

Burnout Level and Its Associated Factors Among Critical Care Nurses: A Literature Review

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ABSTRACT

Burnout is defined as a prolonged response to ongoing interpersonal and emotional stresses at work and has three dimensions: emotional exhaustion (EE), depersonalization (DP), and decreasing personal accomplishment (PA). Burnout is a condition that affects individuals working in a variety of professions, including healthcare, and is currently the subject of much national and worldwide interest. Burnout in critical care nurses can result from several different things. So, this review aimed to determine the prevalence of burnout among critical care nurses and the risk factors that affect it. The search, filtration, and selection procedures were carried out using the PRISMA 2020 flow diagram. The publications considered for the thematic review were located using Google Scholar, Science Direct, PubMed, and Wiley Online Library. Items released in English between January 2010 and August 2020 were included in the inclusion period. The search criteria were selected by assessing the abstracts before studying the full-text documents. The keywords to be included in the final analysis were burnout, critical care nurses, critical care units, and the associated factor tied to burnout as the outcome. There was a total of 264 full texts discovered from the electronic databases searched. After the duplicate articles were eliminated and the initial examination of the abstract was finished, twenty studies satisfied the criteria for inclusion. Most of the research used the Maslach Burnout Inventory (MBI) questionnaire. The prevalence of burnout ranged widely, from 8.7% to 84.4%, according to the findings. EE was shown to have the highest levels of burnout, with DP coming in second with ranges of 38.4% to 84.0% and 26.1% to 77.0%, respectively. The range for PA, on the other hand, was 15.0% to 77.1%. The main risk factors for burnout were age, gender, marital status, having children, education level, and sociodemographic traits. While working shifts, the number of years of experience, the working environment, the nurse-to-patient ratio, workload, job discontent, and workplace conflict were all occupational characteristics associated with burnout. Burnout is a threat to the critical care nurse. It is unknown whether the factors contributing to burnout pose a significant problem for nurses.

Keywords: Burnout, Emotional exhaustion, Depersonalization, Personal accomplishment, Critical care nurse

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Article History:

Submitted: 30 September 2022
Revised: 1 November 2022
Accepted: 15 March 2023
Published: 31 March 2023

DOI: 10.31436/ijcs.v6i1.277

ISSN: 2600-898X

INTRODUCTION

A state of mental and physical exhaustion brought on by one's job was once thought to be burnout (1). Burnout is a psychiatric illness that develops as a protracted reaction to ongoing interpersonal pressures at work. Its three main manifestations are extreme weariness, cynicism, disengagement from one's work, and a sense of inefficiency and lack of accomplishment (2).

The exhaustion dimension of burnout was defined as wearing out, losing energy, depletion, debilitation, and fatigue. In contrast, the cynicism dimension, initially called depersonalization, was defined as having a poor or inappropriate attitude towards clients, becoming irritable, losing hope, and withdrawing (2). Maslach and Leiter noted that the inefficacy component was first referred to as a reduced personal accomplishment and described as low morale, reduced productivity, and an inability to cope (2).

Burnout develops in two stages. The first stage is related to job demands, which cause ongoing overexertion and, in the end, tiredness. Lack of employment resources contributes to disengagement from work in the second process (3). Burnout is primarily characterised as an occupational trait of a social phenomenon, although individual elements may contribute to its development (4).

Recently, burnout has drawn considerable attention on a global scale, and it is likely to impact people in many different professions, including those in healthcare. Professionals frequently deal with demanding, complex issues in the healthcare system, which can be very stressful (5). Alas, nurses who make up a bigger portion of healthcare professionals and are frequently exposed to traumatic events due to the nature of their employment have been highlighted as contributing factors to job turnover (6).

Additionally, nurses who frequently manage patient care encounter ethical dilemmas and frequently deal with dying patients terrified of medical mistakes that could have detrimental effects. Critical care nurses are thought to be more susceptible to burnout than healthcare professionals in other specialities (7). Due to the

greater workload and stress in the critical area, nurses working in the emergency department (ED) and intensive care unit (ICU) were found to have a higher rate of burnout than nurses working in general wards (8).

A variety of circumstances may cause critical care nurses' burnout. It may be the work environment or one's circumstances. Burnout may result from various reasons, including lifestyle choices and personality qualities in addition to those related to the workplace (9). It is common knowledge that critical care nurses treat patients who are critically ill or sustain injuries that require immediate medical attention. Acute illness patients may experience burnout syndrome, which may be influenced by ethical choices made regarding end-of-life care (5). According to several studies, the nursing profession has a high burnout rate. About half of the nurses in tertiary hospitals reported burnout due to variables related to their jobs and the workplace (10,11).

However, there is still a significant void in the literature regarding the causes of burnout in critical care nurses. Consequently, our review aims to determine how often burnout is among critical care nurses and pinpoint risk factors for it.

METHODS

Design and Search Strategy

This thematic review paper uses the Medical Subject Headings and the databases PubMed, Science Direct, Wiley Online Library, and Google Scholar (MeSH). The search for pertinent articles utilised the phrase "burnout AND critical care nurses AND critical care unit". The investigation was done in August 2020.

Inclusion and Exclusion Criteria

The following criteria were required for inclusion: (1) free-text English language articles published between the years 2010 and 2020, as of August 25, 2020; (2) quantitative studies that measured burnout and associated factors as the outcome; and (3) participants in the study had to be critical care nurses. (1) Qualitative research and reviews and (2) the lack of full-text papers were the exclusion criteria.

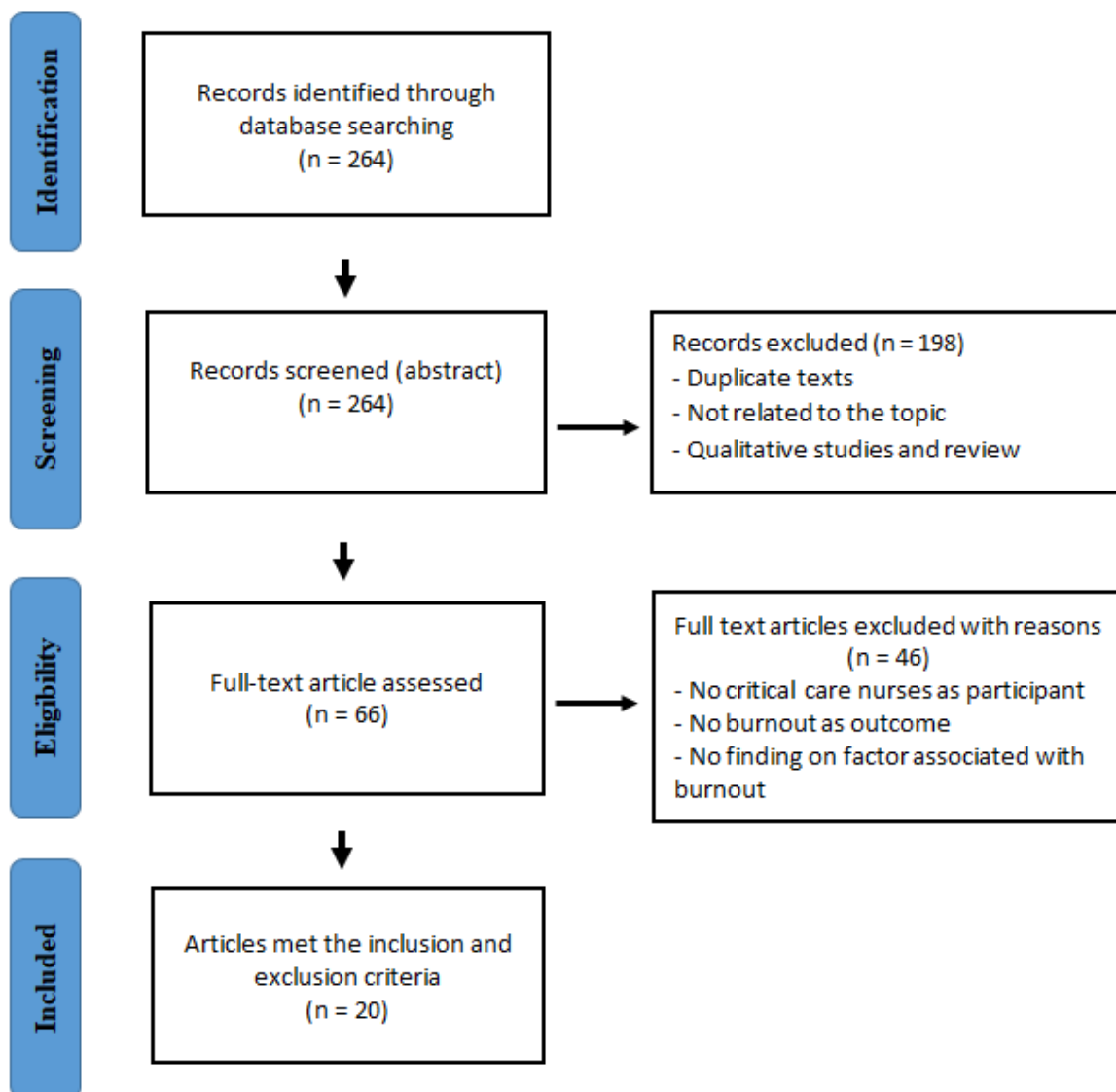
Reporting of the findings

The review was done on the titles and abstracts of the publications. Data from the abstract were used for the initial review after duplicate articles were checked for. Then, full-text publications were scrutinised for eligibility following the inclusion criteria where the abstract could not offer the necessary information.

Following the search, rewriting, and selection procedure outlined in the PRISMA 2020 flow

diagram, this paper reported the results following the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) format (12). PRISMA 2020 was created for the reviewers to examine the reasons for the review's conduct, the methods used, and the results of the search (12), which this article describes as it relates to the information required based on the objective. **Figure 1** illustrates the PRISMA flow diagram of searching, refining, and choices.

Figure 1: PRISMA flow diagram for search, refining, and selections process



Data extraction

The author, year of publication, the nation of study, setting, assessment instrument for measuring burnout, sample size, participation rate, the prevalence of burnout, and risk factors were taken from each journal. Since the data were collected independently and without the direct involvement of any human subjects, ethical clearance is not required.

RESULTS

In the beginning, 264 entire texts were identified from the database. Twenty papers met the requirement after screening for duplicate articles and exclusion criteria. **Table 1** displays the features of the chosen articles. Every study found was released between 2010 and 2020. Ten studies were conducted in Asia (China, Iran, Saudi Arabia, South Korea, Singapore, Palestine, Egypt, Turkey, and Jordan), four in South America (Brazil, Peru, and Argentina),

three in Europe (Switzerland, Ireland, and Portugal), two in the United States of America, and one in South Africa, according to the geographical distribution.

Various instruments have been used to measure burnout, with the Maslach Burnout Inventory (MBI) being utilised in around 85% (n = 17). The remaining participants used additional measures of burnout, including the Professional Quality of Life: Compassion Satisfaction and Fatigue Subscales, R-IV (n = 1), Burnout Measure-Short Form (n = 1), and Copenhagen Burnout Inventory (n = 1).

Four research looked at burnout among critical care workers and from other departments, and sixteen publications exclusively looked at burnout among healthcare workers in the critical care unit. Of the twenty papers, sixteen research examined nursing burnout alone, while the remaining studies examined nurse burnout combined with other healthcare professionals.

Table 1: Characteristics of the studies

Study	Country	Setting	Burnout measurement	Sample size	Prevalence of burnout	Risk factor
1. Hooper et al 2010 (13)	United State	ED, ICU, Nephrology & Oncology.	The Professional Quality of Life: Compassion Satisfaction and Fatigue Subscales R-IV	114	ED - 36.7% ICU - 50%	Female nurses had a higher incidence of compassion fatigue than male nurses.
2. Merlani et al 2011 (14)	Switzerland	74 ICUs in Switzerland (Nurse, Nurse Aid, Physician)	Maslach Burnout Inventory	2996	ICU Nurse - 28%	Being a male, having no children and being under 40 years old.
3. Klopper et al 2012 (15)	South Africa	Critical care units from 55 private hospitals and seven national referral hospitals	Maslach Burnout Inventory	935	NA	Dissatisfaction with wages, opportunities for advancement, study leave and a practice environment with inadequate staffing and resources and lack of nurse participation in hospital affairs.

Study	Country	Setting	Burnout measurement	Sample size	Prevalence of burnout	Risk factor
4. Azizkhani et al 2012 (16)	Iran	ED, Orthopedics, Dialysis & ICU in Isfahan's Alzahra Hospital	Maslach Burnout Inventory	100	ICU - 8.7% ED - 17%	Gender - women & working unit.
5. Ayala E. & Carnero A.M. 2013 (8)	Peru	Acute and critical care departments of Hospital Central de la Fuerza Aérea del Perú	Maslach Burnout Inventory	93 (84.5%)	NA	EE - Having children & years working in the current department DP - Age, single marital status compared with being divorced, separated or widowed & working unit. PA - Having children.
6. Özden et al 2013 (17)	Turkey	ICU of 3 teaching hospitals in a city located in Central Anatolia in Turkey	Maslach Burnout Inventory	138 (67.0%)	NA	Education level, working experience, shift schedule, ethic training & job satisfaction.
7. Guntupalli et al 2014 (18)	United State	The ICUs of the Harris County Hospital District Houston (Nurses & Respiratory Therapist)	Maslach Burnout Inventory	213	EE 54.3% DP 40.1% PA 40.6%	Work schedule - night shift nurses had less degree of burnout.
8. Zhang et al 2014 (19)	China	Seventeen ICUs from 10 tertiary-level hospitals in Liaoning, China	Maslach Burnout Inventory	426 (87.7%)	16% EE 43.2% DP 26.1 PA 41.2	Working experience - 5-10 years had a The high degree of burnout High DP associated with education level - diploma holder.

Study	Country	Setting	Burnout measurement	Sample size	Prevalence of burnout	Risk factor
10. Alharbi et al 2016 (21)	Saudi Arabia	Critical care department from 3 government hospitals in Hail, Saudi Arabia.	Maslach Burnout Inventory	150	EE 84% DP 77% PA 42%	Job satisfaction Working area
11. Kim H.S. & Yeom H. 2017 (22)	South Korea	ICU from 3 University Hospitals	Burnout Measure-Short Form	318	3.15 out of 5	Younger age, lower education level, single marital status, having no religion, less work experience, working area and previous end-of-life care experience.
12. Padilha et al 2017 (23)	Brazil	2 Trauma ICUs in the city of São Paulo	Maslach Burnout Inventory	53	17%	Job dissatisfaction, working environmental characteristics to be inadequate & high nursing workload.
13. Hamdan & Hamra 2017 (24)	Palestine	14 EDs from West Bank and Gaza Strip (Physician, Nurse, support staff)	Maslach Burnout Inventory	444	Nurses EE 64.8% DP 38.1% PA 34.6%	Being younger, exposure to physical violence & workers' intention to leave the department.
14. Jiang et al 2017 (25)	China	ED from 30 hospitals in Shanghai	Maslach Burnout Inventory	976 (86.9%)	NA	Job dissatisfaction - salary, nurse-patient relationships, nurse staffing and work environment.
15. See et al 2018 (26)	Singapore	159 ICUs in 16 Asian countries and regions. (Physician & Nurse)	Maslach Burnout Inventory	4092	Nurses - 52.0% Among countries - 34.6 to 61.5%	Education level, religiosity and better work-life balance

Study	Country	Setting	Burnout measurement	Sample size	Prevalence of burnout	Risk factor
16. Vasconcelos & Martino 2018 (27)	Brazil	Critical care unit of Teaching hospital in the city of São Paulo	Maslach Burnout Inventory	91	14.3% EE 47.2% DP 34.1% PA 34.1%	Age, marital status, no of children, physical activity, salary, working hours per week & working experience
17. Elshaer et al 2019 (28)	Egypt	Surgical ED & ICU at Alexandria University Hospital	Maslach Burnout Inventory	82 (80.4%)	NA	Job satisfaction and responsibility for peoples' life were associated with PA
18. Torre et al 2019 (29)	Argentina	ICU in Argentina	Maslach Burnout Inventory	486 (48.35%)	84.4% EE 46.7 DP 63.5 PA 77.1%	High nurse-to-patient ratio
19. Alfuqaha et al 2019 (30)	Jordan	2 public and 4 private hospitals (General wards, ICU & ED)	Maslach Burnout Inventory	350	NA	Education level & type of hospital - private
20. Nobre et al 2019 (12)	Portugal	Adult general emergency service in the region of Lisbon	Copenhagen Burnout Inventory	32 (71.1%)	59.4%	Age, year of working in an institution, working experience & thinking about changing professions

Prevalence of Burnout among Critical Care Nurses

Emotional exhaustion (EE) is defined as a condition that persists and is characterised by physical and emotional tiredness due to excessive demands from work or personal obligations and continual stress (31). Whereby, depersonalization (DP) can manifest as a reduction in appreciation for firm employees and the emergence of negative and unfavourable customer sentiments (32). Reduced productivity or competence, low morale, and an inability to cope were all characteristics used to identify the inefficacy component for personal achievement (PA), a less personal accomplishment (33).

Most studies concluded that high levels of burnout were common and ranged from 8.7%

to 84.4%. (16,29). The prevalence was then shown in three areas, namely emotional fatigue (EE), depersonalization (DP), and diminished personal accomplishment (PA), for the studies that used the Maslach Burnout Inventory (MBI). The highest dimension of burnout was discovered to be EE, followed by DP, with ranges of 38.4% to 84.0% and 26.1% to 77.0%, respectively (20,21). In contrast, the range for PA was 15.0% to 77.1%. (20,29).

A prevalence of high burnout was identified in four studies, ranging from 16.0% to 84.4%. (19,29). The results of two studies in Brazil, where the burnout rate among critical care nurses was 17.0% and 14.3%, were similar (23,27). In addition, research in South Korea utilising the Burnout Questionnaire revealed

that the ICU nurses had a burnout score of 3.15 on a scale of 5 (22).

Factors Associated with Burnout among Nurses

The review papers' identification of burnout risk factors mainly focused on sociodemographic and occupational characteristics.

Sociodemographic Factors

Burnout among critical care nurses was linked to sociodemographic characteristics such as age, gender, education level, marital status, and having children (8,12,14,16,17,20,22,24,26,27,29). According to several studies (12,20,22,24,27), younger nurses were more likely to experience burnout. In contrast, others claim that nurses over 30 to 40 are more susceptible to burnout brought on by low DP (8,14). There was a difference in burnout levels between men and women according to gender, with women being rated higher than males (16). On the contrary, a Swiss study discovered that men experience higher burnout than women and that having more female nurses on the team was linked to a lower chance of experiencing high levels of individual burnout (14).

According to reports, single nurses were more prone to burnout than married nurses (20,22,27). However, according to a Peruvian study, DP scores were independently and negatively correlated with being divorced, separated, or widowed compared to being single (8). The amount of education was also identified as another sociodemographic component connected to burnout. Regarding the level of education, two studies found that compared to nurses without a degree, critical care nurses with degrees had statistically significantly higher mean ratings for burnout (17,26). Other than the socio-demographic information, occupational characteristics were found to be the other causes of burnout among healthcare professionals, primarily critical care nurses.

Occupational Factors

One of the key aspects in the literature review on factors linked to burnout was occupational characteristics, such as working experience,

working environment, working hours, working schedule, workload, and job satisfaction. Workplace factors at the hospital play a significant part in occupational burnout, so methods to avoid these issues must be developed (16).

Critical care nurses with less than five years of clinical experience were found to have greater levels of burnout (17,22,27). Also, it was shown that the longer someone worked in a profession, the lower their burnout, whereas the longer they worked for an institution, the higher their burnout (12). Conversely, it was shown that nurses who worked shifts had high EE and DP ratings but low PA scores (17). Compared to the day shift, a night shift nurse had higher EE and DP scores with lower PA scores, suggesting that it may have some protective effects that help nurses avoid burnout's early stages (18). Those who can't handle the night shift have probably switched shifts or even changed careers (18).

Moreover, increased hours worked per week were linked to increased burnout and high EE with DP (20,27). In addition, according to three studies, inadequate staffing and a heavy workload contribute to burnout in critical care nurses (15,23,25). Then, it was shown that burnout among critical care nurses is similarly related to work environments. Compared to nurses in other settings, those in the ED and ICU had a higher risk of occupational burnout (16). Also, compared to nurses working in other critical units and the emergency department (ED), critical care nurses in the Paediatric Intensive Care Unit (PICU) had greater levels of EE (21). Yet, compared to other critical care units, a different study indicated that ICU nurses have higher rates of burnout (22).

Several studies have found that burnout among critical care nurses is associated with work dissatisfaction (17,23,25). Moreover, a study conducted in Saudi Arabia revealed that registered critical care nurses experienced moderate to severe burnout in EE and DP, which was associated with ambivalence and unhappiness with their occupations but contentment with the nature of their work (21). In addition, a study conducted in Egypt discovered a favourable relationship between burnout's personal accomplishment area and job satisfaction (28).

DISCUSSION

Prevalence of burnout among critical care nurses

Those working in the healthcare industry frequently express moderate to high burnout. The risk of burnout in the healthcare industry is higher than it is for the overall working population (33). According to twenty research including critical care nurses and a range of 8.7% to 84.4%, the prevalence of burnout is thus established. According to the MBI, the three burnout subscales fell into the following categories: severe emotional exhaustion (range: 38.4%–84.0%), high depersonalization (range: 26.1%–77.0%), and poor personal accomplishment (15.0%–77.1%).

In research comparing nurses from the ED, ICU, Nephrology Unit, and Oncology Unit in the United States, it was found that about one-third of the ED nurses experienced burnout and that the ICU nurses had the greatest frequency of burnout at 50% (13). Similarly, a study in Iran found that nurses working in emergency departments and intensive care units had considerably higher burnout mean values than those working in orthopaedic and dialysis units (16). Also, in the same study, with prevalence rates of 17% and 18.7%, respectively, it appeared that nurses working in the ED and ICU were more likely to experience burnout than nurses working in other departments due to the heavier workload and stress.

Factors associated with burnout among critical care nurses

Several studies have examined the sociodemographic and professional factors linked to burnout in critical care nurses. It has been discovered that gender influences impact burnout because research has shown that male nurses experience higher degrees of burnout (12,14). Males may be less likely to communicate their distress. Therefore, teaching them how to control their emotions may be beneficial. Yet, a Brazilian study discovered that female nurses experience greater burnout than male nurses (27). As it is impossible to overlook the impact of gender on burnout, there was a significant gender bias in the nursing profession. It has been noted that not having children and being unmarried are both

contributing factors to burnout (8,22,27). Nevertheless, this goes against other research that suggests that being married and having kids may lead to more obligations and demands on your time, leading to family work conflicts and raising your risk of tiredness (5,34).

Burnout was more prevalent among South Korean nurses with fewer than five years of clinical experience (22). According to the study, new nurses may still adjust to their job responsibilities, making them less equipped to handle stressful situations. This result is consistent with a study of critical care nurses in Brazil, which found that young nurses at the start of their careers were perceived as inexperienced and are still learning the procedures and experience managing critically ill patients in emergencies, all of which makes them more tense and prone to occupational stress, eventually possibly leading to burnout (27). Given that this study's burnout rates were greater among nurses in their twenties, younger and less experienced nurses should be given special attention as a particularly susceptible population (22,27).

Due to the greater workload and stress in the ED and ICU, there was a higher rate of occupational burnout among nurses than among nurses in other wards (16). According to a study by Saudi critical care nurses, those working in PICUs had greater rates of EE than those in ED and other critical units (21). Burnout may result from greater exposure to life-threatening situations when working in critical units with a severe workload (21) and from routinely caring for critically ill patients and being exposed to the potential for patient mortality (22).

The working hours in a nursing speciality depend on the country where the practices are located, the working environment, the shift pattern, and the working grade. In Malaysia, a typical workweek consists of between 36 and 40 hours, with rest days or other free time between shifts (23): short staffing, crises, and a high patient admittance rate necessitated nurses working longer shifts than usual. According to a study, nurses who work more than 30 hours per week are more likely to experience burnout (27). Then, a higher number of hours worked per week – more than 40 hours per week – was

linked to the same result of a high level of EE and DP in the burnout measure (20).

In addition, the quantity of patients that nurses are caring for demonstrates the excessive workload. The role conflict that was found to exist concerns staffing levels, rewards, and motivation. The ratio of patients to nurses impacts their ability to devote enough time to each patient and deliver quality nursing care (35). In Argentina, more than 80% of nurses tending to seriously ill patients exhibit moderate to high levels of burnout, which are strongly linked to a high nurse-to-patient ratio (29). Burnout is also associated with staffing, atmosphere, and enough resource availability (15,23). The work environment did not support the nurses' professional development or foster autonomy or a positive working relationship between the nursing and medical teams.

On the other hand, a previous study found a significant correlation between spiritual well-being and burnout among ICU nurses in South Korea. It was hypothesised that spiritual well-being aids the nurses in maintaining internal peace and psychological stability, which may buffer the effect of job-related stress on burnout, while higher levels of spiritual well-being were associated with lower levels of burnout (22).

CONCLUSION

This literature review researched burnout and its contributing factors among critical care nurses globally up to the year 2020. Burnout is a huge problem in the nursing industry. In conclusion, various sociodemographic and professional characteristics have been found to link factors to the prevalence rates of burnout among critical care nurses. Burnout is more common in critical care units because of the high levels of stress present there, particularly because of emotional weariness and a diminished sense of personal success.

It is still unclear, however, if the characteristics linked to burnout identified in this study were among the major issues facing the nursing profession, particularly among critical care nurses. Moreover, little poorly understood research on linked causes of burnout specifically targets critical care nurses. The literature search results on burnout among

critical care nurses and its associated factor needed to be more comprehensive to analyse the relationship between these two variables. More evidence about the issues would come from more research on burnout and its correlation.

Also, this literature review's findings revealed that critical care nurses may experience severe burnout, which could have an impact on the management of patient care. Hence, higher management should recognise that critical care nurses are experiencing burnout and comprehend the causes and effects of burnout in the critical care setting.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ACKNOWLEDGEMENT

The authors sincerely admire all participants and staff at the International Islamic University Malaysia (IIUM) Kulliyah of Nursing for their assistance, direction, and encouragement during this journey.

AUTHOR CONTRIBUTION

SNR participated in the review of pertinent literature, and NAA worked on the manuscript's finalisation and peer review before publication.

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