| **RESEARCH ARTICLE**

An Extended Literature Review on Factors Linked to Occupational Stress among Nurses in the Emergency Department and its Impact on Job Effectiveness

Ashwaq Mobarak Saed Alblowi
Master of Emergency and Critical Care Nursing from the University of Belfast
Corresponding Author: Ashwaq Mobarak Saed Alblowi, **E-mail**: ashwaqalblowi@gmail.com

| **ABSTRACT**

Occupational stress among nurses, stemming from high work demands and limited empowerment, negatively impacts job satisfaction and performance, potentially compromising patient care and safety. The study aims to assess the factors linked to occupational stress among nurses in the emergency department and its impact on job effectiveness. This literature review explores factors influencing occupational stress in emergency room nurses, impacting safety, satisfaction, and retention. Strategies for managing stress in A&E settings are discussed, emphasizing mental wellbeing, psychological support, and organizational reforms. Studies highlight the profound effects of stress on nurses' quality of life and patient outcomes, underscoring the need for effective intervention and support systems in emergency departments. This analysis aimed to delve into factors contributing to occupational stress among ED staff and its impact on job performance while identifying potential resolutions. Through a comprehensive literature survey and critical examination, three significant themes emerged in this domain.

1. Introduction

The introduction to this study identifies occupational stress among Accident and Emergency (A&E) department nurses as a critical issue with significant consequences. Citing Basu, Yap, and Mason (2016), it frames occupational stress as the central focus, setting the stage for an in-depth exploration. The chapter aims to provide essential background and context, addressing key areas pertinent to understanding this issue.

1.1 Prevalence of Stress in Healthcare Settings

Firstly, it explores the prevalence of stress among healthcare workers globally and in the UK, highlighting its pervasive nature and substantial impact. Stress is defined as a physiological and psychological response to pressure, increasingly recognized for its detrimental effects when chronic or acute. The Health and Safety Executive (2020) data underscores its prevalence in the UK, with approximately 830,000 workers affected, leading to millions of lost working days annually. Specific to healthcare, stress is linked to high sickness absences within the NHS, costing hundreds of millions annually and threatening both staff health and healthcare service delivery.

1.2 Unique Stressors Faced by A&E Nurses

Secondly, the chapter delves into the unique stressors faced by A&E nurses, such as high workloads, traumatic experiences, and the added pressures of events like the COVID-19 pandemic. These factors contribute significantly to the stress levels of A&E staff,

potentially impacting their ability to provide effective care. The discussion touches on the psychological impact of trauma, the risk of violence or abuse from patients and families, and the broader systemic issues affecting workplace stress levels.

1.3 Impacts of Stress on Job Performance and Healthcare Outcomes

Thirdly, it addresses the impacts of stress on job performance and healthcare outcomes. Chronic stress in clinical settings often leads to burnout among healthcare professionals, characterized by emotional exhaustion and reduced job performance. The literature review highlights three critical impacts: compromised patient safety, reduced job satisfaction, and increased turnover rates among nurses. Studies, such as those by Rodrigues et al. (2017) and Panagioti et al. (2018), underscore the negative correlations between burnout and patient care quality, as well as job satisfaction levels among healthcare staff.

1.4 Current Approaches to Mitigate Stress

Fourthly, the chapter discusses current approaches to mitigate stress among healthcare workers, particularly within the NHS. It notes initiatives like increased funding for staff support services, including mental health resources and training programs. However, it also acknowledges challenges, such as the scale of the issue versus the resources allocated, suggesting a need for more targeted and evidence-based interventions. The importance of primary, secondary, and tertiary prevention strategies is highlighted, emphasizing the need for proactive measures to reduce stress risk factors and enhance resilience among healthcare workers.

1.5 Significance of the study:

This study is significant due to its focus on addressing occupational stress in A&E settings, which is crucial for both patient outcomes and the wellbeing of healthcare staff. Ensuring safe and effective care aligns with professional standards set by bodies like the NMC (2018) while complying with health and safety responsibilities underpins organizational obligations (UK Government, 1974). By adopting a secondary research approach, this study aims to provide a comprehensive understanding of stress factors in A&E, which is critical given the barriers and complexities of conducting primary research in this context. A literature review offers a systematic and rigorous approach to synthesizing existing knowledge, potentially influencing policy, research, and practice in healthcare settings more effectively than a single primary study could achieve.

1.6 Aims and objectives:

1- To provide an in-depth overview of the factors associated with occupational stress levels among those who work in ED departments.
2- To identify potential strategies to address occupational stress.

2. Methodology

2.1 Search strategy

The search strategy employed multiple frameworks and protocols to ensure rigor in identifying papers for review and integrating recommendations for enhancing specificity and sensitivity. Utilizing PubMed, CINAHL, and Google Scholar facilitated access to diverse literature, complemented by manual searches of reference lists. Employing a structured approach, keywords were systematically developed using Boolean operators and truncation to encompass synonyms and improve search sensitivity, aligning with methodologies advocated by Xiao and Watson (2019). Adhering to the PEO framework (population, exposure, outcome), the study focused on nurses in EDs as the population, stress as the exposure, and job performance as the outcome, thus refining search inputs for comprehensive retrieval of relevant studies.

2.2 Study selection

The next phase involved screening the initially retrieved papers to identify those relevant to the review. Following Siddaway et al.'s (2019) guidelines, this was done through a multi-phased process of screening, appraising, and deciding whether to include or exclude studies. Duplicates were first removed, followed by a review of titles to assess eligibility. Papers deemed irrelevant were excluded. The remaining papers underwent abstract review, and decisions were made on inclusion based on their alignment with the study's focus. Finally, full texts of the remaining studies were examined to make the final inclusion decisions. This process, mainly conducted by a single reviewer to maintain consistency, acknowledged potential biases (Uttley and Montgomery, 2017). To mitigate these biases, a set of predefined eligibility criteria (table 1) was applied systematically, as recommended by Xiao and Watson (2019), ensuring transparency and rigor in study selection.

Table 1: Eligibility criteria

| Inclusion criteria	Exclusion criteria
Published in peer review journal	Published prior to 2015
Primarily set in ED's	Primary population not representative of ED workers
Primary research, of quantitative, qualitative, or mixed methods approach	Secondary research, such as reviews or meta-analyses
Includes specific discussion of ethical conduct	Commentary or opinion pieces Grey literature, such as professional reports or guidelines
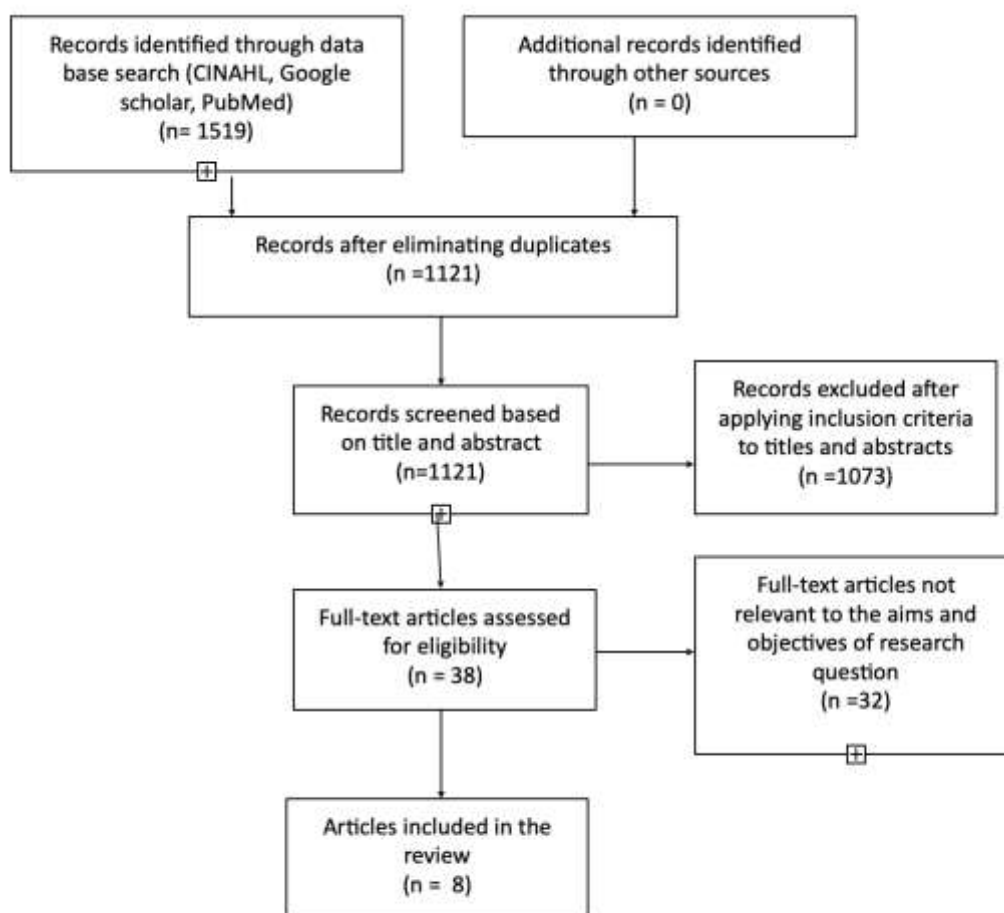
Figure 1: PRISMA concordant flow chart

The eight selected studies span multiple countries, enhancing the robustness of this literature review. This multinational approach mitigates potential biases associated with single-country studies, allowing for broader generalizability of findings across diverse geographic regions. Despite stringent date parameters and rigorous selection processes aimed at minimizing errors and biases,

no articles specifically addressing the topic within the Middle East were identified, possibly due to these search criteria or other selection factors.

2.3 Data extraction and synthesis

Once the papers were selected for inclusion in the review, they underwent a structured process of data extraction and synthesis. Initially, core descriptive data, including authorship, aims, methodology, participants, quality assessments, and limitations, were extracted into a table to facilitate comparison across studies and lay the foundation for data synthesis. This methodological step, as informed by Xiao and Watson (2019), aimed to organize information systematically, and it is documented in Table 2.2. Subsequently, a thematic analysis framework was employed to synthesize the collated data into a coherent narrative, drawing from approaches typically used for qualitative data analysis (Clarke and Braun, 2014). Adopting Braun and Clarke's (2006) six-stage process, themes were developed iteratively, ensuring alignment with the original data and enhancing the robustness and validity of the synthesis.

2.4 Critical appraisal processes

The critical appraisal process was integral not only for synthesizing data but also for assessing the quality of evidence underlying the identified themes (Petrou, Kwon, and Madan, 2018). Adopting a post-positivist approach to acknowledge and mitigate biases, the review utilized the Critical Appraisal Skills Programme (CASP) tools, chosen for their robustness in evaluating various research methodologies. Each paper underwent CASP analysis tailored to its design, ensuring thorough assessment and minimizing potential biases inherent in single-reviewer studies. This methodological rigor aimed to enhance the validity and reliability of the review's findings, aligning with frameworks and protocols integrated throughout the study design (Long, French, and Brooks, 2020; Uttley and Montgomery, 2017).

2.5 Ethical consideration:

The review emphasized ethical considerations in secondary research, ensuring all included studies had received ethical approval (Ganann, Ciliska, & Thomas, 2010; BPS, 2014). This approach aims to uphold standards of participant welfare and scientific rigor, addressing ethical concerns often overlooked in secondary research studies (Jol & Stommel, 2016).

Table 2: *Data extraction*

Citation/country	Study aim and type	Quality	Population	Limitations	Finding
Abraham et al., 2018 Australia	Describe and compare stressors across emergency departments (ED) Cross sectional descriptive study	Peer reviewed	n=146 ED nurses	No mention of statistical power	According to the findings of this study, Australian emergency department nurses describe a variety of beneficial behaviors for elderly patients and caregivers.
Basu et al., 2016 UK	To examine origins of occupational stress in ED Cross sectional survey	Peer reviewed	n=104 ED staff n=72 acute/ENT staff	No mention of effect size	ED responders reported reduced degrees of job control, managerial support, and participation in organizational transformation, but not work desire.
Duffy et al., 2015 Ireland	To examine ED nurses' experiences of traumatic stress Cross sectional survey	Peer reviewed	n=105 ED nurses	Does the method fit with the research question - would a qualitative approach have better suited?	In this study, Number of nurses faced traumatic stress during their duties in the emergency department
Howlett et al., 2015 Canada	To examine relationship between coping scales styles and burnout Cross sectional survey	Peer reviewed	n=616 ED staff	Non-causal design, but the authors seek to infer a causal relationship	The examine nurses feel burnout
Hunsaker et al., 2015 USA	To examine prevalence and correlates of stress and burnout Non-experimental, descriptive, and predictive study	Peer reviewed	n=284 ED nurses	Very low response rate (28%) could indicate selection biases	The numerous nurses feel nauseous and burnout during their service in the ED

Jose et al., 2020 North India	To assess burnout and resilience in ED nurses in response to COVID pandemic Cross sectional survey	Peer reviewed	n=120 ED nurses	Possible single site bias	Pandemic was severe in the North India; They have resilience towards their patient
Rozo et al., 2017 USA	To explore the lived experience of ED nurses regarding stress and burnout Qualitative study	Peer reviewed	n=5 ED nurses	Sampling approach enhanced chances of bias Misunderstanding of data saturation within a phenomenological study	In USA, nurses feel nauseous and burnout during their visit to ED
An et al., 2020 China	To examine the psychological impact of COVID-19 pandemic on ED nurses Cross sectional survey	Peer reviewed	n=1103 ED nurses	Causal impact of pandemic hard to gauge within a cross sectional design; pre-post measurements or longitudinal work would give more rigour.	

3. Results

3.1 The selected papers

The review examined eight primary research papers focusing on stress and burnout among emergency department (ED) nurses. These studies covered various aspects of ED healthcare professionals' experiences. The studies included were Abraham et al., 2018, which compared morale, stress, and coping strategies between staff in different-sized EDs. Basu et al., 2016, examined the sources of occupational stress specific to ED environments. Duffy et al., 2015, which investigated secondary traumatic stress among ED nurses. Howlett et al., 2015, explored burnout among ED healthcare professionals and its association with coping styles. Hunsaker et al., 2015, studied factors influencing compassion fatigue, burnout, and compassion satisfaction among ED nurses. Jose et al., 2020, focused on burnout and resilience during the COVID-19 pandemic among frontline ED nurses. Rozo et al., 2017, analyzed situational factors contributing to burnout among ED nurses. An et al., 2020, investigated depression prevalence and its impact on the quality of life among frontline ED nurses during the COVID-19 outbreak. Of these studies, seven employed quantitative cross-sectional designs, while one utilized a qualitative approach (Rozo et al., 2017). The quantitative studies collectively involved 2,484 ED clinicians from multiple countries, including China, Canada, Ireland, Australia, the UK, India, and the USA. This selection provides a comprehensive overview of recent research into stress and burnout among ED healthcare professionals, highlighting diverse perspectives and global insights into this critical area of study.

3.2 Approaches of the Selected Studies

The first study to be addressed is that of An et al. (2020), who aimed to examine the mental health impact on frontline medical staff working in emergency departments having to respond to the COVID-19 pandemic. Given how the pandemic has in the past year placed even further strain on the working lives of those in emergency medicine, this would appear to be a timely, and given the immediacy of this pandemic, novel piece of research that has the potential to be applied to real-time clinical issues within emergency departments at this time. In order to meet the aims of the work, An et al. (2020) utilized a cross-sectional design to

examine the levels of depression and quality of life within their sample of n=1103 emergency department nurses, with data collected during five days in March 2020.

Next to be discussed is the work of Abraham et al. (2018), who had the objective of examining the perceptions of emergency department staff about their working environments and contrasting the perceptions of differing-sized departments for these staff. In order to do this, Abraham et al. (2018) recruited n=146 nurses and doctors to take part in a survey which consisted of a battery of three questionnaires, which examined (i) the working environment, (ii) was of coping, and (iii) workplace stressors. Within the data analysis phase of the study, descriptive statistics were central to the reporting of Abraham et al.'s (2018; p.377) findings, although they also utilized some inferential statistics such as Mann Whitney U tests and chi-square tests. Unlike the work of An et al. (2020), however, there is no mention by Abraham et al. (2018) as to whether assumptions of normality were tested and responded to with regard to the collected data, which is a relatively simple cross-sectional study, which is a concern.

The third study to be included in this review is Basu et al. (2016). Whereas the two studies above examined the impact of working in an emergency department on the mental health of staff (An et al., 2020) or examined the levels of stress and coping in these staff Abraham et al. (2018), the work of Basu et al. (2016) sought to investigate the origins of this impact and did so via developing, implementing and evaluating a specific questionnaire they had designed to do just that. This questionnaire sought to examine participants' perceptions of stress across a triumvirate of dimensions, which included (i) demand-control-support, (ii) effort-reward, and (iii) organizational justice (Basu et al., 2016). To do this, a total of n=104 emergency department clinicians were recruited and completed the measure. As a comparative element of the study, Basu et al. (2016) also recruited n=72 staff from another service within the hospital where they were based (ear, nose and throat, and neurology directorates were utilized), against which the responses of the emergency department-based participants could be compared. The authors utilized logistic regression analyses to conduct most of their data analysis procedures. When comparing emergency department with non-emergency department participant scores, an inferential test was used, but the authors failed to report which test and whether a data screening test such as a Kolmogorov–Smirnov test was used prior to this.

The focus shall now shift to discussing the study of Duffy et al. (2015). Whereas the work of Basu et al. (2016) examined more organizational-based triggers for stress within emergency department clinicians, Duffy et al. (2015) examined a specific psychological experience and sought to examine its prevalence and impact. This was that of secondary traumatic stress, which is a consequence of stress felt when wanting to help a traumatized or suffering individual (Duffy et al., 2015). Across three emergency departments, the authors recruited a total of n=117 nurses who completed the secondary traumatic stress scale (STSS). At the end of completing the STSS, participants were also provided with a scale developed by the authors related to stress-relieving strategies, which consisted of dichotomous responses. Pearson's Chi-square, ANOVA, Pearson's correlation, and Binary Logistic Regression were inferential tests employed by the authors within the data analysis phase of this study.

The fifth study to be addressed is the work of Howlett et al. (2015). Whereas Duffy et al. (2015), for example, examined issues of coping with stress as a secondary outcome within their process of analysis, the work of Howlett et al. (2015) explicitly focuses on coping mechanisms as it is the central area of interest. In order to do this, Howlett et al. (2015) aimed to examine the relationship between coping styles and burnout in emergency department staff across multiple emergency departments of varying sizes and locations within Canada. Perhaps as a result of the multi-site nature of this study, a large sample size of n=616 participants was recruited to this study, which asked them to complete a small battery of questionnaires such as the Maslach Burnout Inventory for Human Services Survey (MBI), and the Coping Inventory for Stressful Situations (CISS), as well as a specially designed demographic survey. The core approach to data analysis consisted of linear regression. The authors used a simple linear regression model to develop a multivariate model via stepwise regression analysis (Howlett et al. 2015).

Study six is the work completed by Hunsaker et al. (2015). The purpose of this study was twofold. Firstly, Hunsaker et al. (2015) sought to examine the prevalence of burnout, compassion fatigue, and, conversely, compassion satisfaction within emergency department nurses. Secondly, the authors wanted to determine if demographic or work-related components could be used to explain the development of levels of burnout, compassion fatigue, and compassion satisfaction within this specific population (Hunsaker et al., 2015; p.186). In order to achieve this, this research team reported in the abstract that it mailed the data collection surveys to n=1000 participants, who consisted of emergency department nurses across the USA (Hunsaker et al., 2015). This total of n=1000 is reported repeatedly through the methods section of this work, yet this is a bit misleading, mainly because the abstract does not mention what is reported in the results section of this work, which is that only n=284 responses were garnered from this process. The authors used descriptive statistics and inferential tests such as Pearson r correlation, t-tests, and one-way ANOVA to seek to answer their research question.

The previous quantitatively designed study included in this review is Jose et al. (2020; pp.1081-1088). Whereas the work previously mentioned, such as that of Hunsaker et al. (2015) and Howlett et al. (2015), examined the dual aspects of burnout and resilience, the work of Jose et al. (2020) does likewise. The point of difference regarding this study is that Jose et al. (2020), like the first study discussed above by An et al. (2020), seek to locate this within the context of the COVID-19 pandemic. As with all other studies listed above, a cross-sectional design was utilized in order to meet the goals of the study, and Jose et al. (2020) recruited a total of n=120 participants to take part in this work, and unlike the other studies listed above, who adopted a convenience or purposive approach to sampling their participants, the work of Jose et al. (2020) elected to use a simple random sampling method to do so, adding a little to its sense of rigor. As with the work of Howlett et al. (2015), the MBI was the primary measure used, in concretion with the Connor–Davidson Resilience Scale-25 (CD-RISC) (Jose et al. 2020). Descriptive statistics were used inferential tests such as Pearson correlation tests and the Chi-square tests (Jose et al., 2020; p.1084).

The only qualitative piece of work to be included is Rozo et al. (2017), which sought to provide a deeper and richer understanding of the issues and factors associated with burnout among emergency department nurses. In order to achieve this goal, the authors adopted a phenomenological approach with purposive sampling and recruited a sample of n=5 nurses to take part in this work. It was judged by Rozo et al. (2017) that data saturation - the point at which participant responses were repetitive and no new information was gathered - was achieved within the fourth and fifth interviews, which is why they stopped recruiting at a level of n=5. Semi-structured interviews were the primary form of data collection. The interviewer digitally recorded these and subsequently transcribed them verbatim in preparation for the data analysis phase of the study (Rozo et al. 2017). Interviewer field notes were also utilized as data triangulation within the study. The approach to data analysis adopted a hermeneutical phenomenological stance (Rozo et al.2017), enabling lower-level codes to be developed and then combined and transformed into higher-level themes. These themes were then narratively reported within the study, with verbatim quotes from participants being used to highlight the core meaning of each theme.

4. Discussion

The findings from the reviewed studies underscore the exceptionally high pressure experienced by emergency department (ED) nurses, a critical consideration for local healthcare services, particularly against the backdrop of the NHS's recent challenges during successive waves of the COVID-19 pandemic. Jose et al. (2020) highlighted that ED staff faced significantly elevated pressures during the pandemic, with An et al. (2020) further revealing widespread depressive symptoms among nurses. These findings are alarming not only for the well-being of healthcare professionals but also for the potential impact on patient care quality. Importantly, similar stressors were evident in studies predating the pandemic, as exemplified by Rozo et al. (2017), indicating persistent challenges within ED environments that demand urgent attention.

Moreover, quantitative studies like Duffy et al. (2015) and Howlett et al. (2015) align with these conclusions, demonstrating how the intense pressures of ED work contribute to negative psychological outcomes such as burnout and maladaptive coping behaviors. These insights highlight the critical need for comprehensive support systems tailored to address the unique stressors faced by ED nurses. Specifically, interventions targeting stress management and coping strategies, as suggested by Howlett et al. (2015), could mitigate the prevalence of burnout by promoting task-oriented coping mechanisms over emotionally-driven responses.

Beyond individual-focused interventions, the literature also advocates for systemic changes within healthcare organizations to alleviate workplace stress. Abraham et al. (2018) emphasized the pivotal role of organizational support and resources in buffering the impacts of job-related stressors. Similarly, Hunsaker et al. (2015) underscored systemic issues contributing to burnout, indicating a need for enhanced support structures and management practices within ED settings. Basu et al. (2016) further advocated for internal interventions aimed at improving management practices and perceived job control among ED staff, suggesting organizational changes as crucial strategies for reducing stress levels.

While the studies collectively call for proactive measures to support ED nurses, including psychological assistance and organizational reforms, empirical evidence supporting the efficacy of these interventions remains limited. Future research should prioritize rigorous evaluation of intervention programs tailored to ED environments, aiming to validate their effectiveness in enhancing staff resilience and mitigating burnout. Ultimately, addressing the multifaceted challenges outlined in the literature is essential not only for safeguarding the well-being of ED nurses but also for optimizing patient care outcomes amidst ongoing healthcare demands.

5. Strengths and limitations

The review encompassed a rigorous appraisal of eight primary studies, emphasizing both their strengths and limitations. The study's methodologies were underpinned by established frameworks and protocols, drawing on influential works such as Xiao and Watson (2019) and Petrou et al. (2018), which aimed to minimize systematic biases during the literature search and selection processes. Similarly, employing CASP tools and thematic analysis techniques, as outlined by Braun and Clarke (2006), ensured a structured approach to data extraction and analysis, further reducing the risk of unconscious biases influencing the findings (Davies, 2019). However, it's important to note that all critical stages, from study searching to data analysis, were conducted by a single researcher, potentially introducing biases such as reliability issues and confirmation biases in the study identification phase (Uttley and Montgomery, 2017). These considerations underscore the need for a cautious interpretation of the review's outcomes.

6. Conclusion and recommendations

This literature review aimed to comprehensively explore occupational stress levels among emergency department (ED) staff, along with their impacts on job performance and strategies for addressing these issues. Through a systematic analysis of the literature, three primary themes emerged: 1) the significant mental health pressures faced by ED nurses, 2) the critical need for emotional and psychological support, and 3) the necessity for systemic and organizational changes within ED settings. These themes provide valuable insights for both researchers and practitioners in the field. For researchers, the review highlights a need for more robust studies, including randomized controlled trials (RCTs) and longitudinal research, to evaluate the effectiveness of stress-reducing interventions in EDs. Additionally, there is a call for studies focusing on regions such as the Kingdom of Saudi Arabia (KSA) and the Middle East to ensure broader applicability of findings. Future research should also address the identified themes to further enhance understanding and support for ED staff.

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