

Mapping Work-Related Stress and Job Satisfaction Among Critical Care Nurses – A Scoping Review

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HIGHLIGHTS

- Work-related stress is linked to lower job satisfaction in critical care nurses.
- Heavy workloads and emotional demands contribute to stress and burnout.
- Supervisory support and recognition are linked to greater job satisfaction.
- Nurse involvement in workplace decisions is linked to greater job satisfaction.
- Stress management training can reduce stress among critical care nurses.

ABSTRACT

Critical care nurses operate in high-pressure, high demand environments where work-related stress is common. Work stress is a recognized factor which negatively affects job satisfaction. This scoping review maps the existing quantitative evidence on the relationship between work-related stress and job satisfaction among critical care nurses, using the Population-Concept-Context (PCC) framework: critical care nurses (Population); work-related stress and job satisfaction (Concept); intensive care, critical care, and emergency care units (Context). Method: A scoping review was conducted using the British Nursing Database, EMBASE, CINAHL, Cochrane, and PubMed to identify primary research articles published in English between January 2015 and December 2024. As a deliberate scope boundary, eligible studies were restricted to quantitative primary research; eleven such studies were selected and charted. Results: The charted studies indicate that work-related stress is consistently negatively associated with nurses' physical and mental well-being. Severe levels of stress were consistently associated with higher levels of burnout and lower job satisfaction across the included studies. Workplace environment, workload, leadership styles, and organisational policies were the factors most frequently examined in relation to job satisfaction. Mapping these studies also highlighted evidence gaps, including limited quantitative, qualitative and grey literature, predominantly cross-sectional designs, and uneven geographic coverage. The review's findings point to the potential value of professional development programs to help critical care nurses manage stress; commonly suggested organisational levers include stress management training, supportive team environments, flexible scheduling, clear communication, safety oriented, well-resourced work environments, and nurse engagement in decision-making. Addressing these factors is relevant to enhancing the well-being and performance of critical care nurses and, in turn, patient care outcomes.

KEYWORDS

Critical Care Nursing
Occupational Stress
Job Satisfaction
Burnout
Professional
Workload
Organisational Culture
Staff Retention

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INTRODUCTION

Job satisfaction, as defined by Mousazadeh et al. (2018), refers to an individual's positive feelings and attitudes toward their job. This feeling of satisfaction is created by an individual's psychological, physiological and environmental factors. For a nurse, job satisfaction can be achieved from the nature of the job itself, values of the individual towards the job they do, the relationships with their colleagues, including doctors, nursing managers, and with therapists. Job satisfaction also comes from feeling valued, the recognition received for the work done, salaries matching the workload and intensity, and potential promotion. Job satisfaction also comes from education and professional development as well as work experience (Kocak et al., 2020). In a study among critical care nurses in Saudi Arabia, transformational leadership style of their work supervisors increased nurses' job satisfaction compared to other types of leadership styles (Alshahrani & Baig, 2016). Job satisfaction is often understood with its related term ability to work.

Several studies emphasise the relationship between job satisfaction, workplace conditions, and nursing care quality. For instance, Koy et al. (2015) link job satisfaction to reduced burnout, absenteeism, and turnover. Workplace stressors, such as shift work, working at night, exposure to severe illnesses, and managing distressed patients and families, contribute to dissatisfaction (Gu, Tan & Zhao, 2019; Bardhan et al., 2019). Additionally, studies highlight the undervaluation of nurses across institutions, adding complexity to job satisfaction, which is influenced by multiple factors, including recognition, workload, and leadership support (Salehi et al., 2020; Zaki, 2016).

Job satisfaction is essential for healthcare professionals, particularly those in high-stress environments, such as critical care nursing where patients need 24-hour monitoring, and survival may impinge on life-saving equipment and medication (Mousazadeh et al., 2018). A study in South Korea involving 200 nurses found that work stress had mixed effects on motivation but negatively impacted well-being and job satisfaction (Lee, Hwang & Lee, 2019). Occupational stress is defined as harmful physical and emotional responses experienced by an individual when their daily activities exceed their coping capabilities, available resources, and own needs (Ageel & Shbeer, 2022). Nurses in critical care settings experience significant occupational stress while managing life-threatening and rapidly changing patient conditions, witnessing dying and death, and dealing with patients' and their families' trauma (Vahedian-Azimi et al., 2019). Such stress can lead to emotional exhaustion, compassion fatigue, cynicism, and inefficacy known as burnout (Leiter & Maslach, 2016). According to Godifay et al. (2018), prolonged stress contributes to absenteeism, work disabilities, and

increased disease risks, such as high blood pressure, gastrointestinal problems, fatigue, headaches, back pain, sleep disorders as well as emotional effects such as lack of focus, anxiety, fear of failure, perception of low achievement, sadness and depression. Prolonged stress in critical care nurses can also impinge on patient safety, and nursing quality, highlighting the need for targeted interventions to enhance nurses' well-being and improve patient safety (Zaghini et al., 2023). Fear of exposure to infectious diseases, uncertainty of treatment, lack of medical equipment and supplies, lack of protective equipment and supplies, high role expectations and responsibilities, lack of adequate training in critical care, low wages and benefits, and job insecurity are factors which contribute to nurses' stress (Bolado et al., 2024). Evidence shows that globally 27% of intensive care nurses had the intention to leave (Xu et al., 2023).

Stress levels among critical care nurses vary depending on measures used, across countries, and across private and public hospitals (Elsherbeny & El-Masry, 2018). It is expected that with climate change, in the years to come, nurses will experience increased work stress which can hamper their own and patient safety (Ediz & Udun, 2025). Understanding the intricate link between occupational stress and job satisfaction is crucial for improving nurses' well-being and patient outcomes (Zaghini et al., 2023). Retaining intensive care nurses is essential to reduce staff shortages since turnover can cause additional burden on the remaining staff. This scoping review maps the connection between work-related stress and job satisfaction, highlighting their impact on critical care nurses. It builds on previous research, addressing the global concerns of nurses' job satisfaction, including turnover rates, staff shortages, excessive workloads, burnout, and ill health (Zhao et al., 2018; Zaki, 2016).

Prior reviews in this area, such as Koy et al. (2015), and Lu, Zhao and While (2019), synthesised job satisfaction literature across general hospital nursing populations and predate much of the recent critical-care-specific evidence. This review advances on that work in three ways: it focuses specifically on critical care nursing populations rather than hospital nursing broadly; it draws predominantly on primary studies published since 2015, and it maps organisational moderators alongside the stress-satisfaction relationship, rather than treating job satisfaction as a single, undifferentiated outcome.

Rationale and Aim

Despite a substantial body of primary research on nurse stress and satisfaction, evidence specific to critical care nursing remains scattered across heterogeneous designs, settings, and outcome measures. This scoping re-

view aims to map the existing quantitative evidence on the impact of work-related stress on job satisfaction among critical care nurses, identifying key contributing factors and evidence gaps to inform future research and practice. Using the Population-Concept-Context (PCC) framework: Population – critical care nurses; Concept – work-related stress and job satisfaction; Context – intensive care units (ICU), critical care units (CCU), and emergency care units worldwide.

Review Question

What does the existing quantitative literature (2015–2024) show about the relationship between work-related stress and job satisfaction among critical care nurses, and what individual and organisational factors have been examined as moderators of this relationship?

METHOD

A comprehensive literature search was conducted using databases such as CINAHL, PubMed, Cochrane, and the British Nursing Database, employing the PICO framework to structure the research. Boolean operators were applied to refine the search, using key terms such as "work-related stress," "occupational stress," "job stress," "professional stress," "job satisfaction," "nurses," and "critical care unit" to ensure thorough coverage of relevant studies.

The review focuses on primary studies published in English between January 2015 and December 2024 that specifically examine the relationship between work-related stress and job satisfaction among critical care nurses. Studies that assessed stress in healthcare professionals other than critical care nurses, such as physicians, allied health professionals, or administrative staff, were excluded. As a deliberate scope boundary for this iteration of the review, eligible study designs were restricted to quantitative primary research; qualitative studies and grey literature were not charted, and this restriction is acknowledged as a limitation. Two of the eleven included studies (Moscu et al., 2022; Tavakoli et al., 2018) were conducted with emergency department nurses rather than nurses working in critical care and intensive care units; these were retained because they met all other eligibility criteria and involved nurses managing acutely unstable patients under comparable high-acuity conditions.

The framework utilised for this study was PCC (Population, Concept, Context). The population for this study includes critical care nurses working in high-acuity settings, such as intensive care units (ICU), critical care units (CCU), and Emergency Departments. These nurses often manage complex patient conditions, make rapid clinical decisions, and work in high-pressure environments, mak-

ing them particularly susceptible to work-related stress. The study examines how stress affects these nurses, considering factors such as workload, emotional strain, and professional demands. By comparing nurses experiencing high stress with those reporting lower stress levels, the study seeks to determine whether work-related stress negatively influences job satisfaction, professional fulfilment, motivation, and overall workplace engagement. The findings will contribute to understanding the impact of stress on job satisfaction and retention rates among critical care nurses, providing insights into potential interventions and policy improvements to enhance their work environment.

RESEARCH LITERATURE SEARCH RESULTS

The initial literature search retrieved a total of 10,290 articles. After removing duplicates and applying the inclusion and exclusion criteria, 87 articles were screened by evaluating their titles, abstracts, and full texts. Following this process, 11 studies published between 2015 and 2024 were selected for data extraction based on their relevance to the relationship between work-related stress and job satisfaction among critical care nurses. The studies included participants from various critical care units across hospitals in Saudi Arabia, Iran, Romania, Egypt, and Croatia.

All of the studies emphasised the role of job satisfaction and coping mechanisms in reducing stress among critical care nurses, while others highlighted the impact of stress management programs on enhancing workplace efficiency and patient outcomes. Research also explored the influence of senior management policies, nurse engagement, and peer collaboration in mitigating work-related stress. Key findings indicated that teamwork, socialisation, supervisory support, and strategic interventions are vital in reducing job burnout and improving job satisfaction. These findings are summarised in Table 1, which provides an overview of the studies included in the review.

QUALITY ASSESSMENT

The selected studies demonstrated alignment between their objectives, research design, and methodological approach, ensuring their relevance to the research topic. All studies employed quantitative methods, with ten utilizing a cross-sectional design, one conducting a clinical trial, and another measuring biomarkers of stress. The quality of the selected articles (n=11) was independently assessed by two reviewers, using the Joanna Briggs Institute (JBI) Critical Appraisal Tool. Each study was evaluated based on standardized criteria, and achieved high methodological quality, indicating clarity in inclu-

sion criteria, detailed descriptions of study populations and settings, valid and reliable measurement of exposures and outcomes, adherence to standard measurement criteria, consideration of confounding factors, and the use of appropriate statistical analyses.

Variability in study designs, participant selection criteria, and measurement approaches may present challenges when comparing findings. While studies explored different quantitative aspects, including socio-demographic factors, exposure assessments, and statistical modelling, gaps remain in areas such as personality traits, coping strategies, and contextual influences. The absence of studies conducted in the Maldives, where the researchers are located further restricts the generalizability of the results to the context in which this research was done. However, these findings can be useful for researchers designing similar research in developing country contexts.

Maintaining methodological consistency is critical to ensuring the reliability of evidence in reviews. The stringent quality evaluation conducted in this review underscores the robustness of the selected studies, supporting their contribution to the broader evidence base. Table 1 presents the selected articles for this review following a thorough critical appraisal.

NARRATIVE ANALYSIS

The demanding nature of critical care environments often leads to high stress levels and burnout, ultimately affecting job satisfaction. Burnout rates appear higher since the

Covid-19 pandemic. Looking at demographic factors, stress levels increase with age and seniority of work, however, job satisfaction also appears to increase with age and seniority levels. Gender and job satisfaction appear to vary depending on context. While family plays a key role in enabling coping with stress, divorce acts as an additional family stressor.

The following sections explore four major themes in the reviewed papers: (1) Work-related stress and its impact on job satisfaction, (2) Factors influencing job satisfaction, (3) Stress management strategies, and (4) The role of senior management policies.

1. Work-Related Stress and Its Impact on Job Satisfaction

Claim: Across the included studies, higher work-related stress was consistently mapped alongside lower job satisfaction among critical care nurses, with burnout frequently identified as an intermediate factor (Akhtar et al., 2019; Friganović & Selič, 2021; Bagheri et al., 2017). Nine of the eleven included studies reported this pattern directly (Akhtar et al., 2019; Alharbi et al., 2016; Bagheri et al., 2017; Batran, 2019; Chegini, 2019; Eldin et al., 2021; Friganović & Selič, 2021; Tavakoli et al., 2018), with heavy workloads, emotional exhaustion, and high patient acuity identified as recurring stressors. The severity of stress-related challenges varied across healthcare settings and countries, but the direction of the association – higher stress corresponding with lower satisfaction – was consistent. Bagheri et al. (2017) found that psychological and physical

Table 1. Characteristics of the included studies for the scoping review

Note on Table 1: The “Findings and recommendations” column summarises each study’s own reported results. Where a sentence extends beyond the study’s stated findings to an interpretive comment, this interpretation was used in the discussion section of the review.

#	Details of the Study	Findings and Recommendations
1	Author(s)/Year/Country: Akhtar et al., 2019, Saudi Arabia Aim: To find out the level of job-related stress among nurses working in critical care areas of King Abdullah Medical City during the hajj season and to find out the effects of stress on nurses’ job satisfaction, physical and mental health. Methodology: Descriptive, Cross-sectional study, during Hajj season of 2017 Sample size: 100 critical care nurses	Forty nine percent of nurses reported mild mental and physical health problems due to stress while 22% to 29% respondents reported moderate to severe degree of health problems. 40% of the staff reported a mild degree of being emotionally drained at work, while 33% of them reported severe degree of emotional drainage and 27% reported a moderate degree of emotional exhaustion. 55% of nurses were apathetic towards their colleagues and 49% were apathetic toward their patients. The study found that 55% of nurses reported not being involved in job-related decision-making, which was associated with lower job satisfaction; 55% felt severely undervalued, 68% were afraid to express their needs, 59% wanted to change area of work, 88% reported feeling of incompetence while 77% reported a strong sense of commitment.

#	Details of the Study	Findings and Recommendations
2	Author(s)/Year/Country: Alharbi et al., 2016, Saudia Arabia Aim: To explore the prevalence of burnout and job satisfaction among Saudi national essential nurses of care. Methodology: Cross-sectional self-report survey using the Maslach burnout inventory (MBI) and the job satisfaction survey (JSS). Data was collected from October to December 2014 Sample size: 150 critical care nurses	Eighty four percent reported high levels of emotional exhaustion, 77% reported depersonalization, and only 42% reported perception of high level of personal accomplishment. The study reported nurses were satisfied by the nature of work, but felt ambivalent about pay, promotions, supervision, colleagues and communication. The nurses were dissatisfied about operating conditions and contingent rewards. Emotional exhaustion was negatively related to job satisfaction
3	Author(s)/Year/Country: Bagheri et al., 2017, Iran Aim: To explore the effects of psychological stress on ICU nurses' job satisfaction. Methodology: Cross-sectional self-report survey using Job Content Questionnaire (JCQ) and Minnesota Satisfaction Questionnaire (MSQ), Data was collected from September 2016 to March 2017 Sample size: 427 intensive care nurses	This study showed that psychological and physical demands were the primary contributors to work-related stress among ICU nurses. Their study reported that psychological demands had the highest mean score (39.16 ± 7.95) with an overall score of 81.65, while physical demands followed closely (14.45 ± 3.49) with an overall score of 72.26. These stressors were significantly higher compared to other dimensions assessed using the Job Content Questionnaire (JCQ). Additionally, nurses in critical care units experienced lower decision-making autonomy (21.48 ± 8.54, overall score of 44.77). Nurses who receive strong supervisory support and are actively involved in decision-making processes experience higher levels of job satisfaction. Average job satisfaction score was 58 in a score range from 20 (low) to 100 (high). The study emphasises that providing ICU nurses with control over their work environment and professional input can mitigate stress and enhance job commitment.
4	Author(s)/Year/Country: Batran, 2019, Saudi Arabia Aim: To identify sources of stress among nurses in Saudi Arabia to understand the effect of these stressors on their mental health and physical health. Methodology: Cross-sectional study using a self-administered questionnaire. Data was collected from June 2017 to June 2018. Sample size: 213 critical care nurses	Workload was the highest stressor at a mean score of 59.4, followed by lack of support at 55.3. Males, divorcees, and those with lower qualifications reported higher levels of stress. Years of working in critical care increased reported levels of stress and head nurses reported higher stress than other nurses. 70% reported backpain and headaches, closely followed by emotional exhaustion.
5	Author(s)/Year/Country: Behzadi et al., 2021, Iran Aim: To reduce nurses' job stress by teaching coping strategies. Methodology: Clinical trial study using Health Safety and Environment (HSE) job stress questionnaire, in 2020 Sample size: 60 intensive care nurses	The implementation of a stress management program of two sessions of four-hour duration was found to be highly effective in reducing occupational stress levels among ICU nurses. Information on the effect of stress on physical, mental, and social functions, types of physiological responses to stress, types of strategies such as relaxation, positive attitude, and visualization, relaxation, focus on breathing, ways to conserve energy, identifying and correcting inefficient thoughts, time management techniques and coping strategies were provided to nurses. Results showed significant differences in scores of job stress among intervention and control group in one and two months after the intervention indicating that when nurses are taught stress management skills, they experience reduced job stress.

#	Details of the Study	Findings and Recommendations
6	Author(s)/Year/Country: Chegini, 2019, Iran Aim: To examine the perceived occupational stress levels experienced by ICU nurses working in both public and private hospitals in Tabriz, Northwest Iran. Methodology: Cross-sectional comparative study using self-administered occupational stress questionnaire with 30 questions on five dimensions related to task, role-related stress, work-related stress, stress associated with organizational policies, and stress related to relationships between individuals. Data was collected between July and November 2017. Sample size: 500 Nurses working in 17 ICUs	Public hospital nurses reported higher levels of stress than private hospital nurses. Private hospital nurses also reported higher job satisfaction levels. Organizational policies, and work environment related stressors were identified by both groups as factors contributing to occupational stress. A supportive work culture, teamwork, and socialization play vital roles in reducing stress and enhancing job satisfaction. The study suggests that fostering strong interpersonal relationships among nurses can lead to a more cohesive work environment, where nurses feel valued and supported. Effective communication and social bonding are key to reducing job-related stress in critical care settings.
7	Author(s)/Year/Country: Eldin et al., 2021, Egypt Aim: The detection of health effects of work-related stress and investigate the link between stress and immune response, alterations of hormone levels and expression of micro-RNA (miRNA) among critical care nurses. Methodology: Full history, General Health Questionnaire (GHQ12) and a full examination were used. Serum interleukin (IL)-6, IL-10, luteinizing hormone (LH), follicle-stimulating hormone, thyroid-stimulating hormone (TSH), free triiodothyronine, and free thyroxine (FT4) were measured by enzyme-linked immunosorbent assay, micro-RNA26, and 142 extractions Sample size: 80 critical care nurses	Critical care nurses had significantly higher levels of miRNA 26, miRNA 142, TSH, LH, and IL-6 when compared to the control group, and lower levels of FT4, indicating increase in inflammatory cytokines and endocrine system disturbances. Fatigue, musculo-skeletal pain and headaches were reported as symptoms of stress. 33% reported severe psychological distress, compared to only 5% in control group. Active nurse engagement in hospital administrative committees and decision-making bodies can significantly reduce stress and workload burdens. The study recommends that nurses should have a platform to voice their concerns, influence policy changes, and participate in leadership roles to improve workplace conditions and job satisfaction.
8	Author(s)/Year/Country: Friganovic & Selic, 2021, Croatia Aim: To explore the associations between levels of burnout syndrome, coping mechanisms and job satisfaction in critical care nurses Methodology: Cross-sectional multicenter study using the Maslach Burnout Inventory (MBI), The Ways of Coping (WOC), and The Job Satisfaction Scale (JSS). Data was collected in Spring and Summer of 2017. Sample size: 620 critical care nurses	Twenty two percent of nurses had a high level of emotional exhaustion (EE), eight percent demonstrated depersonalization (DP), 34.5% had a low sense of personal accomplishment (PA), and 11.6% had burnout. Active coping was practiced by 63% of male and female nurses. Gender showed no difference in coping or job satisfaction. Passive coping was used at higher levels as burnout symptoms increased. Job satisfaction assessed as neutral, satisfied and very satisfied was associated with a lower level of burnout. Higher levels of emotional exhaustion were associated with reduced job satisfaction and increasing passive coping mechanisms. They hypothesized that organizational and work-related variables may be contributing to depersonalization and burnout. Active coping is associated with higher job satisfaction.
9	Author(s)/Year/Country: Morsy & Ebraheem, 2020, Egypt Aim: To assess work-related stressors, coping strategies, and its relation to job performance and perceived organizational support among critical care nurses. Methodology: A descriptive correlational study using Work-Related Stressors Assessment Questionnaire, The Coping and Adaptation Processing Scale (CAPS), Nurses' job Performance evaluation (observational checklist), and Perceived Organizational Support Questionnaire. Data collected from January to February 2020 Sample: 235 critical care nurses	Twenty six percent of nurses reported high level of work-related stress while 60% reported moderate level of stress. The highest work-related stressor was lack of work support from colleagues followed by workload, death and dying, contact with others and job security. Nine percent of nurses had a low level of coping strategies, 27% moderate level, and 64% had a high level of coping strategies. There was a positive correlation between coping strategies and job performance as well as organizational support and job performance. Stress management training, including time management, workload distribution, and psychological coping techniques, has a direct impact on nurse performance. The study calls for regular seminars and workshops to help nurses manage their stress effectively, enhancing their job performance and patient care quality.

#	Details of the Study	Findings and Recommendations
10	Author(s)/Year/Country: Moscu et al., 2022, Romania Aim: To identify the level of burnout syndrome among emergency department nurses, as well as the impact of burnout syndrome on job satisfaction. Methodology: Descriptive, cross-sectional study using the Maslach Burnout Inventory-Human Services Survey for medical personnel (MBI-HSS (MP)), and the Job Satisfaction Survey (JSS). Data collection was from January to March 2022. Sample size: 80 emergency department nurses	Emotional exhaustion (EE) had an average value of 23.4 points (62.5%), depersonalization (DP) had an average value of 17.7 points (48.7%), and the low personal accomplishment scale (AP) had an average value of 27 points (60%). 36% of nurses showed a high level of burnout. Nurses were ambivalent about the chance of promotion, communication with colleagues or superiors and job benefits. Nurses were satisfied with most aspects of their work, including remuneration, supervision, rewards, operating conditions, colleagues and the nature of their work. The authors recommended psychoactive intervention strategies, such as mindfulness training, meditation, and cognitive-behavioural therapy, to reduce burnout among emergency and ICU nurses.
11	Author(s)/Year/Country: Tavakoli et al., 2018, Iran Aim: To determine the status of job burnout, stress, and satisfaction and their relationship. Methodology: A prospective cross-sectional study using the Maslach Burnout Inventory (MBI), The hospital stress scale (HSS-35), and The Job Descriptive Index (JDI). Data was collected in March 2017 Sample size: 709 emergency department nurses in ten hospitals	The level of job burnout was moderate in 76.1%, low in 22.5%, and high in 1.4% of the nurses. The level of job stress was moderate in 80.3%, low in 10.5%, and high in 9.2% of the nurses. The level of job satisfaction was moderate in 61.1%, low in 22.2%, and high in 16.7%. Job burnout was directly correlated with job stress ($p \leq 0.001$, $r = 0.57$) and job burnout was negatively correlated with job satisfaction ($p = 0.001$, $r = -0.41$). High levels of job stress led to increased burnout, negatively impacting job satisfaction and retention rates. This study revealed job satisfaction increased with age. The authors recommended planning to reduce emergency department nurse burnout.

demands were the primary contributors to work-related stress among ICU nurses, using the Job Content Questionnaire (JCQ): psychological demands had the highest mean score (39.16 ± 7.95 , overall score 81.65), followed by physical demands (14.45 ± 3.49 , score 72.26); nurses also reported lower decision-making autonomy (21.48 ± 8.54 , score 44.77). Implication: these findings point to psychological workload and decision-making autonomy as two specific, measurable targets for organisational intervention, rather than “stress” as an undifferentiated construct.

2. Factors Influencing Job Satisfaction

Several factors influence job satisfaction among critical care nurses, with senior management policies, work environment, and interpersonal relationships playing a crucial role. Recognition, rewards, and involvement in decision-making processes significantly contribute to job satisfaction (Akhtar et al., 2019; Bagheri et al., 2017). Akhtar et al. (2019) also highlighted the significant role of workplace policies in shaping job satisfaction among ICU nurses. Their study found that 55% of nurses reported not being involved in job-related decision-making, which contributed to dissatisfaction. Additionally, teamwork and a supportive work culture foster job satisfaction by promoting collaboration and reducing workplace stress (Chegini, 2019). Nurses who experience

strong supervisory support and opportunities for professional growth are more likely to report higher job satisfaction. Additionally, Tavakoli et al. (2018) found that job burnout, stress, and satisfaction were closely interconnected among emergency nurses. Their study revealed that more than 60% of the nurses experienced moderate levels of burnout and stress, which directly impacted their job satisfaction. A strong positive correlation was observed between job stress and burnout, meaning that higher stress levels led to increased burnout. Conversely, job burnout had an inverse relationship with job satisfaction, indicating that nurses experiencing higher burnout reported lower satisfaction with their work.

3. Stress Management Strategies

Implementing stress management strategies is essential for mitigating work-related stress and improving job satisfaction among critical care nurses. Research indicates that structured stress management programs, including training workshops, seminars, and conflict resolution sessions, significantly reduce stress levels (Behzadi et al., 2021; Morsy & Ebraheem, 2020). These interventions help create a more sustainable and supportive work environment by equipping nurses with coping strategies and time management skills. The study underscored the need for effective stress management pro-

grams to mitigate burnout and enhance job satisfaction. Addressing workplace stressors, providing emotional and psychological support, and fostering a positive work environment were suggested as key strategies to improve nurse well-being and retention rates in critical care settings (Tavakoli et al., 2018).

4. The Role of Senior Management Policies

Senior management is pivotal in shaping workplace conditions that impact stress levels and job satisfaction. Policies that include clear job responsibilities, structured work schedules, and employee recognition programs improve job satisfaction and reduce burnout (Akhtar et al., 2019; Alharbi et al., 2016). Management strategies which prioritize staff well-being, such as workload regulation and participatory decision-making, have enhanced overall job retention and work satisfaction (Friganović & Selič, 2021; Morsy & Ebraheem, 2020).

Senior management policies, workplace culture, and nurse involvement in decision-making were the organisational factors most frequently associated with better outcomes, while heavy workload, high patient acuity, and low decision-making autonomy were the most frequently reported stressors. These findings are broadly consistent with earlier, broader reviews of hospital nursing job satisfaction (Koy et al., 2015; Lu, Zhao & While 2019), which similarly linked job satisfaction to burnout, workload, and leadership.

DISCUSSION

Several plausible mechanisms may link stress to reduced job satisfaction in this population: sustained high psychological and physical demands may exhaust individual coping resources (consistent with conservation-of-resources theory), while low decision-making autonomy and unclear organisational policy may compound this by removing nurses' sense of control. However, the evidence base underlying these patterns is heterogeneous. The eleven included studies span five countries (Saudi Arabia, Iran, Romania, Egypt, Croatia) with different staffing models, healthcare financing, and cultural contexts, which limits direct comparability. Measurement also varied considerably: studies used different instruments (e.g., the Job Content Questionnaire, the Maslach Burnout Inventory, and study-specific questionnaires), making it difficult to compare effect magnitudes across studies even where the direction of association was consistent. This heterogeneity, combined with the predominantly cross-sectional, self-report design of the evidence base means the findings above should be read as consistently mapped associations rather than confirmed causal mechanisms.

Burnout among ICU nurses is influenced by various

factors, including workload, emotional demands, and the significance of their profession. Alharbi et al. (2016) investigated several characteristics affecting burnout and work satisfaction among Saudi critical care nurses, concluding that high levels of emotional tiredness were a major predictor of low job satisfaction. Batran (2019) also observed that Saudi nurses working in ICUs experienced significant work-related stress, leading to burnout and decreased job satisfaction. Job satisfaction for ICU nurses is influenced by senior management policies, the work environment, and interpersonal connections. Active management methods, such as recognition, rewards, and clearly defined roles, can enhance job satisfaction and reduce stress (Akhtar et al., 2019; Alharbi et al., 2016). Chegini (2019) stressed the importance of a supportive work environment, collaboration, and socialization in increasing job satisfaction among critical care nurses in both the public and private sectors.

Burnout among critical care nurses is a serious problem, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment. The demanding nature of critical care nursing and significant mental and physical stress can lead to burnout and lower job satisfaction (Friganović & Selič, 2021). This inverse relationship between burnout and work satisfaction has been well-documented, highlighting the crucial need to address issues contributing to both stress and satisfaction levels among critical care nurses.

Senior management strategies greatly influence work satisfaction and stress levels among critical care nurses. Effective management methods, including recognition, incentives, and time management, are crucial for reducing stress and enhancing job satisfaction (Akhtar et al., 2019). Recognition and awards make nurses feel valued and appreciated, leading to reduced burnout and improved job satisfaction (Alharbi et al., 2016). Clear roles and controlled schedules are also vital as they provide structure and predictability, reducing overall stress for critical care nurses (Morsy & Ebraheem, 2020).

Implementing stress management measures is crucial for mitigating the adverse effects of work-related stress on critical care nurses. Behzadi et al. (2021) found that stress management programs reduced occupational stress while also improving nursing service quality. Morsy & Ebraheem (2020) suggested organizing seminars and workshops to address specific stressors such as conflict resolution, time management, preparedness for moral, emotional, and physical distress and post-traumatic stress disorders, which are critical for increasing job satisfaction and reducing burnout. Senior management strategies significantly influence work satisfaction and stress levels among critical care nurses. Effective management methods, such as recognition, rewards, defined roles, and con-

trolled schedules, can considerably minimize burnout and increase job satisfaction (Akhtar et al., 2019; Alharbi et al., 2016). Friganović & Selič (2021) and Morsy & Ebraheem (2020) emphasized the importance of supportive management in improving work conditions and nurse satisfaction.

Critical care nurses require a supportive work environment to maintain high levels of job satisfaction. A positive work environment is strongly influenced by factors such as adequate staffing, access to necessary resources, and a safe working environment (Bagheri et al., 2017). Additionally, achieving work-life balance is crucial for reducing stress and increasing job satisfaction. A well-structured work environment with flexible scheduling and appropriate time off can help nurses manage their professional and personal lives, resulting in increased job satisfaction and reduced stress levels (Chegini, 2019).

A positive work environment, built on interpersonal connections and collaboration, significantly influences the job satisfaction and stress levels of critical care nurses. According to Chegini (2019), fostering positive interactions and successful cooperation among colleagues can create a supportive atmosphere, crucial for reducing stress and increasing job satisfaction. Additionally, active participation in administrative committees and decision-making processes can help nurses minimize workload stress and improve their overall quality of life (Eldin et al., 2021).

Psychosocial therapies play a crucial role in reducing burnout and increasing work satisfaction among critical care nurses. These therapies focus on building resilience, providing emotional support, and promoting effective coping strategies (Moscu et al., 2022). Moreover, structured stress management programs, including seminars and workshops on conflict resolution and time management, equip nurses with essential skills to meet the demands of their jobs (Behzadi et al., 2021; Morsy & Ebraheem, 2020). It's also critical to provide access to mental health resources and counseling services to support nurses in managing stress effectively.

Research indicates that factors such as high patient loads, poor communication with management, and work-related stress significantly impact burnout and job satisfaction among critical care nurses. Studies by Akhtar et al. (2019) and Batran (2019) suggest that high patient ratios can have detrimental effects, while Alharbi et al. (2016) and Friganović & Selič (2021) emphasize the importance of excellent communication in promoting work satisfaction. Similarly, Bagheri et al. (2017) and Behzadi et al. (2021) stress the need to manage workplace stresses, while Tavakoli et al. (2018) and Moscu et al. (2022) highlight the necessity for systemic improvements. These findings underscore the importance of comprehensive strate-

gies and interventions to enhance job satisfaction and prevent burnout among critical care nurses.

This mapping exercise consistently found an association between higher work-related stress and lower job satisfaction among critical care nurses across the eleven included studies, with burnout frequently identified as an intermediate factor (Fernandes et al., 2017). Stress management techniques and supportive organisational practices were the interventions and factors most consistently linked to better outcomes; addressing these is relevant to enhancing the well-being and performance of critical care nurses and, in turn, patient care outcomes.

LIMITATIONS

This scoping review has various limitations that impact the findings and interpretations (Vieira, Lima, & Mizubuti, 2019). The emphasis on quantitative research leaves out the rich, contextual material that qualitative investigations and grey literature might give, thus reducing our comprehension of the issue. Furthermore, the search approach may have inherent biases, and the selection procedure, which is based on standardized criteria, may not fully capture the quality and relevance of all possible research. Although the JBI critique tool is robust, it can be applied and interpreted inconsistently. Because of these limitations, the findings should be taken with caution, considering any potential biases or gaps in the evidence and review procedures.

IMPLICATION FOR EDUCATION, PRACTICE AND RESEARCH

The mapped studies point to targeted educational programmes addressing the specific stressors experienced by critical care nurses, including training in stress management, resilience building, and effective communication skills (Chegini, 2019; Alharbi et al., 2016). This is a moderate-strength implication: it is supported by consistent associations across several cross-sectional studies, but not by any included trial directly testing an educational curriculum, so its benefit should be evaluated prospectively rather than assumed.

Ensuring clear communication and involving nurses in decision-making processes were both associated with better outcomes in the mapped evidence (Friganović & Selič, 2021; and, in an emergency-department context, Moscu et al., 2022). Of the practice implications identified, the stress-management-programme recommendation carries the strongest evidence, as it is the only one supported by an intervention study rather than cross-sectional association (Behzadi et al., 2021); the remaining practice recommendations are supported only by observational association and should be treated as hypotheses

for practice change rather than established effective interventions.

Future research should prioritise longitudinal and intervention studies to track the evolution of stress and burnout and to test the effectiveness of stress-management interventions specifically within critical care settings, rather than extrapolating from emergency-department evidence (Tavakoli et al., 2018) or general hospital nursing. Cultural and contextual factors affecting burnout should be examined explicitly rather than assumed to generalise across settings (Eldin et al., 2021; Batran, 2019; Chegini, 2019).

CONCLUSION

This scoping review mapped eleven quantitative studies and found a consistent association between higher work-related stress and lower job satisfaction among critical care nurses, with burnout frequently identified as an intermediate factor. Senior management policy, nurse involvement in decision-making, and supportive workplace culture were the organisational levers most consistently linked to better outcomes; stress-management training and structured communication were the most actionable, practice-ready interventions identified. The evidence base remains predominantly cross-sectional, self-reported, and geographically limited. The priority for future research is longitudinal and intervention studies – particularly testing stress-management programmes directly within critical care, intensive care and neonatal intensive care settings – to move this evidence base from association towards causal, generalisable evidence.

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AUTHOR CONTRIBUTIONS

Author one conceptualised the study, developed the methodology, conducted the literature search, screening, data charting, analysis and synthesis, and contributed to drafting and revising the manuscript. Author two contributed to the screening, data charting, interpretation of the findings, and critical revision of the manuscript. Both authors reviewed and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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The authors declare no conflict of interest.

ETHICS APPROVAL

Ethics approval was not required for this scoping review because it involved the review and synthesis of information from publicly available published literature and did not involve human participants, collection of personal data, or any intervention.

USE OF AI-ASSISTED TOOLS

Grammarly was used for grammar checking.