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LITERATURE REVIEW

Relation and effect of resilience on burnout in nurses: A literature review and meta-analysis

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Abstract

Aim: To study the relation between burnout and resilience and to identify the profile of nurses presenting this quality.

Background and Introduction: Healthcare professionals are subject to high rates of burnout. Resilience could be an important factor in preventing or alleviating this condition.

Methods: The PubMed, ProQuest, Scopus and ScienceDirect databases were consulted in February 2022 using the equation 'burnout AND resilience AND nurs*'. The inclusion criteria applied were that the texts should describe quantitative studies, be published in English or Spanish, in any year, and be directly related to the question considered. The meta-analysis was performed using StatsDirect statistical software.

Results: Analysis of the 29 studies shows that among the dimensions of burnout, nurses are especially prone to emotional exhaustion, and are less affected by depersonalisation and low personal accomplishment. Those who score highly for resilience tend to have longer service experience, acceptable salaries and less work overload. Meta-analysis reveals an inverse correlation between resilience and burnout ($r = -0.41$; $n = 2750$), exhaustion ($r = -0.27$; $n = 6966$) and depersonalisation ($r = -0.23$; $n = 6115$).

Conclusion: Many nurses present low levels of resilience and suffer from burnout syndrome. The application of programmes to enhance their resilience would help prevent burnout and optimise the potential to provide quality health care.

Implications for nursing and health policy: Resilience is inversely correlated with burnout, depersonalisation and emotional exhaustion. Accordingly, healthcare organisations should develop and implement evidence-based programmes to foster nurses' resilience and thus reduce their susceptibility to burnout.

KEYWORDS
Burnout, meta-analysis, nurses, prevalence, resilience, systematic review

INTRODUCTION

Burnout is characterised by emotional exhaustion (EE), defined as the sensation of emotional and physical fatigue caused by occupational stress; by depersonalisation (D), evidenced as a cynical, negative attitude towards other people; and by perceptions of low personal accomplishment (PA), that is, the feeling that personal achievements are few and unsatisfactory. In some work contexts, burnout can also affect physical health. Burnout is a psychological syndrome that mainly affects persons who work in contact with other people, and originates from continual contact with occupational stress (Ortega-Campos et al., 2020; Schaufeli et al., 2009).

Burnout is prevalent among healthcare personnel, especially nurses (Wood et al., 2017), provoking negative impacts on morale, health outcomes and security, and efficiency (Jun et al., 2021). Nurses are especially prone to burnout because of predisposing factors such as female gender, rotating shift work, deployment in particularly demanding areas of work (intensive care, oncology, etc.), limited experience and a precarious work environment (Woo et al., 2019). This syndrome affects healthcare professionals worldwide, and its prevalence has increased with the coronavirus pandemic, reaching 49% in the USA (Prasad et al., 2021) and 79% in the United Kingdom (Ferry et al., 2021). Consequences of burnout among nurses include the deterioration of patient care (through decreases in care quality and patient security), negative impacts on nurses' mental and physical health (in areas such as depression, insomnia and irritability) and institutional problems, with increased absenteeism and burnout-related sick leave (Dall´Ora et al., 2020; De la Fuente-Solana et al., 2020). Many studies of burnout draw attention to the importance of preventing its risk factors. In the field of healthcare, it would be very useful to develop and apply a basic nursing training programme focused on positive attitudes, emotional intelligence and techniques for coping with stress (Díaz-Ibañez et al., 2015; Membrive-Jiménez et al. 2020).

Resilience is the ability to cope with difficulty, trauma, catastrophe, threat or major stress. It is not a trait that one has or lacks, but a pattern of behaviour, thoughts and actions that can be learned and developed (Wei et al., 2019), and is apparent in ways like optimism, humour and self-efficacy (Thomas & Revell, 2016). Nurses' work is intimately related with people, disease and suffering, and for them resilience is a vitally important quality, alleviating the adverse effects of workplace stressors (Manomenidis et al., 2018) and making burnout syndrome less likely.

In view of the impact and prevalence of burnout, this syndrome constitutes a valuable area for research, for example to identify variables that may influence its incidence among nurses. As mentioned above, resilience can help protect nurses against stress, burnout and other negative consequences of their work. To our knowledge, no specific review or meta-analysis, focused on the relationship between burnout and resilience, has been undertaken previously. In response to this research gap, our study aim is to review the literature on the relationship between burnout and resilience, addressing these questions: (1) What is the relationship between resilience and each of the dimensions of burnout? (2) To what extent resilience have a mitigating effect on burnout in nurses? (3) What is the profile of nurses who present this characteristic? In short, our goals are to characterise the relationship between burnout syndrome and resilience among nurses.

METHODS

Design

This systematic review and meta-analysis is presented following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) recommendations (Page et al., 2021).

Search

In February 2022, an unrestricted data search was conducted in the PubMed, ProQuest, Scopus and ScienceDirect databases, using the following search equations: 'burnout AND resilience AND nurs*' in the title and abstract for Scopus and PubMed, and 'burnout AND resilience AND nurs*' in all fields for the other two. In addition, the descriptors were located in the Medical Subject Headings database.

The following inclusion criteria were applied: (a) quantitative studies on burnout syndrome and resilience in nurses; (b) published in English or Spanish any time. The exclusion criteria were: (a) studies that did not provide statistical data on burnout and resilience (mean values, prevalence or correlations); (b) studies that analysed mixed samples without isolating data for nurses.

Search outcomes

The text selection was carried out in three phases. First, the title and abstract were read. This was followed, first, by a full-text reading and then by a critical reading to assess possible methodological bias. Two investigators (ACG and AVS) worked independently in the process, and another (GACF) was consulted if any disagreement arose. The references from all the databases were imported into the Zotero reference manager and an inverse search was then performed.

Critical reading and evidence

In all cases, Oxford Centre for Evidence-Based Medicine (OCEBM) evidence levels were used (Howick, 2016). Risk of bias was evaluated using the 'Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)

recommendations. The studies were classified into three groups: low quality (0–7 items), intermediate quality (8–14 items) and high quality (15–22 items) (Von Elm et al., 2008).

Data collection

The study data were entered into a coding manual, classified qualitatively and analysed narratively. Data selection and quality evaluation were carried out by two researchers (ACG and AVS), and another (EIFS) calculated the Cohen´s kappa and intraclass correlation coefficients to confirm the reliability of the process.

The following study variables were considered:

- Publication data: author, publication year and country.
- Methodological variables: design, sample size, burnout measurement instrument, resilience measurement instrument.
- Reported prevalence of burnout and resilience and the correlation between them.

Analysis

A descriptive data analysis was carried out of each included study. A random-effects meta-analysis was performed using StatsDirect statistical software, to establish the correlation between resilience and each of the three dimensions of burnout. The Egger test was used to detect publication bias, and the I^2 measure was applied to determine heterogeneity. A sensitivity analysis was also performed.

RESULTS

Sample characteristics

The initial database search identified 1528 studies. After reading the titles and abstracts and applying the exclusion criteria, 170 studies remained. Duplicate were then removed, and a full-text reading was conducted of the remaining papers. Finally, 29 studies were selected for analysis (see Figure 1). In general, the participants described in these studies were female nurses working in hospital care units.

By type of study, one was a clinical trial (Hylton et al., 2021), one was quasi-experimental (Magtibay et al., 2017) and 27 were cross-sectional (Afshari et al., 2021; Alameddine et al., 2021; Arrogante-Maroto & Aparicio-Zaldivar-, 2017; Bernardeta-Bunga et al., 2019; Bum-Sung et al., 2018; Chana et al., 2015; Dordunoo et al., 2021; García et al., 2018; Guo et al., 2017; Guo et al., 2018; Hu et al., 2020; Jamebozorgi et al., 2022; Jose et al., 2020; Kelly et al., 2020; Kutluturkan et al., 2016; Lin et al., 2021; Majrabi et al., 2016; Mealer et al., 2012; Rees et al., 2019; Rivas et al., 2021; Rushton et al. 2015; Se-Jin & Doonam, 2016; Sukut et al., 2021; Zahednezhad et al., 2021; Zhang et al., 2021; Yang et al., 2018; Zou et al., 2016).

In most cases, the burnout measurement instrument used was the Maslach Burnout Inventory (MBI), but four studies used the 'Professional Quality of Life instrument' (Dordunoo et al. 2021; Lin et al., 2021; Ress et al., 2019; Sukut et al., 2021) and two used, the Copenhagen Psychosocial Questionnaire (Afshari et al., 2021; Alameddine et al., 2021). Most studies measured resilience with the 'Connor-Davidson Resilience Scale'. The largest sample was composed of 2014 nurses (Hu et al., 2020) and the smallest, 50 (Magitbay et al., 2017). Regarding the location of the study, 20.69% were conducted in China, 20.69% in the USA and 10.35% in each of Spain, Korea and Iran. 27.59% were of high quality, and the rest were considered intermediate in this respect. The characteristics of each study and the main results reported are shown in Supplementary Table 1.

Burnout prevalence and resilience

Many articles provided mean values for all three dimensions of burnout, with D ranging from 1.1 to 29.53, EE from 2.16 to 34.2 and PA from 2.18 to 40.63 (Arrogante et al., 2017; Guo et al., 2017; Majrabi et al., 2016; Mealer et al., 2012; Zahednezhad et al., 2021).

Guo (2019) reported the presence of severe burnout in 22% of the Australian nurses and in 9.6% of the Chinese nurses studied. Zhang et al. (2021) reported that 15% had high levels of burnout. Similar findings were described by Kutluturkan (2016) and Yang (2018), who recorded mean MBI scores of 49 and 61.59, respectively. The studies carried out during the COVID-19 pandemic reported moderate to high mean scores for burnout (Afshari et al., 2021; Jamebozorgi et al., 2022; Rivas et al., 2021).

Twenty-five studies observed that nurses who obtained high scores in resilience tended to be more experienced, earned salaries appropriate to their needs, suffered less overload, worked non-rotating shifts, had a higher education status and had a nuclear-style family. By contrast, Kelly & colleagues (2020) indicated a possible new area for research and debate, affirming that resilience was greater among nurses whose working conditions were objectively worse. Three studies reported that male nurses presented greater resilience than their female counterparts (Alameddine et al., 2021; Rivas et al., 2021; Zahednezhad et al., 2021).

Among studies that used the 'Connor-Davidson Resilience Scale', 10 stated the mean score obtained by the total sample, which ranged from 22.01 (Dordunoo et al., 2021) to 80.3 (Hylton et al., 2021).

Most studies observed an inverse correlation between resilience and burnout syndrome. Some also measured an inverse correlation with EE (Arrogante-Maroto et al., 2017; García et al., 2018; Rushton et al., 2015; Kutluturkan et al., 2016), while the correlation with PA, when detected, was positive (García et al., 2018; Hu et al., 2020).

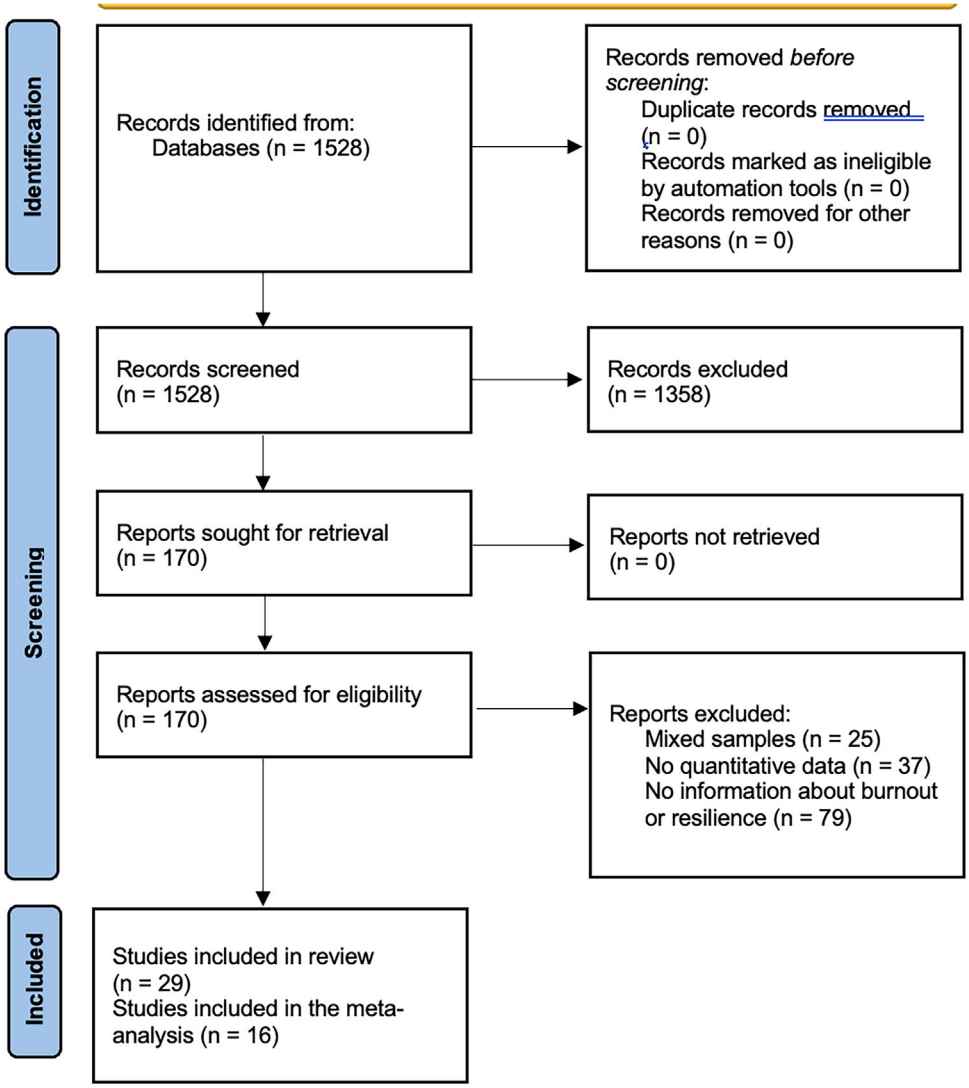

FIGURE 1 Study selection process.

Meta-analysis

The Egger test performed on the four meta-analyses revealed no sign of publication bias. Inter-study heterogeneity was high, at 93.6% in the correlation between resilience and burnout, 87.7% between resilience and EE, 58% between resilience and D, and 98.8% between resilience and PA.

For the meta-analysis of the relation between resilience and burnout, the total sample size was 2750 nurses, with $r = -0.41$ (95% CI, −0.53, −0.27). For the relation between resilience and EE, the sample size was 6966 nurses, with $r = -0.27$ (95% CI, −0.34, −0.20). For the relation between resilience and D, the sample size was 6115 nurses, with $r = -0.23$ (95% CI, −0.27, −0.19). Finally, for the relation between resilience and PA, the sample size was 5885 nurses and $r = 0.03$ (95% CI, −0.21, 0.27). The effect sizes between resilience and burnout, EE and D were statistically significant, showing that higher scores in resilience were indeed correlated with lower burnout, EE and D. The relation with PA was not significant (Figure 2).

DISCUSSION

Our results corroborate prior reports of high burnout among nurses (Cañadas-De la Fuente et al., 2018; Muñoz, 2017). According to one of the studies considered, 56% of paediatric intensive care staff suffered from burnout in at least one dimension (Rodríguez-Rey et al., 2019), and another reported that 38.5% of emergency nurses were at high risk (Cañadas-de la Fuente et al., 2018). These findings highlight the major presence of burnout in certain areas of healthcare, such as oncology, due to the special needs of patients and the characteristics of the work performed (Ortega-Campos et al. 2020).

The studies generally concur in reporting an inverse association between burnout and resilience, a relation that has also been observed elsewhere (Muñoz, 2017; Rodríguez-Rey et al., 2019).

The studies considered in our review describe diverse results for the prevalence of each burnout dimension. This variability, which has been reported previously (De la

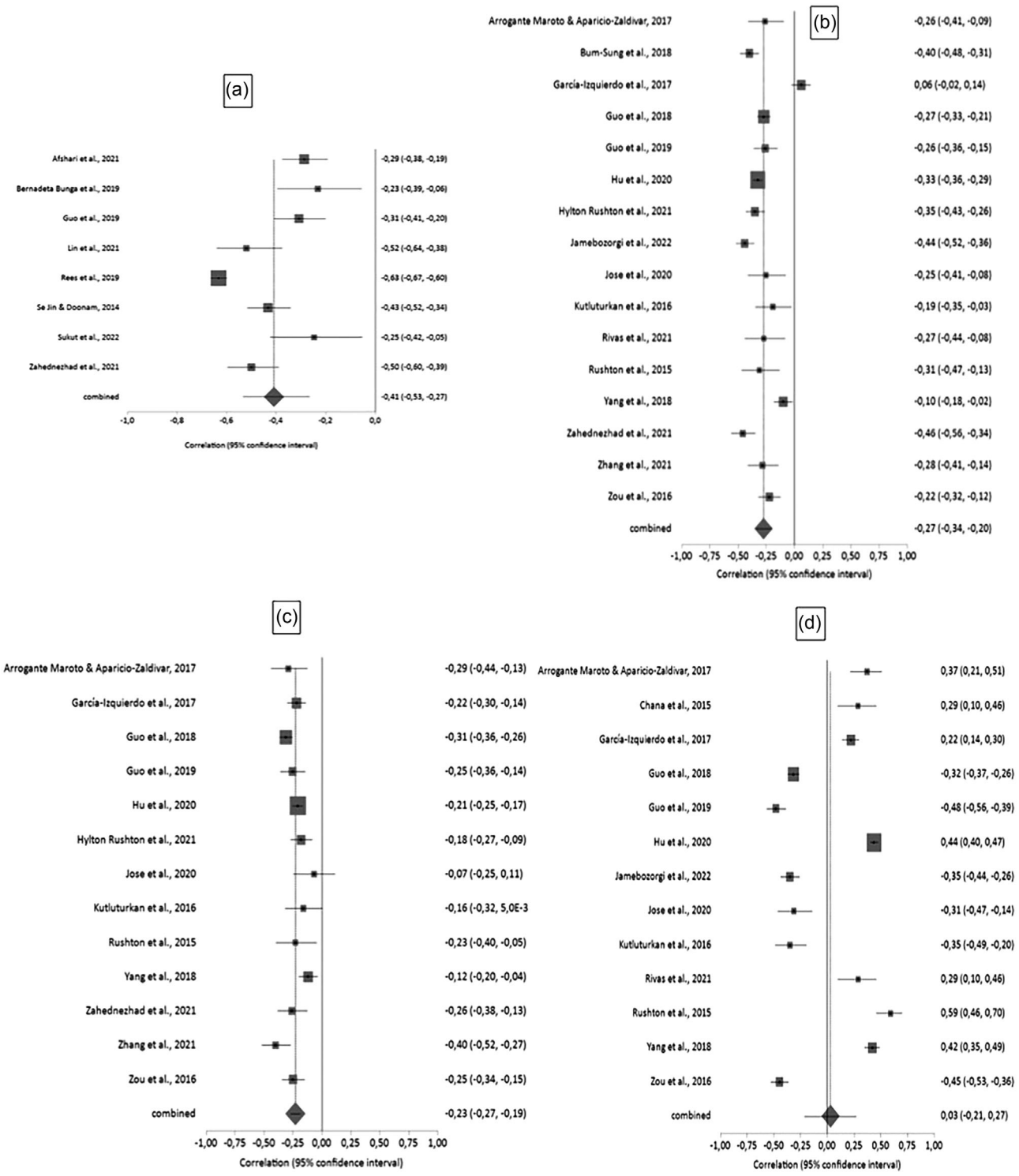

FIGURE 2 Forest plots of the correlation between resilience and burnout (a), emotional exhaustion (b), depersonalisation (c) and personal accomplishment (d).

Fuente-Solana et al., 2020; Albendín-García- et al., 2016), may be due to specific characteristics of the countries (or regions) in which the studies were conducted; it might also be explained by differences in the cut-off points used, which in some cases were those of the original MBI and in others were derived from its adaptation to another population type. Any or all of these factors might influence the recorded impact of the syndrome; every country's health system presents certain unique characteristics, regarding nurses' competencies, training, workload and salaries (Ortega-Campos et al., 2020). Another important factor, which is addressed in the most recent work published, is the need to care for patients with

COVID-19, an added responsibility that may aggravate the presence of burnout syndrome (Askari et al., 2021). In this respect, one study observed burnout in 48.6% of nurses caring for COVID-19 patients (Andlib et al., 2022).

With respect to the sociodemographic variables considered, our main findings are that nurses with a lighter workload and those whose primary motivation for working is not family support have greater resilience and therefore are at lower risk of burnout (Moon & Shin, 2018). In addition, younger nurses tend to be more highly motivated. This factor, together with the fact that the employment relation is often temporary, is reflected in lower levels of EE and D and better relationships with patients (Moon & Shin, 2018; Muñoz, 2017). Other studies, however, have associated resilience with age, concluding that older nurses are better equipped to manage stress, although their acquired experience in the service is a factor that may generate monotony and thus contribute to EE (Moon & Shin, 2018; Rodríguez-Rey et al., 2019).

In response to the increasing demands placed on nurses within the healthcare environment, it has been suggested that efforts should be made to reinforce their personal resilience in order to combat burnout (Purvis & Saylor, 2019). In this respect, numerous programmes have been launched to promote resilience among adults, thus enhancing self-efficacy and stress management and reducing anxiety, enabling participants to better understand and control negative and/or ineffective behaviour and attitudes (Foster et al., 2018). Other interventions have been based on mindfulness techniques, such as meditation, conscious communication and emotion management. One study reported that following participation in such a programme, 70.6% of nurses perceived situations differently and reacted in a more positive way, enjoying greater resilience, mindfulness and satisfaction with life, and hence less burnout and compassion fatigue (Albendín-García et al., 2021). Another study has reported good results with the Provider Resilience mobile application, which seeks to improve self-awareness regarding burnout and resilience, providing helpful messages, information and tools to improve resilience (Wood et al., 2017).

Limitations

The present study is subject to certain limitations. First, the studies were located in different countries, each with specific characteristics regarding work conditions, which may influence levels of burnout among nurses. Second, because not all the studies use the same scale for measuring burnout or resilience, they cannot always be compared exactly. Finally, our meta-analysis revealed high levels of heterogeneity, and so the results obtained should be considered with caution.

CONCLUSIONS

A significant proportion of nurses suffer or are at risk of burnout syndrome, possibly due to their low level of resilience. Therefore, it is essential to develop programmes to help nurses develop techniques for coping with difficult and stressful situations and to develop their emotional intelligence, thus reducing the prevalence of burnout.

IMPLICATIONS FOR NURSING POLICY

Our analysis shows that higher scores in resilience are correlated with lower levels of burnout, EE and D. Nurses with a lighter workload, with a higher educational status and with a nuclear-style family have greater resilience and therefore are less prone to burnout. Accordingly, it is essential for healthcare organisations to develop and implement programmes to foster resilience among nurses and thus reduce the prevalence of burnout.

AUTHORS CONTRIBUTION

Study design: GACDLF and EIDIFS; data collection: GACDLF, AVS and MBMC; data analysis: EIDlFS and LRB; study supervision: GACDLF and EIDIFS; manuscript writing: GACDLF, AVS and MJMJ; critical revisions for important intellectual content: GACDLF, EIDIFS and LRB.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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