Interventions to Reduce Burnout among Emergency Nurses: A Systematic Review

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Abstract: These datasets (PubMed, CINAHL, Scopus) were searched using a three-step technique and manually searched relevant studies in the reference lists. The scope of the search was limited to English-language publications published between January 1, 2019, and December 31, 2024. Using PRISMA, two reviewers independently examined titles and abstracts, extracted data, and rated selected studies using standardized MMAT. The systematic review comprised six studies in total and looked into laughter yoga, mindfulness, empathy, emotion regulation, emotional freedom technique, conflict resolution techniques, efficacy enhancement. All of the included studies affected burnout.The individual-focused interventions (including laughter yoga, mindfulness, optimism, proactive coping, empathy, emotion regulation, and emotional freedom technique) and organizational-directed interventions (including comprehensive management, transformational leadership, and culture change toolkit) can reduce job burnout for nurses working in the emergency department.
***Keywords*:** individual-focused intervention, organizational-directed intervention, burnout, emergency nurse

1. Introduction

The emergency department work environment frequently contributes to and raises the risk of work-related nurse burnout. When these circumstances are present, emergency nurses might not be able to give appropriate care and might decide to quit their jobs. To reduce nurses' burnout in the emergency, this review aimed to synthesize the strongest available data on interventions.

2. Background

A syndrome known as "occupational burnout" has been characterized as being brought on by chronic workplace stress that has not been adequately controlled [1]. Burnout is classified into three subscales according to the Maslach Burnout Inventory (MBI) [2]: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). Salvagioni et al. find that poor nurse-patient relationships, increased absenteeism, lower empathy, substance misuse, depression, and suicidality are all connected with nursing burnout[3]. Besides, over 50% of emergency nurses (53.7%) and inpatient nurses (50.7%) reported being highly burned out. Approximately 42.0% of inpatient nurses indicated intending to depart, while nearly half (49.9%) of emergency nurses did the same [4]. Meanwhile, Halter et al. argue that nurse leaving leads to significant financial consequences, which are projected to be between $11,000 and $90,000 per nurse and up to $8.5 million in broader expenses (such as vacant positions, patient delays, training and orientations, and other costs) [5] . Burnout affects emergency nurses, patients, the medical system, and even global health significantly, and it is a pressing issue that must be addressed. The management of occupational burnout and promotion of well-being among nurses working in emergency health services are essential. A preliminary search of three databases (PubMed, CINAHL, and Scopus) found that several published systematic reviews address burnout treatment among emergency physicians and other department nurses. Many studies have been done to reduce nurse burnout, and the majority of current burnout management interventions either have an organizational focus or an individual focus. However, systematic reviews focused on integrating interventions to reduce emergency nurses burnout are limited. To address this gap in burnout management, this review aims to synthesize from the available literature the effective intervention strategies to decrease burnout among emergency nurses.

3. Review question

What interventions can decrease occupational burnout among emergency nurses?

4. Methods

4.1 Search strategies and eligibility criteria

All relevant studies were searched from the following databases: PubMed, CINAHL, and Scopus. Medical Subject

Heading (MeSH) was also used in the National Library of Medicine (NLM) database. Keywords and their synonyms were utilized in the systematic search. To search the literature, the most extensive synonyms and relevant phrases were used. The search was either broadened or narrowed by using the Boolean operators "AND" and "OR" as appropriate. Quote marks were employed to aggregate sentences for a more complete search, and the truncation "*" was utilized to obtain all word ends. A manual search of the database listings of relevant research was done to find the most relevant literature and reduce publication bias. The following criteria were used to select studies for inclusion: (a) population: emergency nurses; (b) intervention: all interventions are implemented; and (c) outcome: reduction in burnout. The studies that were excluded satisfied the following criteria: (a) sample: physicians, nursing leaders, or nursing students; (b) outcome in terms of stress, anxiety, and other concerns. Only English-language studies from the past five years were considered. Because the data within five years was updated and had more significance, this period was chosen.

4.2 Study Selection

Using Zotero to manage all selected studies , and any duplicates were removed. The remaining studies were loaded into Covidence for screening. Separate searches and selections were undertaken by two independent reviewers, and disagreements between the two reviewers were settled by consensus with the involvement of a third independent reviewer.

4.3 Data extraction

Information needed from the included studies was extracted by the primary reviewer. A table summarizing the study characteristics was constructed according to the study objective. Data were extracted and classified based on the characteristics of the included publications and the headings listed below: authors' name, publication year, country, title, design, samples and setting, data collection and instrument, and interventions.

4.4 Quality Assessment

The Mixed Methods Assessment Tool [6](Table 1) was utilized to analyze papers separately for this systematic review. For each sort of study, there were five questions to grade the article's quality.

Table 1. Mixed Methods Assessment Tool

Category of study designs	Methodological quality criteria	Salvarani et al. 2019	Si˙s Çeli˙k and Kılınç. 2022	Shattla et al. 2019	Adams et al. 2019	Wu et al. 2020	Dincer and Inangil. 2020
Screening questions (for all types)	"S1. Are there clear research questions?"	Yes	Yes	Yes	Yes	Yes	Yes
	"S2. Do the collected data allow to address the research questions?"	Yes	Yes	Yes	Yes	Yes	Yes
	"Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions".						
2.Quantitative randomized controlled trials	"2.1. Is randomization appropriately performed?"		Yes				Yes
	"2.2. Are the groups comparable at baseline?"		Yes				Yes
	"2.3. Are there complete outcome data?"		Yes				Yes
	"2.4. Are outcome assessors blinded to the intervention provided?"		No				No
	"2.5 Did the participants adhere to the assigned intervention?"		Yes				Yes
3.Quantitative non-randomized	"3.1. Are the participants representative of the target population?"			Yes	Yes		
	"3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?"			Yes	Yes		
	"3.3. Are there complete outcome data?"			Yes	Yes		
	"3.4. Are the confounders accounted for in the design and analysis?"			Yes	Yes		
	"3.5. During the study period, is the intervention administered (or exposure occurred) as intended?"			Yes	Yes		
4.Quantitative descriptive	"4.1. Is the sampling strategy relevant to address the research question?"	Yes				Yes	
	"4.2. Is the sample representative of the target population?"	Yes				Yes	
	"4.3. Are the measurements appropriate?"	Yes				Yes	
	"4.4. Is the risk of nonresponse bias low?"	Yes				Yes	
	"4.5. Is the statistical analysis appropriate to answer the research question?"	Yes				Yes	

5. Results

5.1 Study selection

533 studies were found in 3 databases and 1 study from other sources (citation searching). Following the discovery of duplicates, 506 studies were assessed based on title and abstract, with 439 studies being removed. Meanwhile, 11 studies were excluded because they couldn't be sought for retrieval. A total of 56 relevant papers were further screened for eligibility through full-text; 46 studies were excluded because of the wrong population (including physicians, nursing students, or nursing leaders), wrong outcome (including stress, anxiety, and other issues), and systematic review, so a total of 6 papers were relevant for inclusion.

5.2 Study characteristics

Table 2 was summarized the detailed information on the research features. Various studies were conducted in various countries such as Italy [7], Turkey [8] [9], Egypt [10], China [11], the United States of America [12]. All the included six studies were quantitative, including the cross-sectional design [7] [11], the randomized controlled study [8] [9], the quasi-experimental research [10], and the non-randomized study [12]. All six studies used questionnaires for data collection. For the assessment instrument of burnout, MBI was used by there studies [7] [8] [10]. One study used the Oldenburg Burnout Inventory [12]. Maslach's Emotional Exhaustion Scale was used in one study [11]. The last study [9] used the Turkish adaptation of a standardized burnout scale.

Table 2. Study characteristics of all 6 studies

Authors Year Country	Title	Study design and method	Samples setting and method	Data collection	Interventions
Salvarani et al. 2019 Italy	"Protecting emergency room nurses from burnout: The role of dispositional mindfulness, emotion regulation and empathy"	A multi-center cross-sectional design	N=97 emergency nurses Descriptive	Questionnai-re	● Dispositional mindfulness ● Emotion regulation ● Empathy
Si˙s Çeli˙k and Kılınç. 2022. Turkey	"The effect of laughter yoga on perceived stress, burnout, and life satisfaction in nurses during the pandemic: A randomized controlled trial"	An experimental randomized controlled study	N=101 COVID-19 clinics nurses Randomized	Online questionnair-e	Laughter yoga
Shattla et al. 2019 Egypt	"Effectiveness of Laughter Yoga Therapy on job Burnout Syndromes among Psychiatric Nurses"	A quasi experimental (two groups pre/ post-test) research design	N=46 Psychiatric Mental Health and Addiction Treatment nurses Non-randomize-d	Structured interview questionnair-e	Laughter yoga
Adams et al. 2019 USA	"The implementation of a CULTURAL CHANGE TOOLKIT to reduce nursing burnout and mitigate nurse turnover in the emergency department"	Non-randomized study	N=30 emergency nurses Non-randomize-d	Initial Demographi-c questionnair-e	● Meaningful recognition ● Shared decision making ● Increased leadership involvement and support
Wu et al. 2020 China	"Positive spiritual climate supports transformational leadership as means to reduce nursing burnout and intent to leave"	A cross-sectional questionnaire survey	N=391 nurses Descriptive	Self-report questionnair-e	Transformational leadership
Dincer and Inangil. 2020 Turkey	"Emotional freedom techniques on nurses' stress, anxiety, and burnout levels during the COVID-19 pandemic: A randomized controlled trial"	A randomized controlled trial	N= 72 nurses Randomized	Turkish adaptation of a standardized burnout scale	Emotional freedom techniques

5.3 Synthesis of results

There were nine interventions to reduce emergency nurses' burnout. These interventions were divided into individual-focused interventions and organizational-directed interventions (Table 3).

Table 3. Study findings of all six selected studies

Authors & Study year	Findings
Salvarani et al. 2019	Emergency nurses who were more mindful, had better emotion regulation, and were more empathic were better equipped to manage work-related burnout.
Sis ÇelikA and Kılınç. 2022	Laughter yoga was a powerful tool for reducing perceived stress and burnout while simultaneously enhancing life satisfaction.
Shattla, Mabrouk, and Abed. 2019	●When compared to the control group, the experimental group's mean burnout score significantly decreased after receiving laughter therapy. ● The experimental and control groups' levels of burnout were statistically significantly different from one another after laughter therapy, with P value<0.001.
Dincer and Inangil. 2020	● Stress, anxiety, and burnout reductions attained statistically significant for the intervention group ($p < .001$). ● There were no statistically significant changes in these measurements for the control group ($p > .05$).
Adams et al. 2019	● Nursing staff burnout dropped (burnout mean score, preimplementation = 4.81, postimplementation = 4.461) ● The decline in overall burnout scores was statistically significant after a paired t-test analysis (P ¼ 0.004). ● During the course of the project, no nursing staff members resigned.
Wu et al. 2020	● Transformational leadership among nurse clinicians was encouraged by their positive spirituality, which helped to prevent EE (indirect effect of −0.089, $p < .01$). ● Lower levels of perceived spirituality were significantly linked to burnout and leaving intentions ($p < .01$).

6. Discussion

Salvarani et al. found that dispositional mindfulness components were found to be negatively related to EE, DP, and lower levels of PA . According to the research, the association discovered in the context of general healthcare between dispositional mindfulness and burnout also held true in the specialized field of emergency nursing [13]. In the sample of emergency nurses, Salvarani et al. observed an inverse connection between emotional regulation and degrees of burnout, emergency nurses experienced high levels of EE, DP, and a lack of PA due to difficulties with emotional regulation. In contrast to dispositional mindfulness and emotional regulation, not all aspects of burnout were linked to emergency nurses' empathy levels. Any of the four qualities of empathy did not affect PA. These results are in agreement with the compassion fatigue theory's theoretical foundation [14].

In the Si˙s Çeli˙k and Kılınç study, nurses in the experimental group and control group had identically high EE and DP pre-test scores, poor PA scores, and high levels of overall burnout. There was no significant change in the EE, DP, and PA, and at the end of the study, it was discovered that the EE and DP levels of the nurses who underwent laughter yoga decreased and their PA levels increased, resulting in a decrease in overall burnout levels. The literature highlights that laughter yoga had several physiological benefits. This study found no significant differences in burnout scores before implementing laughter therapy between the experimental and control groups. In the post-test of laughter therapy implementation, the experimental group's mean values for all subscales and overall burnout were significantly lower than the controls'. This demonstrates that laughter yoga had a favorable effect. This study's findings were corroborated by Yazdani et al., who investigated the impact of laughter yoga on nursing students' general health [15]. Furthermore, according to Nagendra et al., stress markers including blood cortisol levels significantly improved as a result of laughter yoga's effectiveness in helping professionals in India cope with work-related stress[16]. In line with these findings, laughter yoga was a non-invasive, drug-free therapy that had beneficial impacts on one's physical, mental, and social well-being.

Wu et al. illustrated that transformational leadership could play a significant role in creating a spiritual environment that is encouraging and helpful, which had a good impact on EE. In fact, nurse leaders were sensitive to their nurses' spiritual needs. They could provide a helpful workplace atmosphere through altruistic intent [17]. By understanding nurses' emotions and sentiments and listening to their community, nurse leaders could foster workplace spirituality [18].

The creation and subsequent use of the Cultural Change Toolkit enabled these emergency nurses to significantly lower their self-reported rates of nursing burnout. Staff members were allowed to submit qualitative feedback on the interventions over the project term. Many participants expressed support for the interventions and expressed a desire to see them continue in the future.

Dincer and Inangil discovered that a fast, single-session online group intervention using EFT was effective in lowering stress, anxiety, and burnout. Furthermore, EFT has been shown in several studies to be an effective and quick treatment for stress, anxiety, and burnout [19] [20].

7. Conclusions

To reduce burnout among emergency nurses, this review explored six studies that included various strategies, such as transformational leadership, meaningful recognition, shared decision making, laughter yoga, mindfulness, empathy, emotion regulation, and emotional freedom technique. Clearly, the benefits of burnout interventions and the indices associated with burnout improvement will be noticeable in the long run, and to assess how long the alterations will last, additional follow-up investigations are required. However, due to the diversity of the research and the low quality of the included studies, the strength of the recommendations from this analysis is restricted. More study in this field is needed, particularly high-quality RCTs with bigger sample sizes and long-term impact monitoring. Finally, to create a skill set and personal belief system that will effectively immunize against situations that may make them more prone to burnout, future generations of nurses should engage in individual preventive training early in their employment.

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