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# Forging the Inner Armor: A Review of Resilience-Building Interventions for Nurses to Mitigate Burnout and Promote Mental Well-Being

**Munaa Mulahi Gazi Alharbi [(1)] , Nasrah Saadi Raga Alshammri [(2)] , Afra Radi Hamad Alaglan [(3)] , Mohammed Obaidallah Alshmmarl [(2)] , Majed Aseed Rashed Alshammari [(4)] , Maha Saeed Raja Rmal [(4)] , Basmah Ghanem Rubayyi Alshammari [(5)] , Ibrahim Khulaif Alshammari , Taghreed Hamoud Ali Alshammari [(6)] , Ola Hamoud Ali Alshammari [(7)] , Najah Hamoud Ali Alshammari [(7)]**

*(1) Pharmacy Technician, Al-Qaed Clinic, Hail, Ministry of Health, Saudi Arabia,*
*(2) Al-Qaed Clinic, Hail, Ministry of Health, Saudi Arabia,*
*(3) Al-Jawf Health Cluster Hail , Ministry of Health, Saudi Arabia,*
*(4) Al-Khat Clinic, Hail, Ministry of Health, Saudi Arabia,*
*(5) Al-Nisiyah Clinic, Hail, Ministry of Health, Saudi Arabia,*
*(6) Subai'ah Health Center, Hail, Ministry of Health, Saudi Arabia,*
*(7) Nursing Technician, Subai'ah Health Center, Hail, Ministry of Health, Saudi Arabia*

## Abstract

**Background:** The nursing workforce globally is facing a crisis, with widespread burnout that threatens both mental health and the quality of care for patients. The COVID-19 pandemic has deepened this problem, highlighting an urgent call for strategies that would offer protection. In this regard, psychological resilience-the ability to adapt to adversity-has been identified as a protective resource for the profession.

**Aim:** This review aimed to assess the efficacy of structured interventions for building resilience among nurses.

**Methods:** The analysis included an in-depth review of evidence from 40 studies published between 2015 and 2024 on various program types and their outcomes.

**Results:** The results show that resilience interventions, in particular multimodal programs, which combine mindfulness with cognitive-behavioral techniques and skills training, are effective. Indeed, these interventions consistently yield significant reductions in burnout, stress, anxiety, and depression, but at the same time significantly enhance resilience, psychological well-being, and job satisfaction.

**Conclusion:** The review concludes that individual-focused resilience training is powerful but insufficient. Its effectiveness depends on its embedding in wider, systems-level reforms that address the causes of workplace stress. What matters most for constructing and sustaining a resilient workforce is a two-pronged approach: evidence-based skill-building combined with genuine organizational support and structural change.

**Keywords:** nurse burnout, resilience interventions, mental well-being, multimodal training, organizational support..

## 1. Introduction

The nursing profession is considered the backbone of healthcare provision globally but finds itself in unprecedented strain. Nurses practice in settings typified by high acuity, understaffing, ethical challenges, and emotional exposure, which uniquely predispose them to psychological injury (Hofmeyer et al., 2020). Burnout is a work-related syndrome described by Maslach and Leiter (2016) as a psychological, social, and somatic state characterized by overwhelming exhaustion, cynicism or depersonalization regarding the job, and reduced performance or feelings of ineffectiveness and lack of accomplishment. Estimates before the pandemic showed that the prevalence of burnout among nurses was alarming, with implications for increased medical errors and nosocomial infections, higher staff turnover, and poor patient experiences (Dyrbye et al., 2017). The COVID-19 pandemic proved to be a powerful accelerant, further increasing these pre-existing stresses and putting into sharp focus the imperative to protect nurses' mental health (Søvold et al., 2021).

In such a demanding context, the notion of resilience has recently gained momentum. Defined not as a fixed trait but as a dynamic, malleable process, resilience pertains to the ability to navigate adversity, maintain psychological equilibrium, and even experience growth in the face of significant stressors. For nurses, resilience is not about avoiding stress but building an armamentarium of cognitive, emotional, and behavioral skills in dealing with it, thus mitigating the risk of burnout and promoting long-term career sustainability and well-being.

Over the last ten years, there has been a proliferation of interventions developed and


*Corresponding author e-mail: Munaaalkhateeb1@gmail.com (Munaa Mulahi Gazi Alharbi).
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implemented with the explicit aim of fostering resilience among nurses. Programs vary widely in their theoretical underpinnings, format, and duration, and the outcomes they aim for. While many single studies and some prior reviews have documented the potential benefits of such interventions, the field lacks a recent, comprehensive synthesis that captures the latest evidence, particularly from the pivotal post-2020 period. We sought to fill this gap through the current systematic review, critically examining the body of literature between 2015 and 2024. Our threefold objectives are: (1) to systematically identify and categorize the types of resilience-building interventions implemented for nurses; (2) assess their efficacy in reducing burnout and enhancing mental well-being; and (3) identify key facilitators, barriers, and future directions for both research and practice in this critical area of nurse well-being.

**Methodology**

A literature search was performed across four major electronic databases: PubMed, PsycINFO, CINAHL, and Scopus. The search was limited to articles published in English between January 2015 and December 2024. A combination of keywords and Medical Subject Headings (MeSH) terms was used, including: ("nurs*" OR "nursing staff") AND ("resilience" OR "psychological resilience" OR "stress, psychological" OR "coping skills") AND ("intervention" OR "program" OR "training" OR "mindfulness" OR "CBT") AND ("burnout" OR "professional burnout" OR "well-being" OR "mental health" OR "job satisfaction").

**Inclusion and Exclusion Criteria**

Studies were included if they: (1) involved registered nurses, nurse practitioners, or nursing students in any healthcare setting; (2) evaluated a structured intervention with the primary or secondary aim of building psychological resilience; (3) measured outcomes related to burnout (e.g., using the Maslach Burnout Inventory - MBI), mental well-being (e.g., stress, anxiety, depression, resilience scales), or both; (4) utilized a randomized controlled trial (RCT), quasi-experimental, or pre-post study design; and (5) were peer-reviewed primary research articles. Studies were excluded if they were review articles, commentaries, or dissertations, or if the intervention was not specifically targeted at building resilience (e.g., general wellness programs without a resilience component).

**Study Selection and Data Extraction**

An initial database search yielded a total of 1,245 records. After duplicate removal, the titles and abstracts of 895 articles were screened for relevance. A total of 125 full-text articles were further assessed for eligibility, where 35 studies fulfilled all the specified inclusion criteria. Data extraction was based on a standardized form from the included studies: authors, year of publication, design, characteristics of the sample, characteristics of the intervention (type, duration, frequency), outcome measures, and main results.

**A Typology of Resilience-Building Interventions**

Analysis of the included studies showed that resilience interventions can be broadly divided into four major types, each with different theoretical underpinnings and methodological approaches (Table 1 & Figure 1).

**Mindfulness-Based Interventions (MBIs)**

With roots in ancient contemplative practices and modernized through programs like MBSR, MBIs aim to cultivate non-judgmental present-moment awareness. These interventions usually comprise formal practices, such as seated meditation, body scans, and mindful movement, and informal practices, or bringing mindfulness to daily activities. MBIs were found in this review to be quite effective in reducing emotional exhaustion, a core component of burnout. For example, the RCT by Gauthier et al. (2015) found that nurses who finished the 8-week MBSR program evidenced significantly greater reductions in emotional exhaustion and perceived stress than did members of the waitlist control group. Similarly, a more recent study by Monti et al. (2023) adapted MBSR for intensive care unit nurses and reported not only decreased burnout but also improved attentional performance and emotional regulation. Its mechanism of action is believed to be through the neurobiological changes associated with regular practice, enhancing the prefrontal cortex's regulation of the amygdala and thereby reducing reactivity to stress (Hölzel et al., 2011).

**Cognitive-Behavioral and Skills-Based Approaches**

These interventions are based on the principle that psychological distress is maintained by maladaptive thought patterns and behaviors. CBT techniques are adapted to help nurses identify and reframe catastrophic or distorted thinking related to work events, such as "I must save every patient." A well-known one is the Stress Management and Resiliency Training (SMART) program, which includes a curriculum based on components of mindfulness, cognitive restructuring, and positive psychology. A large quasi-experimental study by Slatyer et al. (2018) showed that a brief intervention based on SMART resulted in large improvements in resilience, perceived stress, and mental well-being across a diverse sample of nurses. Other skills-based programs, such as the PRIN program, are focused on building a specific toolkit that includes problem-solving, assertive communication, and boundary setting, which are directly applicable to challenging clinical and interpersonal situations (Bui et al., 2022).

**Multimodal and Comprehensive Programs**

Appreciating the multidimensional nature of the construct, many of the most successful interventions are multi-modal, integrating pieces from a number of theoretical models. Such programs often

combine psychoeducation, mindfulness practices, CBT techniques, and experiential exercises over weeks. For example, the RISE (Resilience in Stressful Experiences) program is a short, evidence-based intervention for health professionals with the clear goals of normalizing stress, enhancing adaptive coping, and facilitating post-traumatic growth (Wu et al., 2021; Connors & Wu, 2020). Research on the RISE program has shown steep and significant decreases in distress after adverse clinical events. Another holistic program, "Code Lavender," utilizes a multi-modal response to stress that can include mindfulness, aromatherapy, peer support, and chaplaincy, representing an on-demand approach to resilience support (Vaclavik et al., 2018; Mahon et al., 2017; Abdollahi et al., 2020).

**Organization-Led and Peer-Support Initiatives**

Most interventions target the individual nurse, but there is a growing emphasis in the literature on the role of the organizational environment. These interventions shift the focus from building individual "toughness" to creating a "resilient system." They include things like structured peer-support programs, such as the American Association of Critical-Care Nurses' Peer-to-Peer Support framework, which trains nurses to provide confidential, non-judgmental listening and support to colleagues following stressful events (Boothroyd & Fisher, 2010). Other organization-led initiatives include leadership training for nurse managers to foster supportive, communicative, and psychologically safe unit cultures. A study by Wei et al. (2022) showed that units with managers who demonstrated transformational leadership styles had significantly lower rates of nurse burnout and higher team resilience, underlining that leadership is a modifiable factor that can buffer against workplace stressors.

**Efficacy in Mitigating Burnout and Enhancing Well-Being**

The primary motivation for adopting interventions aimed at boosting resilience is the presumed impact on the triad of burnout and other related mental health variables. In fact, taken together, the cumulative findings suggest that well-designed programs can indeed yield meaningful positive change.

**Table 1: Typology and Characteristics of Resilience-Building Interventions for Nurses**

| Intervention Type | Theoretical Basis | Key Components | Example Programs | Reported Efficacy |
|---|---|---|---|---|
| **Mindfulness-Based (MBIs)** | Mindfulness-Based Stress Reduction (MBSR), Acceptance and Commitment Therapy (ACT) | Meditation, body scans, mindful movement, and psychoeducation on stress. | MBSR, Mindfulness-Based Cognitive Therapy (MBCT) | Strong evidence for reducing emotional exhaustion and stress; moderate for improving well-being. |
| **Cognitive-Behavioral & Skills-Based** | Cognitive-Behavioral Therapy (CBT), Positive Psychology | Cognitive restructuring, identification of automatic thoughts, problem-solving, communication skills. | Stress Management and Resiliency Training (SMART), Promoting Resilience in Nurses (PRIN) | Effective for enhancing resilience scores and reducing symptoms of anxiety and depression. |
| **Multimodal/Comprehensive** | Integrative, combining CBT, mindfulness, and psychoeducation | Multiple components delivered in a structured, multi-session format. Often includes group discussion. | Resilience in Stressful Experiences (RISE), Code Lavender (variants) | High efficacy across multiple domains (burnout, resilience, well-being); considered among the most robust approaches. |
| **Organization-Led & Peer Support** | Social Support Theory, Systems Theory | Peer support training, leadership development, debriefing sessions, and culture of safety initiatives. | AACN Peer-to-Peer, CREW (Co-worker Respect and Engagement) | Effective in improving job satisfaction and reducing depersonalization; impact on exhaustion varies. |


**Figure 1: Typology of Resilience-Building Interventions**

**Burnout Dimensions**

The Maslach Burnout Inventory is considered the gold standard for measuring burnout, and its subscales allow nuanced evaluation. By far the most consistent finding across interventions is a significant reduction in emotional exhaustion. This finding is more profound for MBIs and multimodal programs that equip nurses with the skills to navigate the chronic emotional depletion inherent in their work Ramachandran et al. (2023). The impact on depersonalization-cynicism is less consistent. Whereas those using cognitive-behavioral approaches, which explicitly target negative attributions, report reductions, the effect seems minimal in others (Cepeda-Lopez et al., 2023; Guo et al., 2019). Thus, this tends to imply that cynicism may run deeper and be more influenced by unaddressed systemic factors such as moral injury and perceived lack of organizational support. Finally, there are often increases in personal accomplishment from interventions, likely due to components that generate a sense of mastery and competence, and connectivity to meaning in one's work, as reflected in the programs incorporating reflective practice or gratitude exercises (Morley et al., 2021) .

**Promotion of Mental Well-Being**

Beyond the alleviation of burnout, resilience interventions demonstrate a significant capacity to foster positive mental health. Reductions in perceived stress, anxiety, and depressive symptoms are common findings. For example, an RCT by Zhang et al. (2019) testing a CBT-based resilience program for oncology nurses found a statistically and clinically significant decrease in anxiety and depression scores post-intervention and at a 3-month follow-up. Furthermore, resilience itself-as operationalized through the Connor-Davidson Resilience Scale (CD-RISC) or the Brief Resilience Scale (BRS), consistently exhibits improvements. This confirms that nurses are not just benefiting from temporary symptom alleviation but may well be developing more durable psychological resources. Increased self-compassion, as a key ingredient of many mindfulness and self-care interventions, has even emerged as a crucial mediator between resilience training and reduced psychological distress (Duarte & Pinto-Gouveia, 2017; Foster et al., 2019).

**Implementation Considerations and Moderating Factors**

The curriculum is not the key determinant of the success of a resilience intervention; implementation context is all-important. A number of factors have been consistently identified as critical moderators of effectiveness (Table 2 & Figure 2).

**Dosage, Duration, and Format**

One important consideration is that the "dose" of an intervention makes a difference. Brief, one-time workshops often lead to small or nonsustained effects, while programs that run over several weeks, typically 6 to 8 sessions, have stronger and more sustained effects (Janzarik et al., 2022). This enables progressive skill building, group cohesion, and the establishment of new habits. Format is important, too. While digital and app-based interventions have considerable scalability and accessibility, their overall efficacy is generally lower than in-person or live virtual group programs, which benefit from the therapeutic factors of social learning and facilitator support (Chen et al., 2022; Wang et al., 2023). A blended model, with digital tools complemented by periodic group sessions, may offer an optimal balance.

**The Role of Organizational Culture and Leadership**

Perhaps the most important moderating factor is the organizational environment in which the intervention is delivered. An intervention teaching coping skills is likely to be undermined if a nurse returns to a unit with chronic understaffing, unsupportive leadership, and a culture of blame. As Shanafelt and Noseworthy (2017) argued, organizational drivers account for the majority of the variance in physician and nurse burnout. Therefore, the most successful implementations are those where resilience training is part of a wider organizational strategy for well-being, modeled and endorsed by leadership, and combined with efforts to address systemic issues such as workload, workflow inefficiencies, and administrative burden (Kester & Wei, 2018).

**The "Dark Side" of Resilience: Ethical and Conceptual Critiques**

Any critical analysis of the resilience literature in nursing needs to pay due regard to the ethical debate about its promotion. Some scholars caution against the "responsibilization" of workers, whereby systemic problems are framed as individual deficits in resilience, letting organizations off the hook for creating toxic work environments (Traynor, 2019). There is an associated risk that resilience training may be misused as a form of "band-aid" solution that places the onus on the nurse to withstand untenable conditions, with associated feelings of guilt or failure when the individual still struggles. It is thus an ethical imperative to locate building resilience not as a substitute for necessary structural and cultural change but rather as a complement in a comprehensive well-being strategy that seeks to address the root causes of workplace stress.

**Table 2: Key moderators of intervention success and associated recommendations**

| Moderating Factor | Challenge | Recommendation for Practice |
|---|---|---|
| **Dosage & Duration** | Brief workshops lack the depth for sustainable skill development. | Implement multi-session programs (e.g., 6-8 weeks) with booster sessions for long-term maintenance. |
| **Organizational Context** | Training is ineffective if the workplace culture is unsupportive or toxic. | Embed interventions within a system-wide well-being strategy. Secure leadership buy-in and align training with efforts to improve staffing, workflows, and psychological safety. |
| **Facilitator Expertise** | Programs led by untrained or inexperienced facilitators have reduced impact. | Invest in certified trainers with expertise in the intervention modality and an understanding of the nursing context. |
| **Voluntary vs. Mandatory Participation** | Mandatory attendance can breed resentment; voluntary limits reach. | Frame programs as a valuable professional development opportunity. Use persuasive communication from respected peer champions and leaders to encourage voluntary participation. |
| **Measurement** | Over-reliance on self-report scales; lack of long-term follow-up. | Utilize a mix of self-report, physiological (e.g., cortisol), and organizational (e.g., turnover) metrics. Track outcomes at 6 and 12 months post-intervention. |


**Figure 2: Integrated Model of Nurse Resilience**

**Gaps in the Literature and Future Directions**

Despite the promising evidence, this review identifies several important gaps that should be given attention in future research and practice. First, there is a pressing need for more long-term, high-quality RCTs with active control groups. Many existing studies suffer from short follow-up periods, making it difficult to ascertain whether improvements are sustained over a nurse's career. Second, the field would benefit from greater standardization of outcome measures to allow for more meaningful cross-study comparisons and meta-analyses. Investigating the specific "active ingredients" of multimodal programs is another crucial avenue; understanding which components (e.g., mindfulness vs. cognitive skills) are most effective for which outcomes can lead to more efficient and targeted interventions (Montero-Marin et al., 2021; Montero-Marin et al., 2022).

Future research should also broaden its focus to investigate interventions for specific nursing sub-populations facing unique stressors, including new graduate nurses during transition-to-practice, nurses in rural and remote settings where resources may be limited, and those working within palliative care or with traumatized populations (Alshawush et al., 2020). Finally, the development and rigorous testing of system-level interventions are urgently required. While developing the resilience of individual members is important, the ultimate aim must be to develop "resilient organizations" that proactively design work environments that prevent burnout rather than simply helping employees cope with it (Lengnick-Hall et al., 2011; Mokline & Ben Abdallah, 2021).

**Conclusion**

This review of 35 studies between 2015 and 2024 provides compelling evidence that resilience-building interventions are a viable and effective strategy for mitigating burnout and promoting the mental well-being of nurses. The most successful programs are typically multimodal, skills-based, and delivered over a sustained period, fostering both inner capacities for stress management and a supportive peer community. Mindfulness-based and cognitive-

behavioral approaches are a sound basis for these initiatives, which result in significant reductions in emotional exhaustion, stress, and anxiety. The efficacy of such interventions, however, is deeply shaped by their implementation context: they are not a panacea for more deep-seated systemic issues like chronic understaffing, inefficient workflows, and poor leadership. The greatest advances will occur when individual-focused resilience training is set within a broader, organization-wide commitment to the co-creation of a culture of well-being, ethical practice, and systemic support. It is this dual-pronged approach that will forge both an inner armor for the individual nurse and a reformed battlefield upon which they serve. The future of a resilient nursing workforce depends on it; so too does the sustainability of our healthcare systems.

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