

Implementation of Resilience Training Programs for Burnout Reduction in Healthcare Professionals: A Literature Review

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Abstract: Burnout is a significant occupational health issue among healthcare professionals, driven by excessive workloads, emotional demands, and challenging work environments. Prolonged burnout can negatively affect psychological well-being, job satisfaction, work performance, and healthcare quality. This literature review aimed to examine the effectiveness of resilience training programs in reducing burnout among healthcare professionals. The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Relevant studies were retrieved from Scopus, PubMed, ScienceDirect, and Google Scholar. Inclusion criteria covered English-language studies published between 2021 and 2025 that examined resilience training interventions and burnout among healthcare professionals. Twenty eligible articles were analyzed using narrative synthesis. Findings showed that mindfulness-based interventions, emotional intelligence training, resilience-focused education, and digital resilience programs improved resilience and coping abilities while reducing burnout symptoms. Organizational support, leadership, and workplace environment also influenced intervention effectiveness. However, variations in program design, duration, and implementation contributed to differences in outcomes. Overall, resilience training is an effective strategy for reducing burnout and improving psychological well-being. Integrating resilience interventions with organizational support may provide a more sustainable approach to burnout prevention among healthcare professionals.

Keywords: Burnout; Healthcare professionals; Occupational stress; Psychological resilience; Resilience training

Introduction

Burnout is a psychological syndrome resulting from chronic occupational stress and prolonged work demands without adequate recovery. It is characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, which can negatively affect psychological well-being, job satisfaction, and professional performance. Burnout has become a major concern among healthcare professionals because they are frequently exposed to high workloads, emotional pressures, complex clinical responsibilities, and demanding work environments.

In recent years, burnout has been widely reported among healthcare professionals worldwide, with several studies indicating prevalence rates of up to 70% in certain healthcare settings (Juanamasta et al., 2024). Healthcare workers, including nurses, physicians, and other clinical staff, are required to provide continuous patient care, make critical decisions, and manage emotionally challenging situations. These demands often increase occupational stress and the risk of burnout. Furthermore, healthcare professionals are expected to provide not only clinical services but also emotional support and effective communication with patients and their families, which can intensify psychological strain (Efil et al., 2022). High workloads,

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time pressure, staffing shortages, routine tasks, and complex teamwork have also been identified as significant contributors to burnout (Assir et al., 2025). Consequently, burnout affects not only the well-being of healthcare professionals but also organizational performance, staff retention, and the quality and safety of patient care.

Recent studies have highlighted the importance of resilience training programs as effective interventions for reducing burnout and improving psychological well-being among healthcare professionals. Resilience-based interventions are designed to strengthen individuals' ability to adapt to occupational stress, enhance emotional regulation, and develop effective coping strategies in demanding healthcare environments. Psychological interventions have been shown to significantly improve resilience among nurses and contribute to better mental health outcomes (Han et al., 2024). Similarly, resilience-promoting interventions, including digital and face-to-face training programs, have demonstrated positive effects on resilience and stress management capacities among healthcare workers (Yu et al., 2024). In addition, resilience interventions implemented in healthcare settings have been associated with improved psychological well-being, enhanced professional quality of life, and reduced work-related stress (Unjai et al., 2024). These findings suggest that resilience training programs can serve as valuable strategies for mitigating burnout and supporting the overall well-being of healthcare professionals.

To address this growing concern, resilience training programs have emerged as promising interventions for strengthening healthcare professionals' capacity to cope with occupational stress and maintain psychological well-being. These programs typically focus on enhancing resilience, emotional regulation, stress management, mindfulness, and adaptive coping strategies. Although numerous studies have examined the implementation of resilience training programs in healthcare settings, the effectiveness and influencing factors vary across contexts. Therefore, this literature review aims to examine the implementation of resilience training programs and evaluate their effectiveness in reducing burnout among healthcare professionals.

One promising approach is resilience training. Resilience refers to an individual's ability to adapt positively to adversity, recover from stressful experiences, and maintain effective functioning in challenging situations. Individuals with higher resilience are more capable of managing workplace stress, maintaining emotional stability, and demonstrating optimism and adaptability in the face of professional challenges (Page et al., 2021). Conversely, inadequate resilience may increase vulnerability to

psychological distress, fatigue, burnout, and decreased work performance (Mulyani, 2017). Consequently, resilience has become an important protective factor against burnout among healthcare professionals. The importance of strengthening adaptive skills, problem-solving abilities, and resilience in facing complex challenges has also been emphasized in various educational and behavioral studies (Irdalisa et al., 2024).

Recent studies have highlighted the effectiveness of resilience training programs in strengthening psychological resilience and reducing burnout symptoms among healthcare workers. Psychological interventions designed to enhance resilience have been shown to improve mental well-being and coping abilities (Han et al., 2024). Similarly, resilience-promoting interventions have demonstrated positive effects on stress management and emotional regulation among healthcare professionals (Yu et al., 2024). Furthermore, resilience-focused programs implemented in healthcare settings have been associated with improved professional quality of life and reduced work-related stress (Unjai et al., 2024). Research has also shown that the development of critical thinking, problem-solving skills, and adaptive learning strategies can strengthen an individual's capacity to respond effectively to challenges and stressful situations (Han et al., 2024; Sawyer et al., 2023). These findings suggest that resilience training programs may serve as valuable interventions for mitigating burnout and supporting healthcare professionals' well-being.

Method

This study employed a narrative literature review to examine nurse burnout and the effectiveness of resilience training programs. A PRISMA-inspired flow diagram was used to guide the study selection process. A comprehensive literature search was conducted across four electronic databases, including Scopus, ScienceDirect, ProQuest, and SAGE, covering publications from 2021 to 2026. The search strategy applied Boolean operators with combinations of keywords such as ("nurse burnout" OR "burnout among nurses"), ("resilience training" OR "resilience program" OR "intervention"), and ("effect" OR "impact" OR "outcome") to identify relevant empirical studies.

The eligibility criteria included peer-reviewed articles published in English between 2021 and 2026, focusing on nurse populations and addressing burnout and/or resilience training interventions, with full-text availability. Studies were excluded if they were non-research articles (e.g., editorials or commentaries), did not involve nurses, were not relevant to the research topic, or lacked full-text access. The study selection

process followed four stages: identification, screening, eligibility, and inclusion. A total of 7,500 records were initially identified, and after removing 250 duplicates, 7,250 records remained for title and abstract screening. Of these, 7,101 records were excluded due to irrelevance. The remaining 149 articles were assessed for full-text eligibility, of which 134 were excluded based on predefined criteria, resulting in 20 studies included in the final review, with a total of 8,942 participants.

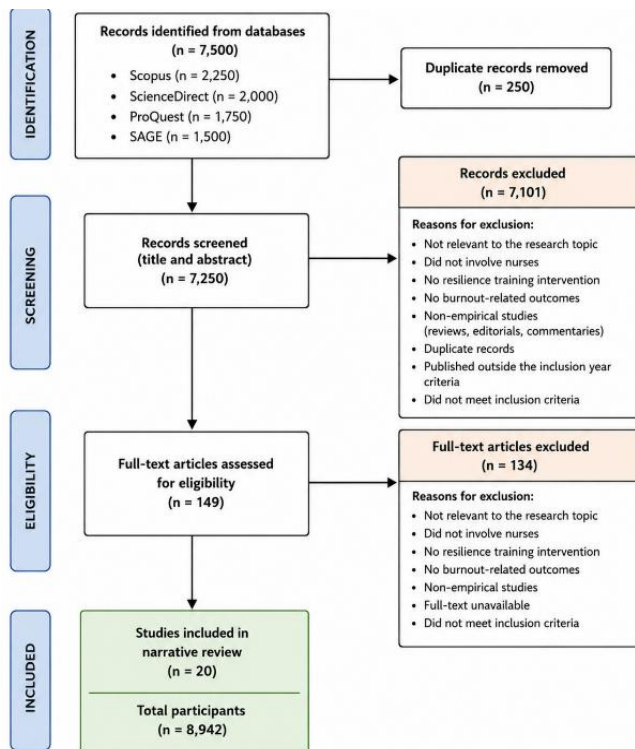


Figure 1. PRISMA flow diagram of study selection

The included studies were categorized into two groups: intervention studies (e.g., randomized controlled trials and quasi-experimental designs) to evaluate the effectiveness of resilience training programs, and observational studies (e.g., cross-sectional designs) to identify factors associated with nurse burnout. This classification enabled a clearer distinction between causal effects and associated factors. The methodological quality of the included studies was assessed using the checklist developed by the Joanna Briggs Institute, adjusted according to each study design. Each study was evaluated in terms of methodological rigor, validity, and potential bias, and subsequently categorized into high, moderate, or low quality.

The included studies were categorized into two groups: intervention studies (e.g., randomized controlled trials, quasi-experimental studies, and pre-post intervention designs) that evaluated the implementation and effectiveness of resilience training

programs, and observational studies (e.g., cross-sectional and cohort studies) that examined factors associated with burnout and resilience among healthcare professionals. This classification facilitated a clearer understanding of both the effectiveness of resilience training interventions and the contextual factors influencing burnout outcomes.

The methodological quality of the included studies was assessed using the Joanna Briggs Institute (JBI) critical appraisal tools, with the appropriate checklist selected according to each study design. Each study was evaluated based on methodological rigor, validity, reliability, and potential sources of bias. The quality of the studies was then categorized as high, moderate, or low.

Data were analyzed using a descriptive narrative synthesis approach. Findings were organized according to study design, characteristics of resilience training programs, participant groups, implementation strategies, and reported outcomes. Comparisons were conducted across studies to identify common patterns, effectiveness of interventions, key success factors, and existing research gaps related to the implementation of resilience training programs for burnout reduction among healthcare professionals.

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Result and Discussion

Based on the literature search and study selection process conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, a total of 20 articles met the inclusion criteria and were included in this review. The selected studies comprised randomized controlled trials, quasi-experimental studies, pre-post intervention studies, cross-sectional studies, cohort studies, and systematic reviews that examined the implementation and effectiveness of resilience training programs for burnout reduction among healthcare professionals.

The included studies were conducted in various healthcare settings and involved diverse groups of healthcare professionals, including nurses, physicians, allied health personnel, and multidisciplinary healthcare teams. These studies provided evidence regarding the

role of resilience training interventions in enhancing psychological resilience, improving coping strategies, strengthening emotional regulation, reducing occupational stress, and mitigating burnout symptoms. In addition, several studies explored organizational and individual factors that influence the successful implementation of resilience training programs in healthcare environments.

Overall, the findings indicate that resilience training programs have the potential to improve psychological well-being and reduce burnout among healthcare professionals when implemented through structured, evidence-based approaches. The characteristics and key findings of the selected studies are summarized in the following table.

Table 1. Characteristics and Main Findings of Studies on Resilience Training Programs for Burnout Reduction Among Healthcare Professionals

Author(s) and Year	Country	Study Design	Participants	Intervention/Focus	Main Findings
Mealer et al. (2021)	USA	Randomized Controlled Trial	ICU Nurses	Mindfulness-Based Cognitive Therapy	Improved resilience and reduced symptoms of burnout and psychological distress.
Mao et al. (2021)	China	Quasi-Experimental	Nurses	Emotional Intelligence Training	Enhanced emotional regulation and reduced occupational stress.
Sawyer et al. (2021)	USA	Intervention Study	Nurses	RISE Program	Increased resilience and coping capacity while reducing burnout symptoms.
Henshall et al. (2023)	United Kingdom	Intervention Study	Healthcare Workers	Web-Based Resilience Training	Improved resilience, well-being, and stress management skills.
Abbasalizadeh et al. (2024)	Iran	Randomized Controlled Trial	Nurses	mHealth-Based Resilience Training	Significantly improved resilience and reduced emotional exhaustion.
Lau et al. (2025)	Singapore	Experimental Study	Healthcare Professionals	Digital Resilience Training	Increased resilience and reduced perceived stress levels.
Bock et al. (2025)	Germany	Intervention Study	Healthcare Staff	Digital Resilience Training Program	Improved coping strategies and psychological well-being.
García-Martín et al. (2021)	Spain	Qualitative Study	Emergency Nurses	Professional Transition Experience	Resilience played an important role in adaptation during crisis situations.
Srikesavan et al. (2022)	UK	Protocol Study	Healthcare Workers	Online Resilience Training	Proposed structured resilience training for burnout prevention.
Wei et al. (2022)	China	Cross-Sectional Study	Nurses	Resilience and Burnout During COVID-19	Higher resilience was associated with lower burnout levels.
Zhang et al. (2022)	China	Cross-Sectional Study	Nurses	Work Stress, Resilience, and Burnout	Resilience moderated the relationship between work stress and burnout.
Labrague (2021)	Philippines	Cross-Sectional Study	Nurses	Resilience, Coping, and Burnout	Resilience and positive coping reduced burnout risk.
Ruiz-Fernández et al. (2021)	Spain	Cross-Sectional Study	Healthcare Professionals	Compassion Fatigue and Burnout	Resilience protected against compassion fatigue and burnout.

Author(s) and Year	Country	Study Design	Participants	Intervention/Focus	Main Findings
Dordunoo et al. (2021)	Ghana	Cross-Sectional Study	Nurses	Practice Environment and Burnout	Supportive work environments reduced burnout and strengthened resilience.
Alharbi et al. (2022)	Saudi Arabia	Cross-Sectional Study	Nurses	Burnout and Coping Strategies	Effective coping strategies were associated with lower burnout.
José et al. (2022)	Portugal	Cross-Sectional Study	Frontline Nurses	Resilience and Mental Health	Higher resilience predicted better mental health outcomes.
Lee et al. (2022)	South Korea	Cross-Sectional Study	Operating Room Nurses	Communication Competence and Resilience	Communication competence and resilience reduced burnout risk.
Cha et al. (2022)	South Korea	Cross-Sectional Study	Nurses	Job Stress and Burnout	Resilience mediated the relationship between job stress and burnout.
García-Martín et al. (2024)	Spain	Intervention Study	Nurses	Digital Wellbeing Intervention	Improved well-being and reduced psychological strain.
Ahmed et al. (2023)	Egypt	Cross-Sectional Study	Clinical Nurses	Psychological Resilience and Coping	Greater resilience was associated with lower burnout and better coping.

Overall, the findings consistently indicate that resilience plays a significant role in reducing burnout among healthcare professionals. The observational studies included in this review demonstrated a strong negative relationship between resilience and burnout levels. Higher resilience was associated with lower emotional exhaustion, reduced occupational stress, and more effective coping mechanisms when dealing with workplace challenges (Franco et al., 2021). Similarly, supportive work environments combined with strong resilience were found to significantly decrease burnout and improve psychological well-being among healthcare workers (Y. B. Kim et al., 2023). In contrast, poor coping strategies and high levels of perceived stress were identified as important contributors to burnout (Zhang et al., 2022). These findings suggest that resilience serves as a protective factor that helps healthcare professionals maintain psychological stability in demanding work environments.

In terms of intervention studies, the evidence indicates that resilience training programs are effective in reducing burnout and improving psychological well-being among healthcare professionals. Several randomized controlled trials and quasi-experimental studies reported significant improvements in resilience, emotional regulation, stress management, and coping abilities following structured resilience-based

interventions. Programs such as mindfulness-based cognitive therapy, emotional intelligence training, and resilience-focused approaches demonstrated positive effects on burnout reduction and psychological adaptation (Mao et al., 2021; Mealer et al., 2021). Furthermore, structured resilience programs such as the RISE model contributed to strengthening participants' capacity to manage occupational stress and maintain emotional well-being. Recent technological developments have also expanded the implementation of resilience interventions through web-based, online, mobile health (mHealth), and digital platforms, providing flexible and accessible approaches for healthcare professionals (Henshall et al., 2023; Lau et al., 2025).

Despite the generally positive findings, variations in intervention effectiveness were observed across studies. Differences in study design, intervention duration, participant characteristics, implementation settings, and measurement instruments contributed to variations in outcomes. While some studies reported significant reductions in burnout, others primarily demonstrated improvements in resilience without a substantial direct effect on burnout indicators. Protocol-based studies further emphasized the need for additional research to establish standardized resilience training models that can be effectively implemented

across diverse healthcare settings (Srikesavan et al., 2022).

Several recent studies also support the role of psychological resilience as a protective factor against occupational stress among healthcare professionals. Frontline healthcare workers with higher resilience levels experienced lower levels of anxiety, fear, insomnia, and psychological distress while caring for patients during the COVID-19 pandemic (Jose et al., 2022). Occupational stress remained one of the strongest predictors of burnout, particularly among healthcare professionals working in high-intensity clinical environments such as emergency departments and intensive care units (García-Martín et al., 2021). However, individuals who possessed stronger coping abilities and adaptive resilience mechanisms were better able to manage emotional exhaustion and workplace stressors. Organizational support, adaptive coping, and resilience were also identified as critical factors in helping healthcare workers successfully adapt to challenging healthcare environments (Y. B. Kim et al., 2023).

Moreover, intervention-based studies continue to demonstrate promising outcomes regarding resilience enhancement. Resilience training programs significantly improved work engagement, emotional stability, professional commitment, and overall psychological well-being among healthcare personnel (Elwany et al., 2023). These findings suggest that resilience interventions not only contribute to burnout reduction but also enhance motivation, job satisfaction, and workforce sustainability. Taken together, the evidence indicates that resilience training programs, whether delivered through conventional face-to-face methods or digital platforms, have substantial potential to reduce burnout among healthcare professionals. Therefore, resilience development should be considered a long-term organizational strategy within healthcare systems to support employee well-being, strengthen workforce resilience, and improve the quality of healthcare services.

Discussion

The findings of this review highlight the important role of resilience as a protective factor against burnout among healthcare professionals. Across the included studies, resilience consistently demonstrated a negative association with burnout, particularly in reducing emotional exhaustion, enhancing psychological well-being, and improving coping capacity. This finding supports contemporary perspectives in occupational health, which view resilience not merely as an individual trait but as a dynamic process influenced by personal, professional, and organizational factors. Healthcare professionals who possess higher levels of

resilience are generally better equipped to manage workplace stressors, adapt to challenging situations, and maintain effective professional functioning (Franco et al., 2021; Jose et al., 2022).

A key contribution of this review is the distinction between observational and intervention-based evidence. Observational studies consistently demonstrated that resilience is associated with lower levels of burnout and occupational stress among healthcare professionals. However, these studies are limited in their ability to establish causality. Although higher resilience is linked to lower burnout, observational designs cannot determine whether resilience directly reduces burnout or whether individuals experiencing lower burnout are better able to maintain resilience over time (Juanamasta et al., 2024; Zhang et al., 2022). This limitation highlights the importance of intervention studies in providing stronger evidence regarding the effectiveness of resilience-enhancing strategies.

The intervention studies included in this review provide substantial evidence supporting the implementation of resilience training programs for burnout reduction. Randomized controlled trials, quasi-experimental studies, and structured intervention programs demonstrated significant improvements in resilience, emotional regulation, coping abilities, and psychological well-being among healthcare professionals. Interventions such as mindfulness-based cognitive therapy, emotional intelligence training, resilience-focused educational programs, and the RISE model were associated with reductions in burnout symptoms and improvements in adaptive coping mechanisms (Mao et al., 2021; Mealer et al., 2021; Sawyer et al., 2023). Furthermore, recent developments in digital and technology-based interventions, including web-based, online, mobile health (mHealth), and digital resilience training programs, have shown promising results in improving accessibility and scalability while maintaining positive psychological outcomes (Henshall et al., 2023; Lau et al., 2025).

Despite the generally positive findings, considerable variation in intervention effectiveness was observed across studies. Several factors may explain these inconsistencies. First, differences in intervention design, duration, intensity, and delivery methods may influence outcomes. Short-term interventions may improve resilience scores without necessarily producing long-term reductions in burnout. Second, heterogeneity in measurement instruments, particularly the use of different resilience and burnout scales, limits direct comparison across studies. Third, contextual factors such as workload, staffing adequacy, organizational culture, leadership support, and workplace climate appear to play important moderating roles. These findings suggest that resilience training alone may not

be sufficient to address burnout if systemic workplace stressors remain unresolved.

Another important finding is the growing shift from individual-focused approaches toward more comprehensive system-informed strategies. While most resilience training programs aim to strengthen individual coping capacities, relatively few interventions address organizational determinants of burnout. Evidence from several studies indicates that supportive work environments, effective communication, leadership support, and positive organizational cultures significantly contribute to resilience development and burnout prevention (Y. B. Kim et al., 2023). Consequently, burnout should not be viewed solely as an individual problem but also as an organizational challenge that requires systemic solutions. Resilience training programs are therefore likely to be most effective when integrated with broader organizational interventions designed to reduce workplace stressors.

The review also highlights the broader psychological benefits of resilience beyond burnout reduction. Healthcare professionals with higher resilience levels experienced lower levels of anxiety, fear, insomnia, and psychological distress, particularly during highly stressful situations such as the COVID-19 pandemic (Jose et al., 2022). Similarly, healthcare workers operating in high-intensity clinical environments demonstrated better adaptation, emotional regulation, and professional functioning when supported by resilience-enhancing interventions (García-Martín et al., 2021). These findings suggest that resilience functions not only as a buffer against burnout but also as a broader protective mechanism that supports mental health and occupational adaptation.

Moreover, intervention-based studies reported improvements in work engagement, professional commitment, emotional stability, and job satisfaction following resilience training programs (Elwany et al., 2023). These outcomes extend the potential value of resilience interventions beyond burnout prevention and indicate their contribution to workforce sustainability and healthcare service quality. The findings further support the view that resilience is a developable capacity that can be strengthened through targeted psychological interventions, training programs, and supportive organizational practices rather than being regarded solely as an innate personal characteristic (S. C. Kim et al., 2021).

From a methodological perspective, this review identified several gaps in the current literature. The number of high-quality randomized controlled trials with long-term follow-up remains limited, making it difficult to evaluate the sustainability of intervention effects. Furthermore, variations in study design,

participant characteristics, intervention content, and outcome measures contribute to heterogeneity across studies. Future research should prioritize longitudinal, multicenter, and adequately powered studies to generate more robust and generalizable evidence regarding the implementation and effectiveness of resilience training programs in diverse healthcare settings.

The implications of these findings are significant for both practice and research. For healthcare organizations, integrating resilience training programs into workforce development and employee well-being initiatives may provide an effective strategy for reducing burnout and strengthening psychological resilience. However, these interventions should be complemented by organizational policies aimed at addressing structural sources of occupational stress. For researchers, there is a need to develop standardized resilience training frameworks and outcome measurement tools to improve comparability across studies and support evidence-based implementation.

Overall, the evidence indicates that resilience training programs have considerable potential to reduce burnout among healthcare professionals. However, their effectiveness is influenced by multiple interacting factors, including intervention characteristics, workplace conditions, organizational support, and individual coping resources. Therefore, sustainable burnout reduction requires a comprehensive approach that combines resilience development with organizational improvement strategies. Such an approach may contribute not only to improved psychological well-being among healthcare professionals but also to enhanced workforce sustainability and healthcare service quality.

Conclusion

This literature review highlights the important role of resilience training programs in reducing burnout among healthcare professionals. The findings consistently demonstrate that higher levels of resilience are associated with lower levels of emotional exhaustion, occupational stress, and psychological distress, while contributing to improved coping abilities, emotional regulation, and overall well-being. Various resilience-based interventions, including mindfulness-based programs, emotional intelligence training, structured resilience models, and digital resilience training approaches, have shown positive outcomes in enhancing resilience and mitigating burnout symptoms across diverse healthcare settings. The review also reveals that the effectiveness of resilience training programs is influenced by several factors, including

intervention design, duration, implementation methods, organizational support, and workplace conditions. Although resilience training contributes significantly to burnout reduction, it should not be viewed as a standalone solution. Organizational factors such as workload, staffing adequacy, leadership support, and work environment remain important determinants of burnout and should be addressed alongside individual-focused interventions. Overall, resilience training programs represent a promising and evidence-based strategy for promoting psychological well-being and reducing burnout among healthcare professionals. Healthcare institutions are encouraged to integrate resilience training into workforce development and employee well-being initiatives while simultaneously implementing organizational policies that address systemic workplace stressors. Future research should focus on conducting high-quality longitudinal and multicenter studies to evaluate the long-term effectiveness of resilience training programs and establish standardized intervention models applicable across various healthcare contexts.

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Author Contributions

Conceptualization, K.N.; methodology, K.N.; formal analysis, K.N.; investigation, K.N.; data curation, K.N.; writing—original draft preparation, K.N.; writing—review and editing, K.N., S., and W.; validation, S. and W.; visualization, K.N.; supervision, S. and W.; project administration, K.N. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

References

- Assir, G. C., & Mindiharto, S. (2025). Peran Lingkungan Kerja Dalam Terjadinya Burnout Syndrome Pada Perawat RSUD Tipe B Kabupaten Gresik. *Jambura Journal of Health Sciences and Research*, 7(3), 295–303. <https://doi.org/10.35971/jjhsr.v7i3.33151>
- Efil, S., Turen, S., Yıldız Ayvaz, M., Bulbul, E., & Yeni, T. (2022). Burnout levels and care behaviours in intensive care nurses: A cross-sectional, multicentre study. *Intensive and Critical Care Nursing*, 71. <https://doi.org/10.1016/j.iccn.2022.103246>
- Elwany, A., El Sayed, N., Zein, Y., & Elzohairy, M. (2023). Effect of Resilience Training Program for Nurse Interns on their Work Engagement. *Alexandria Scientific Nursing Journal*, 25(3), 154–168. <https://doi.org/10.21608/asalexu.2023.318363>
- Franco, P. L., & Christie, L. M. (2021). Effectiveness of a One Day Self-Compassion Training for Pediatric Nurses' Resilience. *Journal of Pediatric Nursing*, 61, 109–114. <https://doi.org/10.1016/j.pedn.2021.03.020>
- García-Martín, M., Roman, P., Rodriguez-Arrastia, M., Diaz-Cortes, M. del M., Soriano-Martin, P. J., & Ropero-Padilla, C. (2021). Novice nurse's transitioning to emergency nurse during COVID-19 pandemic: A qualitative study. *Journal of Nursing Management*, 29(2), 258–267. <https://doi.org/10.1111/jonm.13148>
- Han, S. J., & Yeun, Y. R. (2024). Psychological Intervention to Promote Resilience in Nurses: A Systematic Review and Meta-Analysis. *Healthcare (Switzerland)*, 12(1), 73. <https://doi.org/10.3390/healthcare12010073>
- Henshall, C., Davey, Z., Srikesavan, C., Hart, L., Butcher, D., & Cipriani, A. (2023). Implementation of a Web-Based Resilience Enhancement Training for Nurses: Pilot Randomized Controlled Trial. *Journal of Medical Internet Research*, 25, e43771. <https://doi.org/10.2196/43771>
- Irdalisa, I., Akbar, B., Fuadi, T. M., Maesaroh, M., & Kartikawati, E. (2024). Ricosre Model with Question Formulation Technique (QFT): Enhancing Students' Higher Order Thinking Skills (HOTS) and Science Literacy. *Jurnal Penelitian Pendidikan IPA*, 10(3), 1175–1178. <https://doi.org/10.29303/jppipa.v10i3.6764>
- Jose, S., Cyriac, M. C., Dhandapani, M., Mehra, A., & Sharma, N. (2022). Mental Health Outcomes of Perceived Stress, Anxiety, Fear and Insomnia, and the Resilience among Frontline Nurses Caring for Critical COVID-19 Patients in Intensive Care Units. *Indian Journal of Critical Care Medicine*, 26(2), 174–178. <https://doi.org/10.5005/jp-journals-10071-24119>
- Juanamasta, I. G., Aungsuroch, Y., Gunawan, J., Dino, M. J., & Polsook, R. (2024). Prevalence of burnout and its determinants among Indonesian nurses: a multicentre study. *Scientific Reports*, 14(1). <https://doi.org/10.1038/s41598-024-63550-6>
- Kim, S. C., Sloan, C., Montejano, A., & Quiban, C. (2021). Impacts of coping mechanisms on nursing students' mental health during covid-19 lockdown: A cross-sectional survey. *Nursing Reports*, 11(1), 36–44. <https://doi.org/10.3390/nursrep11010004>

- Kim, Y. B., & Lee, S. H. (2023). The Nursing Work Environment, Supervisory Support, Nurse Characteristics, and Burnout as Predictors of Intent to Stay among Hospital Nurses in the Republic of Korea: A Path Analysis. *Healthcare (Switzerland)*, 11(11), 1653. <https://doi.org/10.3390/healthcare11111653>
- Lau, Y., Choi, K. C., Wong, S. H., Ang, W. W., Ang, W. H. D., & Lau, S. T. (2025). A randomized controlled trial investigating digital resilience training for healthcare professionals. *Scientific Reports*, 15(1), 28028. <https://doi.org/10.1038/s41598-025-28028-z>
- Mao, L., Huang, L., & Chen, Q. (2021). Promoting resilience and lower stress in nurses and improving inpatient experience through emotional intelligence training in China: A randomized controlled trial. *Nurse Education Today*, 107, 105130. <https://doi.org/10.1016/j.nedt.2021.105130>
- Mealer, M., Boeldt, D., Cochran, K., Hodapp, R., Forster, J., Conrad, D., Rothbaum, B. O., Dimidjian, S., & Moss, M. (2021). A Mindfulness-Based Cognitive Therapy (MBCT) Intervention to Improve Resilience and Mitigate Symptoms of Burnout Syndrome in Critical Care Nurses: Results of a Randomized Trial. *Open Journal of Nursing*, 11(08), 653–667. <https://doi.org/10.4236/ojn.2021.118055>
- Mulyani, S. (2017). *Maternal health literacy towards the readiness of exclusive breastfeeding*. In *International Seminar on Global Health (ISGH) 2017*. STIKES Jenderal Achmad Yani Cimahi.
- Page, K., & Graves, N. (2021). A cross sectional study of organizational factors and their impact on job satisfaction and emotional burnout in a group of Australian nurses: infection control practitioners. *BMC Health Services Research*, 21(1), 441. <https://doi.org/10.1186/s12913-021-06477-2>
- Sawyer, A. T., Bailey, A. K., Green, J. F., Sun, J., & Robinson, P. S. (2023). Resilience, Insight, Self-Compassion, and Empowerment (RISE): A Randomized Controlled Trial of a Psychoeducational Group Program for Nurses. *Journal of the American Psychiatric Nurses Association*, 29(4), 314–327. <https://doi.org/10.1177/10783903211033338>
- Srikesavan, C., Davey, Z., Cipriani, A., & Henshall, C. (2022). Resilience Enhancement Online Training for Nurses (REsOluTioN): Protocol for a Pilot Randomized Controlled Trial. *JMIR Research Protocols*, 11(8), e060000. <https://doi.org/10.2196/37015>
- Unjai, S., Forster, E. M., Mitchell, A. E., & Creedy, D. K. (2024). Interventions to promote resilience and passion for work in health settings: A mixed-methods systematic review. *International Journal of Nursing Studies Advances*, 7, 100242. <https://doi.org/10.1016/j.ijnsa.2024.100242>
- Yu, F., Chu, G., Yeh, T., & Fernandez, R. (2024). Authors' response to "Comment on Yu et al. (2024) 'Effects of interventions to promote resilience in nurses: A systematic review.'" *International Journal of Nursing Studies*, 159, 104825. <https://doi.org/10.1016/j.ijnurstu.2024.104870>
- Zhang, Y., Jiang, J., Zhu, C., Liu, C., Guan, C., & Hu, X. (2022). Status and related factors of burnout among palliative nurses in China: a cross-sectional study. *BMC Nursing*, 21(1). <https://doi.org/10.1186/s12912-022-01083-x>