout following the first wave of coronavirus disease at a Welsh district general hospital. *Journal of the Intensive Care Society*, 23(3), 369–371. <https://doi.org/10.1177/17511437211010039>
- Swamy, L., Mohr, D., Blok, A., Anderson, E., Charns, M., Wiener, R. S., & Rinne, S. (2020). Impact of workplace climate on burnout among critical care nurses in the veterans health administration. *American Journal of Critical Care*, 29(5), 380–389. Scopus. <https://doi.org/10.4037/ajcc2020831>
- Thomas, A. O., Bakas, T., Miller, E., Johnson, K., & Tubbs-Cooley, H. L. (2022). Burnout and Turnover among NICU Nurses. *MCN: The American Journal of Maternal/Child Nursing*, 47(1), 33–39. <https://doi.org/10.1097/NMC.0000000000000780>
- Universidad Nacional Santiago Antúnez de Mayolo. Ancash, Perú, Yslado Méndez, R. M., Norabuena Figueroa, R. P., Universidad Nacional Santiago Antúnez de Mayolo. Ancash, Perú, Loli Poma, T. P., Universidad Nacional Santiago Antúnez de Mayolo. Ancash, Perú, Zarzosa Marquez, E., Universidad Nacional Santiago Antúnez de Mayolo. Ancash, Perú, Padilla Castro, L., Universidad Autónoma del Estado de Morelos. Morelos, México, Pinto Flores, I., Universidad Nacional del Santa. Ancash, Perú, Rojas Gamboa, A., & Hospital Regional Eleazar Guzmán Barrón. Ancash, Perú. (2019). Síndrome de burnout y la satisfacción laboral en profesionales de la salud. *Horizonte Médico (Lima)*, 19(4), 41–49. <https://doi.org/10.24265/horizmed.2019.v19n4.06>
- Unjai, S., Forster, E. M., Mitchell, A. E., & Creedy, D. K. (2022). Compassion satisfaction, resilience and passion for work among nurses and physicians working in intensive care units: A mixed method systematic review. *Intensive and Critical Care Nursing*, 71. Scopus. <https://doi.org/10.1016/j.iccn.2022.103248>
- Ünlügedik, M., & Akbaş, E. (2023). The effect of spiritual well-being on compassion fatigue among intensive care nurses: A descriptive study. *Intensive and Critical Care Nursing*, 77, 103432. <https://doi.org/10.1016/j.iccn.2023.103432>
- Vargas-Benítez, M. Á., Izquierdo-Espín, F. J., Castro-Martínez, N., Gómez-Urquiza, J. L., Albendín-García, L., Velando-Soriano, A., & Cañadas-De la Fuente, G. A. (2023). Burnout syndrome and work engagement in nursing staff: A systematic review and meta-analysis. *Frontiers in Medicine*, 10. Scopus. <https://doi.org/10.3389/fmed.2023.1125133>
- Vasconcelos, E. M. D., Martino, M. F. D., & França, S. P. D. S. (2018). Burnout and depressive symptoms in intensive care nurses: Relationship analysis. *Revista Brasileira de Enfermagem*, 71(1), 135–141. <https://doi.org/10.1590/0034-7167-2016-0019>
- Vermeir, P., Blot, S., Degroote, S., Vandijck, D., Mariman, A., Vanacker, T., Peleman, R., Verhaeghe, R., & Vogelaers, D. (2018). Communication satisfaction and job satisfaction among critical care nurses and their impact on burnout and intention to leave: A questionnaire study. *Intensive and Critical Care Nursing*, 48, 21–27.

- <https://doi.org/10.1016/j.iccn.2018.07.001>
- Vincent, L., Brindley, P. G., Highfield, J., Innes, R., Greig, P., & Suntharalingam, G. (2019). Burnout Syndrome in UK Intensive Care Unit staff: Data from all three Burnout Syndrome domains and across professional groups, genders and ages. *Journal of the Intensive Care Society*, 20(4), 363–369. <https://doi.org/10.1177/1751143719860391>
- Wright, T., Mughal, F., Babatunde, O. O., Dikomititis, L., Mallen, C. D., & Helliwell, T. (2022). Burnout among primary health-care professionals in low-and middle-income countries: Systematic review and meta-analysis. *Bulletin of the World Health Organization*, 100(6), 385-401A. Scopus. <https://doi.org/10.2471/BLT.22.288300>
- Xie, W., Chen, L., Feng, F., Okoli, C. T. C., Tang, P., Zeng, L., Jin, M., Zhang, Y., & Wang, J. (2021). The prevalence of compassion satisfaction and compassion fatigue among nurses: A systematic review and meta-analysis. *International Journal of Nursing Studies*, 120, 103973. <https://doi.org/10.1016/j.ijnurstu.2021.103973>
- Yarad, E., Bates, S., Butler, M., Byrne, K., Eastwood, G., Grattan, S., Miller, J., Morrison, L., Murray, L., Palermo, A., Sherring, C., Soar, N., Tian, D. H., Towns, M., & Hammond, N. E. (2023). Job satisfaction and symptoms of depression, anxiety, stress, and burnout: A survey of Australian and New Zealand intensive care research coordinators. *Australian Critical Care*, 36(1), 35–43. <https://doi.org/10.1016/j.aucc.2022.08.009>
- Zeng, L.-N., Lok, K.-I., An, F.-R., Lu, L., Jackson, T., Ungvari, G. S., Chen, L., & Xiang, Y.-T. (2021). The Prevalence of Burnout and its Associations with Demographic Correlates and Quality of Life among Psychiatric Nurses in China. *Psychiatric Quarterly*, 92(2), 645–653. <https://doi.org/10.1007/s11126-020-09806-6>
- Zhu, Y. (2012). A Review of Job Satisfaction. *Asian Social Science*, 9(1), Article 1. <https://doi.org/10.5539/ass.v9n1p293>