

How to Cite:

Almunif, S. K., Alanazi, A. M. A., Al Maani, M. M., & Alotaibai, A. M. (2023). Evaluating occupational stress and coping mechanisms among prehospital emergency nurses: Review. *International Journal of Health Sciences*, 7(S1), 3908–3920.
<https://doi.org/10.53730/ijhs.v7nS1.15459>

Evaluating occupational stress and coping mechanisms among prehospital emergency nurses: Review

Sultan Kadisi Almunif

KSA, National Guard Health Affairs

Awad Mohammed Awad Alanazi

KSA, National Guard Health Affairs

Mohammed Merza Al Maani

KSA, National Guard Health Affairs

Abdullah Marzouq Alotaibai

KSA, National Guard Health Affairs

Abstract--Background: Occupational stress, particularly among prehospital emergency nurses, significantly impacts health outcomes and job performance. Factors such as high job demands, workplace violence, and inadequate training contribute to elevated stress levels, affecting mental health and employee retention. **Methods:** A systematic review was conducted using databases including PubMed, WOS, Enfispo, Cochrane, and LILACS to 2022. The search strategy focused on keywords related to "occupational stress" in nursing, specifically targeting prehospital care settings. A total of 14 studies were analyzed to categorize stressors and protective factors affecting emergency nurses. **Results:** The review identified five primary categories of stressors: management-related, patient care, interpersonal dynamics, environmental conditions, and personal factors. Notably, exposure to workplace violence and the emotional toll of pediatric emergencies were significant contributors to stress. Conversely, strong peer support and adequate managerial resources emerged as key protective factors. The findings suggest that 25% to 65% of prehospital nurses experience high levels of stress, largely influenced by their work environment and organizational responses. **Conclusion:** The study underscores the urgent need for improved training and support systems for prehospital emergency nurses to mitigate stress and enhance job satisfaction. Implementing mindfulness practices and addressing workplace violence can

significantly improve the mental well-being of healthcare professionals. Collaborative strategies involving management and staff are essential for creating a safer and more supportive work environment.

Keywords---Occupational stress, prehospital emergency care, workplace violence, nursing, stress management.

1. Introduction

The concept of stress, introduced by Hans Selye in 1936 and leading to the formulation of the general adaptation syndrome, has gained significant relevance in occupational settings and employee health [1,2]. It manifests as a detrimental physical and emotional reaction when job demands misalign with the skills and needs of workers and is now recognized as a primary contributor to the rising prevalence of infectious and cardiovascular diseases, as well as heightened mental and physical disorders [3-6]. In 1986, Lazarus and Folkman [7] further elaborated that stress pertains to the dynamic relationship between an individual and their environment, with the critical factor being the personal assessment of each circumstance. In this context, the authors presented two concepts: cognitive evaluation and coping techniques [8]. Coping is described as the capacity to use cognitive and behavioral strategies to address external and/or internal pressures that surpass an individual's available resources. Lazarus and Launier posited that an experience might be assessed as a loss, danger, or challenge, and it is the individual's judgment of the event that triggers certain coping responses [9].

Stress has been recognized as a primary factor contributing to turnover in the nursing profession, significantly influencing 50% of sick leaves and resulting in diminished performance, absenteeism, heightened instances of workplace violence, and increased turnover among various professionals [10,11]. Certain occupational characteristics are crucial in the reintegration process following a mental health-related sick leave. Factors such as elevated job demands, diminished job control, restricted promotion opportunities, and significant job strain negatively impact the return to work [12,13]. The Community Programme for Employment and Social Solidarity, PROGRESS (2007–2013), has funded research and publications aimed at addressing the obstacles faced by employees returning from mental health-related leave [14].

Currently, over 28% of health workers experience stress, resulting in an estimated annual health expenditure of between 150 and 372 million euros due to its health repercussions. In the specific context of nurses employed as ambulance personnel within the prehospital emergency system, the unique characteristics of the service contribute to the prevalence of numerous potential stressors, thereby heightening the likelihood of experiencing elevated levels of work-related stress [10,14]. Furthermore, this issue may be exacerbated by extraordinary circumstances, such as terrorist attacks or health crises like the COVID-19 pandemic [15,16].

The primary principle of the prehospital emergency service is to function as a swift and effective resource, necessitating coordinated interventions tailored to the

unique attributes of each scenario, as determined by prior evaluation [17]. However, the high specificity of this service does not consistently align with standardized training for professionals, and in certain areas, entry into the emergency ambulance unit is attainable with merely a university nursing degree. In Spain, an Emergency Nurse is required to possess a university degree in Nursing; however, a master's degree in emergency nursing or specialties in community nursing or medical-surgical nursing is not obligatory [18].

Conversely, in countries such as Sweden, Finland, Belgium, Thailand, Malaysia, Indonesia, and Brazil, nurses deliver prehospital services, establishing a novel domain for university nursing education and training [19-22]. Specifically, in Sweden, national regulations mandate that an ambulance be staffed with at least one registered nurse, who may be required to obtain an additional one-year post-graduate specialist nursing diploma based on local stipulations [23,24]. In Croatia, Estonia, and Lithuania, this training is ongoing, while in the Czech Republic, Germany, Ireland, Latvia, the Netherlands, and the United Kingdom, nurses must participate in annual courses. In Belgium, skills are assessed every five years [25,26]. However, in countries like Iran, emergency medical technicians (EMTs) predominantly deliver prehospital emergency care, and due to a shortage of EMTs, nurses are also incorporated as prehospital care providers. The intricacy of the practice and its requirements may elucidate why nursing professionals in the ambulance service advocate for periodic renewal training, as they believe the role necessitates a specialized level of education, encompassing psycho-emotional competencies and tools [21,27].

Insufficient training results in the majority of ambulance nurses lacking the requisite knowledge to assess or commence suitable treatment, as well as to manage scenarios involving severely affected patients, necessitating communication with family members while concurrently providing emotional support. This phenomenon has been linked to the notion that nurses with extended careers (greater experience) encounter diminished levels of stress [28,29].

Prior research has emphasized that the pediatric patient is the primary source of stress, indicating that related critical situations contribute to as much as 41% of the stress encountered by prehospital emergency personnel [30-32]. Other significant factors associated with stress include working overtime and the presence (or absence) of a support network including colleagues and superiors [31,33]. Concerning violence as a stressor observed by prehospital emergency nurses, a 2018 study including 25 research underscored the prevalent occurrence of this element in their everyday responsibilities [34]. A substantial correlation exists between exposure to violence, emotional tiredness, depersonalization, and diminished personal achievement, indicating that heightened exposure to verbal abuse results in employee fatigue, decreased productivity, and ultimately, turnover [35]. In this context, instances of verbal and physical violence are notable, including 34.5% of professionals who experienced a physical attack, as shown by research done in Spain [36,37]. It has been proposed that female gender constitutes a risk factor only for ambulance personnel and emergency nurses, hence increasing the probability of experiencing various forms of violence,

thus making the potential for intimidation, sexual harassment, or sexual assault more pertinent [34,38].

Occupational health services are crucial for attaining optimal biopsychosocial well-being for employees. Nevertheless, there is a significant deficiency in understanding the many stressors encountered by nurses in prehospital emergency services regularly [39-42]. It is pertinent to address this issue to create a conducive and optimal work environment that ensures safety and enhances the quality of care. In this context, the concept of stress coping, defined as the endeavor to manage specific demands that necessitate effort, challenge, or sacrifice, is instrumental in alleviating stressful situations [43-45].

To our knowledge, no prior evaluations exist regarding the stress levels of ambulance emergency nurses. The primary aim of this study was to evaluate the personal and occupational variables affecting the stress levels of nurses in prehospital care. The primary purpose was to ascertain the correlation among perceived stress levels, professional experience, and knowledge levels.

2. Methods

The investigation was conducted in the PubMed, WOS, Enfispo, Cochrane, and LILACS databases to 2022. MeSH descriptors pertinent to the issue were found to formulate the search equation and were merged using parentheses and Boolean operators. The resultant search technique was: “occupational stress” AND nurs* AND (“prehospital care” OR emergenc* OR ambulance OR “first aid” OR “work experience”)

3. Occupational stress

Occupational stress is a pervasive issue that professionals encounter daily, particularly within the realm of prehospital emergencies, where nursing is notably impacted by perceived stress levels. The gravity of this concern is underscored by the prevalence rates reported in numerous studies, ranging from 25% to 65%, predominantly indicating stress in the resistance phase, with a significant proportion experiencing exhaustion [46-51]. To address the initial objective of this review, 14 studies were examined, categorizing the stressors experienced by prehospital nurses into five distinct groups: management, patient care, interpersonal stressors, environmental stressors, and personal factors [52,53]. The violence recognized by experts has been a significant aspect of this study, serving as a catalyst for stress and the sense of danger. Conversely, the primary protective factors stem from peer support and resources provided by health service managers, although specific individual interventions, such as mindfulness or positive coping therapies, have also proven effective. The findings from this review offer valuable insights for prehospital nurses and enable the correlation of these factors with other nursing specialties within the hospital environment [54-56].

The scarcity of resources outside a clinical center is seen as a significant element influencing stress in health care management, potentially doubling stress levels. The prevalence of psychological distress among ambulance staff is influenced not

only by exposure to traumatic events but also by the organizational and administrative responses [57-59]. A notable impact of the inadequate assistance reported by nurses from their superiors during the execution of their responsibilities has also been noted [53]. It has been proposed that stress, particularly psychological stress or perceived violence, significantly impacts nurses' work engagement. Enhanced attention from occupational health services could mitigate the adverse effects of these experiences by promoting elevated self-efficacy. For instance, by providing access to formal psychological support, ambulance personnel could receive adequate care to address issues such as stress, confidentiality breaches, inappropriate therapies, ineffective return-to-work processes, isolation, or workplace stigmatization [59].

The individualized treatment of each patient, the patient's health status, and proximity to death are the patient-centered aspects that most significantly impact nurses' stress levels. Cardiovascular, gynecological, and pediatric emergencies represent the most challenging scenarios, particularly emphasizing musculoskeletal trauma, respiratory distress, and cardiac issues in children [60]. The stress level correlates with diminished patient safety, primarily due to patient identification, insufficient experience, family member reactions, and the awareness of potential deterioration. Research indicates that ambulance nurses require enhanced knowledge and education concerning pediatric care [61,62].

Likewise, managing exceptional patients, suicide incidents, workplace violence, and other traumatic occurrences have been identified as direct contributors to stress among emergency nurses [63]. Instances of violence are exacerbated, as shown by some research, when the patient and/or their companions are under the influence of substances or when there is a discrepancy in the perception of the patient's injuries between healthcare professionals and family members, further intensified by delays in ambulance arrival [21,54]. In such cases when the patient exhibits uncontrollable behavior (becoming verbally and/or physically hostile), professionals sense insecurity, leading to discussions over whether the age and experience of the professional serve as protective factors or mitigators in these circumstances [23,28,38]. Issues with superiors have been positively correlated with recurrent confrontations, such as verbal aggressiveness, vigilance, and other forms of aggression, which may be considered variables contributing to interpersonal conflict and the inability to mitigate escalations of violence [26].

The environmental factors include working in unhealthy conditions, insufficient physical facilities, or high-risk situations for the health provider's safety, as well as night shift duties [58]. A prior review identified the work environment as a contributor to elevated stress levels, adversely affecting nurse retention rates in emergency departments. Environmental stressors encompassed insufficient staffing, elevated responsibilities, excessive workloads, and overcrowding. Conversely, the detrimental impact of night shifts in nursing has been emphasized, potentially contributing to cancer and work-family conflicts [63-66].

Regarding personal health, diminished mood, and inadequate sleep quality emerge as significant stresses. Research on the ramifications of prolonged stress among nurses frequently indicates the prevalence of sleep disturbances and insomnia. Conversely, emotional exhaustion, a lack of precise patient information,

and insufficient knowledge of patient assessment or appropriate interventions exacerbate the stress levels of prehospital nurses, particularly in intricate scenarios, thereby heightening the likelihood of experiencing both physical and psychological issues, such as anxiety, somatic pain, deterioration of interpersonal relationships, or an increase in cardiovascular ailments [64]. In this context, the promotion of continuous education is imperative, as nurses with less advanced training in the ambulance system may face greater challenges in delivering healthcare compared to their more competent counterparts. A curriculum for a specialist nurse must accurately represent the requisite knowledge, expertise, and skills pertinent to the specific professional environment. Treatment guidelines and operational protocols, along with collaboration with more proficient colleagues, are workplace-based strategies that enhance safe patient care and bolster the capacity to effectively manage critical incidents [53].

This analysis emphasizes that the primary preventive measures for stress reduction include collaborative interventions between managers and peers in the service sector. Nonetheless, these methods are not entirely successful; thus, professionals experiencing stress should seek assistance via activities such as mindfulness, spiritual coping, massage, and psychiatric therapy.

4. Psychotherapeutic Interventions

Thorough psychiatric examinations must include the examination of extended working hours and elevated stress levels, particularly in the context of work-family conflicts, health concerns, emotional difficulties, suicidal thoughts, and prior psychological interventions. Marital status perceived familial and social support and feeling of coherence must also be evaluated. Furthermore, it is essential to take into account additional variables such as the age at which one enters the profession, duration of service, and rank. A thorough psychiatric assessment, encompassing a clinical interview and the application of validated evaluation tools, should be conducted regularly to assist individuals in accurately recognizing external stressors. In this context, the limited accessibility highlighted by nurses warrants attention, as such interventions are rarely advocated by management [34,46].

5. Mindfulness

Research has shown that mindfulness treatments positively influence the alleviation of stress experienced by nurses, particularly in situations involving peer conflict and a high volume of interventions during the workday. It is noteworthy to mention the enhancement achieved in the particular instance of prehospital emergency treatment for children [54,56].

Positive spiritual coping correlated with reduced occupational stress ($\beta = 0.373$). This intervention has demonstrated significant statistical evidence in alleviating occupational stress across all subscales, enhancing self-awareness, and fostering the pursuit of peace and internal harmony. It primarily encompasses spiritual assistance, managing challenging circumstances, and the use of cognitive and behavioral strategies via a constructive mindset to overcome vulnerabilities [27].

6. Massage Therapy

While primarily utilized for pain management, it has also been emphasized in stress treatment due to its capacity to enhance patient relaxation, improve concentration, and stabilize the immune system ($p = 0.001$) [54]. Nevertheless, although massage proved advantageous against specific stressors (such as patient mortality and conflicts with managers and colleagues), it did not yield significant evidence in addressing stress overall. Consequently, while this intervention merits consideration for addressing stress in prehospital care, as evidenced by various studies examining it as a standalone approach, it should be advocated as a supplementary procedure, akin to other modalities such as music therapy.

The primary drawback of the current study is the scarcity of prior research addressing work-related stress from the viewpoint of prehospital emergency nurses. Only one of the chosen papers was a clinical trial; the others were observational and qualitative research. Additionally, some study was omitted due to the absence of data disaggregated by health professionals, hence complicating the acquisition of a comprehensive understanding of the issue within the nursing domain. Future studies should focus on analyzing stress variables only from the perspective of nurses, distinguishing the nursing profession from other roles within the ambulance service [7].

This review's information is derived from a diverse international environment, indicating potential diversity in these parameters across different national health systems. A weakness of this study is that owing to the insufficient number of papers, the variables examined, and the varying measurement scales, the researchers deemed a meta-analysis as an inappropriate method for synthesizing the data [8].

The scientists used a review strategy to mitigate bias throughout the study and employed the GRADE tool to evaluate the quality of the evidence, preventing any publication bias and subsequent overestimation of the findings. Acknowledgment of selection bias is necessary, since some studies in the study may have been overlooked or eliminated for not meeting the specified criteria. All identified research was retrieved; any study exhibiting methodological bias was eliminated. Finally, acknowledge a potential researcher bias, since expectations and views may have influenced the outcomes.

This research primarily contributes by delineating the key characteristics influencing prehospital emergency systems that exacerbate stress among nurses, to mitigate these risks and enhance the mental health of healthcare personnel. The ideal approach involves collaboration between health services managers and nurses to effectively address stressors, by Lazarus' theory. However, a review indicated that most studies focus solely on certain work stressors and outcomes, neglecting the emergency nurse's perception of the stressor. According to Lazarus, coping strategies can be employed to improve the stressful situation, either by altering individual actions or by modifying the environment. Acquiring information or devising alternatives and direct actions are effective strategies for proactive coping. Nursing managers must recognize instances when nurses' conventional strategies become insufficient for effective coping, and it is crucial to

acknowledge that they may play a pivotal role in assisting them in this process [44,45].

The organization may assist with various techniques and procedures categorized under cultural transformations and organizational redesign. Cultural intervention is necessary to eliminate the stigma surrounding the pursuit of assistance for work-related stress. This may indicate that the service must arrange personnel to manage weariness and emotional processes. Consequently, emergency managers in hospitals and prehospital settings may alleviate worker stress by reducing workplace expectations and enhancing the work environment. Reducing stress enhances and preserves staff health, hence elevating the quality of care delivered to patients [59].

7. Conclusions

Given the nature of prehospital emergencies, nurses will inevitably encounter several potentially hazardous and stressful conditions. Five categories have been identified based on the personal attributes of nurses, environmental stressors, managerial factors, interpersonal stressors, and patient characteristics. The rise in the impression of work-related stress was similarly correlated with the violence experienced during service. Conversely, the amount of experience and knowledge exhibited a variety of perspectives on their influence on stress levels.

To counteract aggressiveness, several solutions exist, with the management of the patient's clinical condition and their social milieu being the most successful, alongside the implementation of national programs to mitigate violence against healthcare professionals. Enhancing safety in various interventions conducted by the emergency team necessitates a trustful rapport among colleagues, as well as collaboration with more experienced and knowledgeable specialists, particularly when nursing personnel exhibit inadequate training.

Ultimately, supplying the necessary resources to ambulances and personnel is crucial to prevent professionals from experiencing a sense of diminished control, particularly during difficult interventions, thus managing the environmental component effectively. Additionally, the implementation of sufficient rest intervals and the appropriateness of the task might be included.

This research advocates that stress management treatments for healthcare professionals might significantly impact health policy by addressing resource allocation and environmental issues that affect staff stress levels. Furthermore, equipping employees with psychosocial skills to enhance self-awareness and self-care also assigns them the duty of managing stress. This enables communal awareness to ultimately be the primary factor that diminishes the prevalence of stress.

References

1. Nogareda S. Fisiología del estrés. NTP 355. Barcelona: centro Nacional de Condiciones de Trabajo. Instituto Nacional de Seguridad e Higiene en el Trabajo; 1994.

2. Pérez-Valdecantos D, Caballero-García A, Del Castillo-Sanz T, Bello HJ, Roche E, Córdova A. Stress salivary biomarkers variation during the work day in emergencies in healthcare professionals. *Int J Environ Res Public Health*. 2021;18(8):3937.
3. Mirzaei A, Mozaffari N, Habibi Soola A. Corrigendum to «Occupational stress and its relationship with spiritual coping among emergency department nurses and emergency medical services staff» [*Int. Emergency Nurs*. 62 (2022) 101170]. *Int Emerg Nurs*. 2022;(64):101187.
4. de Quirós-Aragón MB. Evaluación del estrés laboral y burnout en los servicios de urgencia extrahospitalaria. *Int J Clin Health Psychol*. 2007;7(2):323–335.
5. Araújo AF, Bampi LN, Cabral CC, Queiroz RS, Calasans LHB, Vaz TS. Occupational stress of nurses from the mobile emergency care service. *Rev Bras Enferm*. 2020;73:e20180898.
6. Rajabi F, Jahangiri M, Molaeifar H, Honarbakhsh M, Farhadi P. Occupational stress among nurses and pre-hospital emergency staff: application of fuzzy analytic hierarchy process (FAHP) method. *EXCLI J*. 2018;17:808–824.
7. Lazarus S, Folkman S. Estrés y procesos cognitivos. Biblioteca de Psicología, Psiquiatría y Salud. Universidad; 1986.
8. Lazarus RS, Launier R. Stress-related transactions between person and environment. In: Pervin LA, Lewis M, editors. *Perspectives in Interactional Psychology*. New York: Plenum; 1978:287–327.
9. Rodríguez Campuzano ML, Ocampo-Juarez IY, Nava-Quiroz CN. Relación entre valoración de una situación y capacidad para enfrentarla. *Summa Psicológica UST*. 2009;6(1):25–41.
10. Portero de la Cruz S, Cebrino J, Herruzo J, Vaquero-Abellán M. A multicenter study into burnout, perceived stress, job satisfaction, coping strategies, and general health among emergency department nursing staff. *J Clin Med*. 2020;9(4):1007.
11. González-Martínez A. Prevención de Riesgos Laborales en Servicios de Urgencias Prehospitalarias. Master project. Alicante, Spain: Universidad Miguel Hernández; 2016.
12. EU-OSHA. Return to Work after sick leave due to mental health problems; 2020.
13. Figueredo JM, García-Ael C, Gragnano A, Topa G. Well-Being at Work after Return to Work (RTW): a Systematic Review. *Int J Environ Res Public Health*. 2020;17(20):7490.
14. Official Journal of the European Union. Decision No 1672/2006/EC of the European Parliament and of the Council of 24 October 2006 establishing a Community Programme for Employment and Social Solidarity — progress.
15. García-Iglesias JJ, Gómez-Salgado J, Martín-Pereira J, et al. Impact of SARS-CoV-2 (Covid-19) on the mental health of healthcare professionals: a systematic review. *Rev Esp Salud Publica*. 2020;94:e202007088.
16. Cano Vindel A. Repercusiones psicopatológicas de los atentados del 11.M en Madrid. *Clínica y Salud*. 2004;15(3):293–304.
17. Barroeta Urquiza J, Boada Bravo N Los servicios de emergencia y urgencias médicas extrahospitalarias en España. Mensor: Madrid; 2011.
18. SUMMA 112. ¿Cómo trabajar en el SUMMA 112? SUMMA 112; 2019.
19. Olsson M, Svensson A, Andersson H, et al. Educational intervention in triage with the Swedish triage scale RETTS®, with focus on specialist nurse

- students in ambulance and emergency care - A cross-sectional study. *Int Emerg Nurs.* 2022;63:101194.
20. Ribeiro LB, Silveira CP, Castanheira CHC. Nurses' roles in mobile prehospital care services in Brazil: integrative review. *J Nurs UFPE Line.* 2015;9(8):8882–8889.
 21. Dadashzadeh A, Rahmani A, Hassankhani H, Boyle M, Mohammadi E, Campbell S. Iranian pre-hospital emergency care nurses' strategies to manage workplace violence: a descriptive qualitative study. *J Nurs Manag.* 2019;27(6):1190–1199.
 22. Forsell L, Forsberg A, Kisch A, Rantala A. Specialist ambulance nurses' perceptions of nursing: a phenomenographic study. *Int J Environ Res Public Health.* 2020;17(14):5018.
 23. Wihlborg J, Edgren G, Johansson A, Sivberg B. The desired competence of the Swedish ambulance nurse according to the professionals—a Delphi study. *Int Emerg Nurs.* 2014;22(3):127–133.
 24. Zero N. Wellbeing recovery: what should summer support programmes look like for schoolchildren this year?. *Children.* 2021 Mar 15.
 25. Bos N, Krol M, Veenvliet C, Plass AM. Ambulance care in Europe. Organization and practices of ambulance services in 14 European countries. Utrecht, The Netherlands: NIVEL; 2015.
 26. van der Velden PG, Bosmans MW, van der Meulen E. Predictors of workplace violence among ambulance personnel: a longitudinal study. *Nurs Open.* 2015;3(2):90–98.
 27. Mirzaei A, Mozaffari N, Habibi Soola A. Occupational stress and its relationship with spiritual coping among emergency department nurses and emergency medical services staff. *Int Emerg Nurs.* 2022;62:101170.
 28. Bohström D, Carlström E, Sjöström N. Managing stress in prehospital care: strategies used by ambulance nurses. *Int Emerg Nurs.* 2017;32:28–33.
 29. James A. Perceptions of stress in British ambulance personnel. *Work Stress.* 1988;2(4):319–326.
 30. Sterud T, Hem E, Lau B, Ekeberg Ø. A comparison of general and ambulance specific stressors: predictors of job satisfaction and health problems in a nationwide 38 one-year follow-up study of Norwegian ambulance personnel. *J Occup Med Toxicol Lond Engl.* 2011;6:10.
 31. Sterud T, Hem E, Ekeberg Ø, Lau B. Occupational stressors and its organizational and individual correlates: a nationwide study of Norwegian ambulance personnel. *BMC Emerg Med.* 2008;8(1):16.
 32. Boudreaux E, Mandry C. Sources of stress among emergency medical technicians (Part I): what does the research say? *Prehospital Disaster Med.* 1996;11(4):296–301.
 33. Van der Ploeg E. Acute and chronic job stressors among ambulance personnel: predictors of health symptoms. *Occup Environ Med.* 2003;90001:40i–46.
 34. Maguire BJ, O'Meara P, O'Neill BJ, Brightwell R. Violence against emergency medical services personnel: a systematic review of the literature. *Am J Ind Med.* 2018;61(2):167–180.
 35. Alameddine M, Kazzi A, El-Jardali F, Dimassi H, Maalouf S. Occupational violence at Lebanese emergency departments: prevalence, characteristics and associated factors. *J Occupa Health.* 2011;53:455–464.

36. Bernaldo-De-Quirós M, Piccini AT, Gómez MM, Cerdeira JC. Psychological consequences of aggression in pre-hospital emergency care: cross sectional survey. *Int J Nurs Stud.* 2015;52(1):260–270.
37. Gómez-Gutiérrez MM, Bernaldo-de-Quirós M, Piccini AT, Cerdeira JC. Posttraumatic stress symptomatology in pre-hospital emergency care professionals assaulted by patients and/or relatives: importance of severity and experience of the aggression. *J Interpers Violence.* 2016;31(2):339–354.
38. Soravia LM, Schwab S, Walther S, Müller T. Rescuers at Risk: posttraumatic stress symptoms among police officers, fire fighters, ambulance personnel, and emergency and psychiatric nurses. *Front Psychiatry.* 2021;11:602064.
39. Ministerio de Sanidad y Política Social. Orden SAS/1348/2009, de 6 de mayo, por la que se aprueba y publica el programa formativo de la especialidad de Enfermería del Trabajo; 2009. 44685–44696.
40. Corbelle Álvarez JM. La Enfermería del Trabajo, una especialidad reciente, una Profesión de siempre. *Med Segur Trab.* 2009;55(215):10–11.
41. Romero Saldaña M, Moreno Pimentel AG, Santos Posada A. Enfermería del Trabajo: competencia y experiencia para alcanzar la seguridad, la salud y el bienestar de la población laboral. *Enferm Clín.* 2019;29(6):376–380.
42. Amezcua M. 1909-2009 Primer siglo de historia del Colegio de Enfermería de Alicante, por José Antonio Ávila Olivares. *Temperamentvm.* 2022;18.
43. Afshari A, Borzou SR, Shamsaei F, Mohammadi E, Tapak L. Emergency medical service providers' perception of health-threatening stressors in emergency missions: a qualitative study. *Ethiop J Health Sci.* 2021;31(3):517–524.
44. Hendel T, Fish M, Aboudi S. Strategies used by hospital nurses to cope with a national crisis: a manager's perspective. *Int Nurs Rev.* 2000;47(4):224–231.
45. Vicente V, Jansson J, Wikström M, Danehorn E, Rubenson Wahlin R. Prehospital Emergency Nurses' coping strategies associated to traumatic experiences. *Int Emerg Nurs.* 2021;59:101083.
46. Page MJ, McKenzie JE, Bossuyt PM, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ.* 2021;372:n71.
47. Jordan Z, Lockwood C, Munn Z, Aromataris E. The updated Joanna Briggs Institute model of evidence-based healthcare. *Int J Evid Based Healthcare.* 2019;17(1):58–71.
48. Moola S, Munn Z, Tufanaru C, et al. Chapter 7: systematic reviews of etiology and risk. In: Aromataris E, Munn Z, editors. *JBIManual for Evidence Synthesis.* JBI;2020.
49. Quigley JM, Thompson JC, Halfpenny NJ, Scott DA. Critical appraisal of nonrandomized studies—a review of recommended and commonly used tools. *Journal of Evaluation in Clinical Practice.* 2019 Feb;25(1):44–52.
50. Lockwood C, Munn Z, Porritt K. Qualitative research synthesis: methodological guidance for systematic reviewers utilizing meta-aggregation. *Int J Evid Based Healthc.* 2015;13(3):179–187.
51. Aisling M, Aisling D, David C. An assessment of psychological need in emergency medical staff in the northern health and social care trust area. *Ulster Med J.* 2016;85(2):92–98.
52. Guise JM, Hansen M, O'Brien K, et al. Emergency medical services responders' perceptions of the effect of stress and anxiety on patient safety in the out-of-hospital emergency care of children: a qualitative study. *BMJ Open.* 2017;7(2):e014057.

53. Carvalho AEL, Frazão I, Silva DMR, Andrade MS, Vasconcelos SC, Aquino JM. Stress of nursing professionals working in pre-hospital care. *Rev Bras Enferm.* 2020;73:e20180660.
54. Mahdizadeh M, Jaberi AA, Bonabi TN. Massage therapy in management of occupational stress in emergency medical services staffs: a randomized controlled trial. *Int J Ther Massage Bodyw.* 2019;12(1):16–22.
55. Khazaei A, Esmaeili M, Navab E. The most and least stressful prehospital emergencies from emergency medical technicians' view point; a cross-sectional study. *Arch Acad Emerg Med.* 2019;7(1):e20.
56. Westphal M, Bingisser MB, Feng T, et al. Protective benefits of mindfulness in emergency room personnel. *J Affect Disord.* 2015;175:79–85.
57. Klosiewicz T, Zalewski R, Dąbrowski M, et al. Emergency healthcare providers perception of workplace dangers in the Polish emergency medical service: a multi-centre survey study. *Disaster Emerg Med J.* 2019;4(4):166–172.
58. McDermid F, Peters K. Factors contributing to high turnover rates of emergency nurses: a review of the literature. *Aust Crit Care.* 2020;33(4):390–396.
59. Lawn S, Roberts L, Willis E, Couzner L, Mohammadi L, Goble E. The effects of emergency medical service work on the psychological, physical, and social well-being of ambulance personnel: a systematic review of qualitative research. *BMC Psychiatry.* 2020;20(1):348.
60. Li N, Zhang L, Xiao G, Chen ZJ, Lu Q. Effects of organizational commitment, job satisfaction and workplace violence on turnover intention of emergency nurses: A cross-sectional study. *International journal of nursing practice.* 2020 Dec;26(6):e12854.
61. Poljak A, Tveith J, Ragneskog H. Nursing in the prehospital emergency care – first link in the chain of caring. *Nordic J Nurs Res.* 2006;26(1):48–51.
62. Gentil RC, Ramos LH, Whitaker IY. Nurses' training in prehospital care. *Rev Lat Am Enfermagem.* 2008;16(2):192–197.
63. Gómez-Urquiza JL, De la Fuente-Solana EI, Albendín-García L, Vargas-Pecino C, Ortega-Campos EM, Canadas-De la Fuente GA. Prevalence of burnout syndrome in emergency nurses: A meta-analysis. *Critical care nurse.* 2017 Oct 1;37(5):e1-9.
64. Grochowska A, Gawron A, Bodys-Cupak I. Stress-inducing factors vs. the risk of occupational burnout in the work of nurses and paramedics. *Int J Environ Res Public Health.* 2022;19(9):5539.
65. Gómez-Salgado J, Fagundo-Rivera J, Ortega-Moreno M, Allande-Cussó R, Ayuso-Murillo D, Ruiz-Frutos C. Night work and breast cancer risk in nurses: multifactorial risk analysis. *Cancers.* 2021;13(6):1470.
66. Fagundo-Rivera J, Gómez-Salgado J, García-Iglesias JJ, Allande-Cussó R, Ortega-Moreno M, Ruiz-Frutos C. Work, family and nurses perception about their own health: relationship with breast cancer and shift work. *Rev Esp Salud Publica.* 2021;95:e202106078.

تقييم الضغط الوظيفي وآليات التكيف بين ممرضي الطوارئ في الرعاية ما قبل المستشفى: مراجعة الملخص

الخلفية: يؤثر الضغط الوظيفي، خاصة بين ممرضي الطوارئ في الرعاية ما قبل المستشفى، بشكل كبير على النتائج الصحية وأداء العمل. تشمل العوامل المساهمة في ارتفاع مستويات الضغط متطلبات العمل العالية، العنف في مكان العمل، والتدريب غير الكافي، مما يؤثر على الصحة النفسية واحتفاظ الموظفين.

المنهجية: أجريت مراجعة منهجية باستخدام قواعد بيانات مثل PubMed وWOS وEnfispo وCochrane وLILACS في الفترة من 2022. ركزت استراتيجية البحث على الكلمات المفتاحية المتعلقة بـ"الضغط الوظيفي" في التمريض، مع التركيز بشكل خاص على بيئات الرعاية ما قبل المستشفى. تم تحليل 14 دراسة لتصنيف العوامل المسببة للضغط والعوامل الوقائية التي تؤثر على ممرضي الطوارئ.

النتائج: حددت المراجعة خمسة تصنيفات رئيسية للضغوط: المتعلقة بالإدارة، رعاية المرضى، الديناميكيات الشخصية، الظروف البيئية، والعوامل الشخصية. كان التعرض للعنف في مكان العمل والتأثير العاطفي لحالات الطوارئ للأطفال من بين العوامل الرئيسية المساهمة في الضغط. على العكس من ذلك، ظهر الدعم القوي من الزملاء وتوفير الموارد الإدارية الكافية كعوامل وقائية رئيسية. تشير النتائج إلى أن ما بين 25% إلى 65% من ممرضي الرعاية ما قبل المستشفى يعانون من مستويات عالية من الضغط، وذلك بسبب بيئة العمل واستجابات المنظمات.

الاستنتاج: تؤكد الدراسة الحاجة الملحة لتحسين برامج التدريب ونظم الدعم لممرضي الطوارئ في الرعاية ما قبل المستشفى لتخفيف الضغط وزيادة رضاهم الوظيفي. يمكن أن تُحسن ممارسات اليقظة الذهنية ومعالجة العنف في مكان العمل بشكل كبير من الصحة النفسية للعاملين في مجال الرعاية الصحية. تُعد الاستراتيجيات التعاونية التي تشمل الإدارة والموظفين أساسية لإنشاء بيئة عمل أكثر أمانًا ودعمًا.

الكلمات المفتاحية: الضغط الوظيفي، الرعاية الطارئة ما قبل المستشفى، العنف في مكان العمل، التمريض، إدارة الضغط.