

Conceptual Connotations, Assessment Tools, and Intervention Research Progress on Psychological Resilience among Emergency Nurses

Yini Zhang, Enhui Huang*

The First Affiliated Hospital of Wenzhou Medical University, Wenzhou, China

**Corresponding author*

Abstract: Emergency department nurses are continuously exposed to traumatic events, high-intensity workloads, and interpersonal conflicts, making their mental health concerns increasingly prominent. Psychological resilience, as a core protective factor enabling individuals to effectively cope with adversity, trauma, or stress, holds significant value for maintaining the physical and mental health of emergency nurses and ensuring nursing quality. However, systematic reviews of psychological resilience among emergency nurses in China remain insufficient, with unclear conceptual definitions, diverse assessment tools, and lack of unified standards for intervention protocols. This article systematically reviews the conceptual evolution and dimensional frameworks of psychological resilience, focusing on emergency nurses as the target population. It summarizes commonly used assessment tools domestically and internationally (such as CD-RISC, BRS, etc.), analyzes individual, organizational, and social factors influencing psychological resilience among emergency nurses, and synthesizes evidence on existing intervention strategies including mindfulness training, cognitive-behavioral interventions, group psychological counseling, and organizational support optimization. Additionally, this review identifies gaps in current research and outlines future directions. It aims to provide theoretical foundations for emergency nursing managers implementing resilience enhancement programs and to lay the groundwork for subsequent empirical research.

Keywords: emergency nurses, psychological resilience, resilience assessment, influencing factors, intervention strategies, review

1. Introduction

The emergency department serves as the hospital's frontline for treating critically and severely ill patients, characterized by complex and rapidly changing conditions, intensive rescue tasks, frequent emergency incidents, and tense nurse-patient relationships. As core members of the emergency team, emergency nurses must not only possess solid professional skills but also cope with high-intensity physical exertion, frequent night shifts, direct exposure to death, and verbal or even physical violence from patients and their families. Subjected to this high-stress environment over extended periods, emergency nurses have become a high-risk population for anxiety, depression, post-traumatic stress disorder (PTSD), and occupational burnout.

Notably, however, nurses in the same environment exhibit vastly different psychological adaptation outcomes: some experience severe emotional exhaustion and turnover intention, while others maintain a positive attitude and continue to grow amid difficulties. A key psychological variable underlying this difference is psychological resilience[1-2].

Psychological resilience (resilience), originally derived from developmental psychology research on children facing adversity, has been widely applied in occupational health psychology in recent years. For emergency nurses, psychological resilience is not merely a "shield" against stress damage but also an ability to recover from adversity and achieve growth. Existing research has shown that emergency nurses with high psychological resilience exhibit lower occupational burnout, higher empathy and job satisfaction, and significantly reduced turnover intention. Therefore, identifying and enhancing psychological resilience among emergency nurses has become an important entry point for nursing managers to improve team stability and nursing quality.

However, current research on psychological resilience among emergency nurses still exhibits the following issues: vague conceptual connotations, often confused with "stress tolerance" or

"psychological capital"; diverse assessment tools but lack of localized versions adapted to the emergency context; intervention studies mostly involve small samples with short cycles and low standardization of intervention protocols. Based on this, this article employs a literature review methodology to systematically organize research on psychological resilience among emergency nurses, clarify its conceptual dimensions, compare the advantages and disadvantages of different assessment tools, and summarize influencing factors and effective intervention strategies to provide references for future theoretical research and clinical practice[3-5].

2. Conceptual Connotations and Theoretical Models of Psychological Resilience

2.1. Historical Evolution of the Concept

The term "resilience" originates from the Latin word "resilio," meaning "to spring back" or "to rebound." In the field of psychology, the definition of psychological resilience has undergone three stages of evolution.

Stage 1: Trait Theory. Early researchers viewed psychological resilience as a stable personality trait or ability inherent to individuals, believing that some people are naturally more stress-resistant. For example, Block defined psychological resilience as a personal trait through which individuals adapt to environmental demands and effectively regulate their sense of self-control. Although this perspective facilitates measurement, it neglects the interaction between environment and individuals.

Stage 2: Process Theory. Influenced by ecological developmental psychology, researchers began to understand psychological resilience as a dynamic adaptation process—whereby individuals mobilize internal and external resources during adversity, successfully cope, and maintain normal functioning. Scholars such as Rutter and Masten emphasized that psychological resilience is not fixed but develops through the interaction of specific risk factors and protective factors.

Stage 3: Outcome Theory. Some researchers defined psychological resilience from an outcome perspective—the state in which individuals maintain good mental health or functional levels after experiencing significant adversity. This definition offers strong operability but easily confuses resilience with "mental health" itself.

Currently, the academic community tends to adopt a comprehensive definition: psychological resilience is a multi-dimensional, dynamic process wherein individuals face significant adversity, trauma, or stress, enabling positive adaptation, recovery, and possible growth, encompassing both personal traits and learnable skills. For the emergency nurse population, the American Nurses Association (ANA) specifies this as: the ability of nurses to effectively manage stress, maintain professional competence, and achieve continuous development by utilizing personal and organizational resources in stressful clinical work environments [6-7].

2.2. Distinction from Related Concepts

When understanding psychological resilience among emergency nurses, it is necessary to distinguish it from the following concepts:

Psychological Capital: Psychological Capital encompasses self-efficacy, hope, optimism, and resilience as four dimensions, with resilience being only one sub-dimension. Psychological capital emphasizes positive psychological development states, while resilience emphasizes the process of coping with adversity.

Stress Tolerance: Stress tolerance focuses on an individual's threshold for withstanding stress and is static, whereas resilience includes post-stress recovery and growth and is dynamic.

Compassion Fatigue: Compassion fatigue is a secondary traumatic response resulting from repeated exposure to others' trauma, representing a negative outcome of resilience. Nurses with high resilience exhibit lower compassion fatigue levels, but the two are not opposite poles.

Coping Style: Resilience is a comprehensive capability, whereas coping styles are specific behavioral or cognitive strategies. Individuals with high resilience tend to adopt positive coping strategies (such as problem-focused coping or seeking support), but the two are not equivalent.

2.3. Resilience Theoretical Models Applicable to Emergency Nurses

Richardson's biopsychosocial resilience model is one of the most widely applied models. This model proposes that when facing life challenges, individuals attempt to maintain a state of biopsychosocial balance. When adversity exceeds an individual's current protective factors, the balance is disrupted, and the individual subsequently undergoes a reintegration process. The outcomes of reintegration are divided into four types: resilient reintegration (achieving a higher level of balance), return to baseline (restoring original balance), loss reintegration (forming a lower level of balance), and dysfunctional reintegration (exhibiting maladaptive outcomes). According to this model, psychological resilience interventions for emergency nurses should focus on: increasing protective factors (such as social support and self-efficacy), reducing risk factors (such as frequency of trauma exposure), and assisting nurses in achieving a higher level of "resilient reintegration."

Luthar's ecological system resilience model emphasizes that resilience is nested within a multi-level system: individual level (genes, personality, cognitive abilities), family/peers level (colleague support, family understanding), organizational level (scheduling systems, leadership styles), and sociocultural level (nurse professional status, media image). This model suggests that enhancing psychological resilience among emergency nurses cannot rely solely on individual psychological training but requires system-level organizational reform[8-9].

3. Assessment Tools for Psychological Resilience in Emergency Nurses

Accurate measurement of psychological resilience forms the basis for identifying high-risk groups and evaluating intervention effectiveness. At present, dozens of resilience scales have been developed domestically and internationally, among which the following have been applied to or validated in the emergency nurse population.

3.1. Connor-Davidson Resilience Scale (CD-RISC)

The CD-RISC was developed by Connor and Davidson in 2003, containing 25 items divided into five dimensions: personal competence, tolerance of negative emotions, positive acceptance of change, sense of control, and spiritual influences. This scale is the most widely used resilience measurement tool internationally and has been translated into multiple languages. The Chinese version of the CD-RISC was revised by domestic scholar Yu et al., retaining 25 items with a Cronbach's alpha coefficient above 0.89. Applications in the emergency nurse population have shown that the CD-RISC can effectively differentiate nurses with varying burnout levels, with scores positively correlated with job satisfaction and negatively correlated with turnover intention. Its advantages include high reliability and relatively clear dimensions; its disadvantages include a larger number of items (25 questions), potentially reducing compliance in busy clinical settings.

3.2. Brief Resilience Scale (BRS)

The BRS was developed by Smith et al., containing only 6 items and is currently the shortest self-assessment resilience scale. Its core items include "I can recover quickly from stressful events" and "I do not fall apart easily when facing difficulties." The BRS's advantage lies in its extreme brevity, making it suitable for rapid screening among emergency nurses. The Chinese version of the BRS was validated in the nurse population with a Cronbach's alpha of 0.82. Its disadvantage is the lack of multi-dimensional detailed information, inability to differentiate among different components of resilience (such as personal competence versus social resource utilization), and suitability only as an initial screening for overall resilience levels.

3.3. Healthcare Resilience Scale (HRS)

The HRS is a resilience scale specifically developed for healthcare professionals, created by American scholars Hunter et al., containing dimensions such as personal initiative, self-care, and work role adaptation. However, its application in emergency nurses has been limitedly reported. Domestic scholar Li Zheng et al. developed the Nurse Psychological Resilience Scale (NPRS) based on the Chinese cultural background, containing four dimensions—self-efficacy, emotional regulation, interpersonal connection, and professional identity—comprising 28 items. This scale has been validated to a certain extent among domestic emergency nurses, showing a moderate negative correlation with the MBI

burnout scale.

3.4. Recommendations for Selecting Assessment Tools

For large-sample screening or pre-intervention assessment: BRS is recommended for efficiency and time-saving.

For longitudinal follow-up or multi-dimensional analysis: CD-RISC-25 or NPRS is recommended.

For emergency context-specific adaptation: Future research should develop an "Emergency Nurse Resilience Scale" incorporating items related to trauma exposure, resuscitation failures, and violent incidents—emergency-specific stressors, such as "I can recover my work confidence within one week after experiencing a patient resuscitation failure."

4. Factors Influencing Psychological Resilience in Emergency Nurses

4.1. Individual Factors

Age and Work Experience: Research results are not entirely consistent. Most studies show that middle-aged nurses (30-40 years) have higher resilience levels, while newly hired nurses and near-retirement nurses have lower levels. New nurses lack coping experience and have not yet solidified professional identity, while senior nurses may experience reduced resilience due to long-term cumulative occupational burnout. However, some studies have found no linear relationship between work experience and resilience, instead presenting a "U-shaped" or wavy pattern.

Gender and Educational Level: Male nurses are relatively few in emergency departments. Existing research indicates that male nurses tend to suppress emotions when facing traumatic events, potentially having lower total resilience scores than female nurses, but scoring higher on the "action-oriented coping in difficult situations" dimension. Nurses with bachelor's degrees or above typically have higher resilience levels than those with associate degrees due to stronger learning abilities, cognitive flexibility, and resource acquisition capabilities.

Personality Traits: Individuals high in conscientiousness and openness from the Big Five personality dimensions have stronger resilience, while those high in neuroticism have significantly reduced resilience. Additionally, self-efficacy and internal locus of control are important predictive variables for resilience—nurses who believe "I can control the situation" are better able to learn from experience rather than fall into self-blame, even when facing resuscitation failures.

Trauma Exposure History: Repeated experiences of patient death and witnessing family grief are daily occurrences for emergency nurses. Moderate challenging exposure may promote resilience growth ("stress inoculation" effect), but extremely frequent exposure or a single major traumatic event (such as being stabbed with a sharp instrument by a patient) may lead to decreased resilience. Individuals' post-traumatic growth (PTG) ability plays a moderating role in this process[10].

4.2. Organizational and Social Factors

Colleague and Supervisor Support: This is the most consistently demonstrated strong environmental buffering factor to date. When nurses feel that "the nurse manager understands me" and "colleagues will actively help," their resilience scores significantly increase. Support is reflected not only in verbal encouragement but also in concrete behaviors, such as someone actively covering during resuscitation or management firmly defending nurses' rights during medical disputes.

Family Support and Work-Family Conflict: Due to frequent night shifts and holiday work requirements, emergency nurses often miss family gatherings. Family support from spouses' understanding and parents' help with childcare can significantly enhance nurses' resilience resources. Conversely, severe work-family conflict can greatly deplete resilience reserves.

Scheduling Systems and Workload: Long-term mandatory overtime and frequent "day-night-off" rotating shifts disrupt circadian rhythms and sleep quality, thereby impairing emotional regulation ability and leading to decreased resilience. Research shows that departments implementing self-scheduling or fixed team models have significantly higher nurse resilience levels.

Career Development Opportunities: Narrow promotion pathways and limited continuing education

opportunities for emergency nurses create a "ceiling effect," causing nurses to perceive career prospects as bleak, thereby reducing resilience. Providing nurses with specialist nurse training, research guidance, and academic conference participation opportunities can significantly enhance their resilience perception.

4.3. Cumulative Effect of Protective Factors

Single protective factors have limited effects; the formation of resilience is the result of multi-factor accumulation. For example, a newly hired young nurse, if (1) naturally optimistic, (2) has a very supportive preceptor, and (3) the department has a standardized psychological assistance plan, may have higher resilience levels than a senior nurse with strong personal abilities but in an indifferent organizational climate. This means intervention strategies should cover protective factors as comprehensively and multi-dimensionally as possible.

5. Intervention Strategies for Psychological Resilience in Emergency Nurses

Research on resilience interventions for emergency nurses has been increasing annually. Based on intervention targets, these can be divided into three major categories: individual-oriented, team-oriented, and organization-oriented interventions.

5.1. Individual-Oriented Interventions

Mindfulness-Based Stress Reduction (MBSR): Mindfulness training cultivates non-judgmental awareness of present-moment experiences, helping nurses reduce rumination and enhance emotional regulation abilities. The typical protocol is an 8-week course (2.5 hours of group sessions plus 45 minutes of home practice daily). Many domestic studies have compressed this into a "brief" version (4 weeks, once weekly, 90 minutes per session). RCT studies on emergency nurses show that after brief mindfulness intervention, the intervention group's CD-RISC scores improved by an average of 23%, with effects partially maintained at 3-month follow-up. The core mechanism is releasing resilience capacity by reducing perceived stress and emotional exhaustion.

Cognitive-Behavioral Resilience Training: Based on Rational Emotive Behavior Therapy (REBT) or Cognitive Behavioral Therapy (CBT) principles, this approach helps nurses identify and restructure irrational beliefs, such as "If I fail in resuscitation, it's my fault" or "I must satisfy all patient and family demands." This is conducted through group workshops or online self-help modules. An experiment targeting emergency nurses showed that after 6 cognitive-behavioral group training sessions (60 minutes each), the intervention group had significantly higher psychological resilience and self-efficacy than the control group.

Expressive Writing Intervention: Requiring nurses to regularly write deep thoughts and emotions related to stressful events (typically in the form of "20 minutes of continuous writing for 3-4 consecutive days") can promote emotional catharsis and cognitive integration. Post-traumatic writing can help nurses construct meaning from traumatic events and enhance resilience. However, some research indicates that for individuals with deep trauma, writing may trigger short-term distress and should be conducted under professional guidance.

Online Self-Help Psychological Resilience Courses: Given the fragmented time availability of emergency nurses, developing mobile app or WeChat mini-program courses (containing short video explanations, audio mindfulness guidance, and daily resilience check-in tasks) has become increasingly popular. Preliminary research found that nurses completing 4-week online self-help resilience training showed no significant difference in BRS score improvement compared to offline group training, though compliance needs improvement.

5.2. Team-Oriented Interventions

Balint Groups: Originally developed to improve doctor-patient relationships and reduce burnout, Balint groups have recently been used to enhance resilience. In these groups, emergency nurses share a nurse-patient interaction case that has troubled them; group members hypothesize the patient's possible psychological states from different perspectives, enabling the presenting nurse to gain new perspectives and emotional release. Through 8-10 group sessions, nurses' emotional endurance and ability to understand others are enhanced, directly translating into the "interpersonal connection" dimension of resilience.

Peer Support Groups: Nurses with extensive crisis-coping experience are selected within the department as "peer supporters" to regularly organize informal gatherings and share tips for coping with stress (such as "how to fall asleep quickly after a night shift" or "how to reassure family members about my emotions"). This peer group acceptance and modeling effect can enhance novice nurses' self-efficacy and sense of belonging, thereby improving resilience.

Mental Health First Aid Training: This trains emergency nurses to recognize signs of psychological crisis in colleagues (such as persistent irritability, alcoholism, or absenteeism) and learn how to provide initial support and referrals. This "empowering everyone" model creates a culture of mutual vigilance in the department, indirectly enhancing everyone's sense of being supported, thereby improving resilience.

5.3. Organization-Oriented Interventions

While organization-level interventions have not received sufficient attention, they may be the most fundamental and sustainable strategies.

Improving Scheduling Systems: Allow nurses to express scheduling preferences while ensuring minimum staffing levels, implementing "partial self-scheduling"; limit consecutive night shifts to no more than 3 days; arrange "buffer days" (not assigned high-risk rescue tasks) for nurses who have experienced major traumatic events. These measures can reduce chronic fatigue and preserve energy reserves for resilience capacity.

Establishing Employee Assistance Programs: Hospital-level establishment of confidential psychological counseling services and hotlines, actively promoted to emergency nurses. More importantly, it is essential to eliminate cultural barriers that "seeing a psychologist means having problems." A "mandatory administrative + voluntary" combined model can be attempted: for example, all nurses who have experienced pediatric death resuscitation are mandatorily required to attend a crisis debriefing session (normal working hours counted), then referred for individual counseling based on personal preference.

Building Resilient Department Culture: Nurse managers can set up "resilience story sharing" during regular meetings—inviting one nurse each time to share "a recent experience of feeling challenged but successfully coping." This narrative practice can reshape department members' attitudes toward difficulties, shifting from "fearing failure" to "viewing challenges as learning opportunities." Additionally, nurse managers should publicly commend behaviors of proactively seeking help and flexible coping, establishing psychological safety.

Career Development Support: Provide emergency nurses with specialist nursing certification guidance, educational advancement funding, and academic conference participation opportunities. Clear career development pathways enhance nurses' professional identity, which is one of the core psychological resources of resilience.

5.4. Multi-Level Comprehensive Intervention Model

Single interventions often have limited and rapidly decaying effects. In recent years, scholars have proposed a tiered progressive resilience promotion model: primary intervention (mental health education for all + flexible scheduling) covers all emergency nurses; secondary intervention (Balint groups or mindfulness training for medium-low resilience individuals identified through screening) targets vulnerable groups; tertiary intervention (individual counseling or temporary job transfer) targets those who have already developed obvious mental health problems. This tiered response not only conserves resources but also maximizes coverage for nurses with different needs.

6. Research Evaluation and Future Prospects

6.1. Limitations of Existing Research

Inconsistent conceptual operationalization: Some studies equate resilience with stress tolerance or lack of negative emotions, making comparisons between different studies difficult. Future research should adopt a composite definition including both "adversity" and "adaptation" components.

Inconsistent measurement tool calibration: The same study may show high resilience when measured by CD-RISC but may not necessarily show the same with BRS. Future research should use at least one

multi-dimensional scale and one brief scale simultaneously to cross-validate results.

Predominantly cross-sectional designs: The vast majority of influencing factor studies are cross-sectional surveys, unable to infer causal relationships (for example, does high resilience lead to low burnout, or does low burnout enable higher resilience?). Longitudinal prospective studies and cross-lagged analyses urgently need strengthening.

Low quality of intervention studies: Most interventions have small sample sizes (<50 per group), short follow-up periods (≤ 3 months), and lack active control groups (commonly using no-treatment controls). More large-sample, multi-center, long-follow-up RCTs are needed to confirm long-term intervention effects.

Lack of emergency-specific intervention protocols: Simply applying mindfulness courses designed for all nurses directly in emergency departments does not adequately consider emergency-specific stressors (such as gunshot wounds, hacking incidents, mass poisoning cases, etc.). Future development of "emergency-customized" resilience interventions incorporating scenario simulations and role-playing based on common emergency stress situations is needed.

Extremely few organization-level intervention studies: The vast majority of research focuses on individual psychological training, but as previously discussed, organizational support is the strongest predictor of resilience. Future intervention research should examine nurse manager leadership training and scheduling system reform as independent intervention variables.

6.2. Future Directions

Develop dynamic resilience models for emergency nurses: Use daily diary methods to collect resilience levels and stress events for the same nurse over consecutive weeks, mapping resilience dynamic curves and identifying key time points for resilience fluctuations.

Develop emergency-specific resilience scales: Incorporate items directly related to emergency practice, such as "I can maintain focus on procedures when patients' family members are crying outside the resuscitation room" and "After occupational exposure, I can rationally assess risks and complete the day's work normally."

Explore technology-driven interventions: Utilize virtual reality (VR) to simulate high-stress emergency scenarios, training nurses' emotional regulation abilities in safe environments; use wearable bracelets to monitor heart rate variability, providing real-time reminders for nurses to practice deep breathing relaxation.

Implement nurse manager resilience leadership training: Design specialized courses to train nurse managers in recognizing resilience warning signals in subordinates, providing constructive feedback, and organizing post-traumatic team debriefings. Intervention effects are evaluated through pre-post resilience changes in departmental nurses.

6.3. Conclusion

Psychological resilience among emergency nurses is a multi-dimensional, dynamic, and malleable capability that holds irreplaceable value for coping with occupational stress, maintaining physical and mental health, and ensuring patient safety. Existing research shows that resilience is influenced by various factors including individual personality, organizational support, and scheduling systems; it can be enhanced through mindfulness training, Balint groups, and organizational culture improvement. However, current research still faces key bottlenecks including vague concepts, mixed tools, lack of emergency-specific interventions, and insufficient organizational-level reform. In the future, more high-quality, multi-center, long-cycle experimental research is urgently needed, and hospital managers should be promoted to incorporate resilience building into routine nursing quality management systems. Only by establishing a systematic resilience support network from the individual to the organizational level can we truly protect this group of nurses who "guard life."

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