

Academic Burnout Among Undergraduate Nursing Students Worldwide: A Critical Review of Current Evidence, Challenges, and Future Directions

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ABSTRACT: Academic burnout among undergraduate nursing students is increasingly recognized as a key factor hindering student well-being and the sustainability of the nursing workforce. This review synthesizes research published between 2020 and July 2025, focusing on the prevalence, determinants, and interventions for burnout.

Multilevel analyses suggest that burnout is influenced by individual factors (e.g., low self-efficacy, anxiety, depression), institutional pressures (e.g., rigid curriculum, exam-based assessments, inadequate mentoring), and sociocultural factors (e.g., weak professional identity, limited recognition of nursing). Intervention studies, including resilience training, curriculum reform, and social support programs, show promise but are limited by small scale, inconsistent implementation, and a lack of rigorous empirical evaluation.

Future research should prioritize longitudinal and cross-cultural designs, develop nursing-specific measurement tools, and incorporate empirical findings into curriculum and policy reforms. Reframing academic burnout as a collective responsibility rather than an individual deficiency is crucial for building an emotionally sustainable and professionally resilient nursing education system.

KEYWORDS: Academic burnout; nursing undergraduates; prevalence; determinants; interventions; nursing education reform

1. INTRODUCTION

Academic Burnout as a Systemic Threat in Nursing Education

Globally, the shortage of nurses has been identified as a major threat to healthcare systems. The World Health Organization predicts that by 2030, the shortage of nurses will approach 6 million (Organization, 2020, 2022). This highlights the urgency of training and retaining nursing students. In this context, academic burnout among undergraduate nursing students is not only an individual problem but also a systemic obstacle to the sustainable development of the nursing workforce.

The global demand for highly skilled and emotionally intelligent nurses is growing (Yang et al., 2025), nursing education is becoming increasingly rigorous, placing higher demands on students (Zhang et al., 2023). Undergraduate nursing students, in particular, face a heavy academic workload, an emotionally charged clinical environment, and inadequate support systems (Kong et al., 2021; Quina Galdino et al., 2020). These pressures have led to the alarming prevalence of academic burnout, a phenomenon characterized by emotional exhaustion, alienation, and a decreased sense of achievement (Hu et al., 2022). While burnout has been extensively studied across various professions, including medical students, research on undergraduate nursing students remains

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fragmented and underdeveloped. This review critically examines research on student burnout in nursing education from 2020 to date, highlighting key findings, unresolved challenges, and directions for future research and educational reform.

2. PREVALENCE, RECOGNITION GAPS, AND CONCEPTUAL MISALIGNMENTS

Academic burnout has become a pressing issue in higher education, particularly prevalent among undergraduate nursing students. Studies conducted between 2020 and July 2025 consistently show burnout rates ranging from 22.6% to over 60%(Kong et al., 2021; Pushpa Prakash, 2023; Rui Yang, 2023; Zhou et al., 2022), highlighting not only the severity of the problem but also the variability caused by differences in measurement tools and conceptual frameworks. A recent systematic review further confirms the prevalence of burnout among nursing students, with prevalence exceeding that of many other student groups(Arian et al., 2023).

Despite recent growth in research on burnout in nursing students, a significant imbalance remains. As shown in Table 1, thousands of articles have been published using the keyword "burnout" in databases such as Web of Science and PubMed, but only a small fraction focuses specifically on nursing students (310 in WoS, 184 in PubMed, and 18 in CNKI). Compared to medical students, nursing students are underrepresented, and this neglect may marginalize this population, which is crucial to the human resources of global health systems.

Table 1 Distribution of Academic Burnout Studies across Databases (2020–2025.07)

Category	CNKI	PubMed	Web of Science
Academic Burnout	437	2759	6319
Medical Student	29	493	952
Nursing Student	18	184	310

Furthermore, the existing literature is dominated by cross sectional, descriptive studies, with relatively few longitudinal or intervention based studies. This overreliance has resulted in a fragmented understanding of burnout, failing to explain its temporal trajectory, causal mechanisms, or the interplay between education systems and student well being. Even recent studies linking burnout to psychological correlates such as self efficacy, depression, and insomnia(Alfia Nuriil Firdausi, 2023; Hwang & Kim, 2022; Merino-Soto et al., 2024; Sar et al., 2025), often fail to incorporate these findings.

Perhaps most concerning, conceptual inconsistencies persist. Some studies employed the Maslach Burnout Inventory (MBI), while others used modified or localized instruments. Furthermore, definitions of "burnout" remain divergent across cultures. This conceptual inconsistency reduces the potential for cross cultural research and the relevance of these findings for guiding international nursing education reform.

In summary, current prevalence research suggests an urgent need to address burnout among nursing students, but it still suffers from limitations such as inadequate descriptive language, inconsistent conceptualization, and insufficient theoretical depth. Addressing these limitations requires more uniform definitions, multinational studies, and longitudinal evidence linking burnout prevalence to curriculum design and policy environments.

3. MULTILEVEL DETERMINANTS OF ACADEMIC BURNOUT

Academic burnout among undergraduate nursing students is a product of the interplay between the individual, the educational environment, and the broader sociocultural context. Recent research (2020-2025.07) emphasizes the need to move beyond narrow, individual level studies to a comprehensive, multi level analysis of nursing student burnout.

3.1 Individual Level Factors: Psychological Vulnerabilities and Coping

Numerous studies have highlighted the role of individual traits in predicting burnout. Low self efficacy, academic procrastination, and poor adaptation to the environment are often considered predictors of higher levels of academic burnout (Alfia Nuriil Firdausi, 2023; Yuelin & Guanghua, 2024). Emotional problems such as anxiety, depression, and insomnia are also associated

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with student exhaustion and decreased academic performance(Sar et al., 2025).A 2024 cross sectional study in Peru showed that low emotional intelligence exacerbated burnout and reduced academic performance among nursing students (Merino-Soto et al., 2024). Similarly, a study in Iran emphasized that motivation and students' ability to cope with stress significantly influenced the risk of academic burnout (Sharififard et al., 2020).

However, overemphasizing the impact of mental health on academic burnout may individualize the research question. Nursing students are often perceived as lacking mental resilience and unable to cope with stress, which may exacerbate the stigma of seeking help and neglect the relevant responsibilities of the education system.

3.2 Institutional Level Factors: Curriculum, Pedagogy, and Resources

At the educational level, the combination of undergraduate nursing's intensive theoretical curriculum and grueling clinical practice creates a "double burden" for students(Committee, 2018; Juanamasta et al., 2022). A Brazilian study found that students in traditional programs reported lower satisfaction and higher levels of burnout than those in integrated programs, highlighting the serious consequences of outdated teaching methods(Batista et al., 2021).

The educational assessment system further exacerbates student stress, as students often view grades as the sole measure of their abilities(Kong et al., 2021). While some schools have piloted flipped classrooms or process based assessments, the extent of implementation remains inconsistent across institutions(Quina Galdino et al., 2020). A recent meta analysis confirms that schools with weak academic support systems and insufficient guidance have higher rates of student burnout(Arian et al., 2023).

Furthermore, insufficient teaching resources remain a recurring problem. High student teacher ratios limit personalized instruction(Eloff, 2023), and mental health counseling is often stigmatized(Ning et al., 2022). These deficiencies exacerbate students' feelings of isolation and helplessness, weakening their resilience.

3.3 Sociocultural and Professional Factors: Identity, Recognition, and Environment

Beyond the classroom, sociocultural factors also shape students' professional identity and influence burnout rates. Nursing is often perceived globally as an assistant to physicians, which undermines the profession's social recognition and students' sense of professional value(Mao et al., 2021). In China, weak professional identity is directly correlated with nurses' higher turnover intentions, with many nursing graduates not pursuing nursing careers after graduation(Hu et al., 2022; Yuelin, 2023).

Social support systems play a protective role in burnout research. Peer support, family functioning, and a sense of belonging have been shown to mitigate academic stress and burnout in students(Vargas-Madriz & Konishi, 2021; Yang et al., 2025; Yuhuan et al., 2022). However, universities rarely institutionalize peer support mechanisms, leading to their underutilization.

Environmental conditions are also important for studying academic burnout. Recent research has highlighted that campus infrastructure and green spaces can alleviate stress and improve emotional well being(J. Krishnaiah, 2024; Konstantinidis, 2024; Nie et al., 2024). However, these variables are rarely incorporated into burnout research, representing an underexplored frontier.

In summary, burnout among undergraduate nursing students reflects a multifaceted ecological landscape. Individual issues such as low self efficacy are exacerbated by institutional deficiencies such as rigid curricula and inadequate support, further compounded by a sociocultural undervaluation of the nursing profession. Therefore, addressing burnout requires not only individual level interventions but also systemic reforms in educational policies, professional recognition, and campus resources.

4. INTERVENTION LANDSCAPE AND EVIDENCE GAPS

In recent years, research on interventions targeting burnout in undergraduate nursing students has steadily increased, as reflected in the literature published between 2020 and July 2025. Figure 1 illustrates this upward trend. Despite this progress, several key gaps remain: interventions are often fragmented, short term experiments, and rarely undergo rigorous evaluations, such as randomized controlled trials (RCTs) or longitudinal studies. Furthermore, most studies remain confined to a specific context (the COVID-19), limiting the generalizability of findings across countries and institutions.

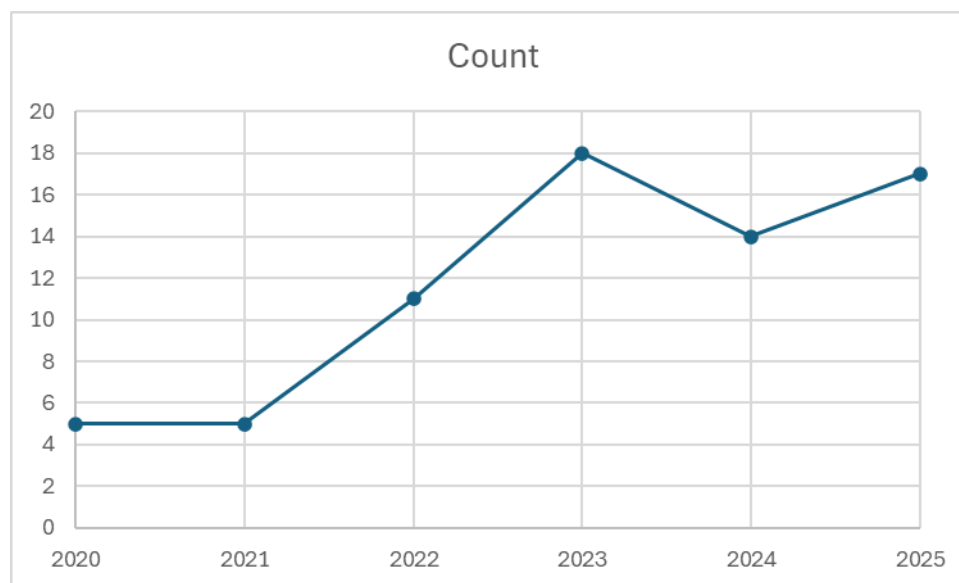


Figure 1 Number of articles on burnout intervention in nursing education in the past six years

4.1 Individual Level Interventions: Helpful, But Not Sufficient

Many interventions focus on enhancing students' coping skills and resilience. For example, Alfia Nuriil Firdausi (2023) demonstrated that improving self-efficacy and implementing social support training can reduce symptoms of burnout among Indonesian students. Similarly, the promotion of mindfulness and stress management programs has shown potential to improve students' emotional regulation (Veigh et al., 2021). In Latin America, Merino-Soto et al. (2024) suggest that improving students' emotional intelligence can mitigate the development of academic burnout.

While these interventions are readily available, they often remain student-centered, limiting their sustainability and scalability. Without institutional reinforcement, their effectiveness can quickly fade. Furthermore, because these interventions primarily focus on individual students, they risk perpetuating the perception that students have low stress tolerance, thereby obscuring the structural and systemic factors that influence academic burnout.

4.2 School Level Interventions: Conceptually Sound, Operationally Weak

School based interventions aim to reform curricula, improve teaching quality, and expand academic support for students. For example, Batista et al. (2021) compared students in integrated and traditional courses and found that students in the integrated courses reported lower burnout and higher satisfaction, suggesting that course structure plays a crucial role. Similarly, Quina Galdino et al. (2020) highlighted the potential of hybrid teaching approaches to reduce stress in clinical training.

However, large-scale implementation of such interventions remains limited. In a systematic review and meta-analysis, Arian et al. (2023) found that while strategies such as curriculum redesign and improving the student-faculty ratio are frequently proposed, empirical validation is limited. Counseling and mentoring services are also underutilized (Ning et al., 2022). Recent qualitative evidence suggests that supportive learning environments, including adequate infrastructure and dedicated instructors, can significantly mitigate burnout (Eloff, 2023; Konstantinidis, 2024), but these factors are rarely incorporated into school-based interventions.

Overall, school level interventions demonstrate conceptual strengths but suffer from operational and evaluation limitations. Many measures are still in the pilot stage rather than systemic reforms.

4.3 Social and Policy-Level Interventions: Emerging but Uneven

At the societal level, peer and family support systems have been shown to mitigate burnout. For example, Yang et al. (2025) found that family functioning had a protective effect on academic self-efficacy, while Yuhuan et al. (2022) used structural equation modeling to demonstrate that social support could buffer the effects of academic stress. Vargas-Madriz & Konishi (2021)

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further confirmed that a sense of belonging at school mediates the relationship between social support and student academic engagement.

National policies also address student mental health. In China, Education (2021) issued guidelines to strengthen psychological support for university students, including nursing students. However, implementation has been uneven, with disparities persisting across institutions. Evidence suggests that peer-led interventions and informal support networks hold promise (Yuelin, 2023), but systematic evaluation of their effectiveness is lacking.

Despite these ongoing efforts, societal interventions remain fragmented and unequal, often dependent on institutional or cultural contexts. The lack of standardized models makes it difficult to scale effective interventions across regions.

In summary, intervention research conducted between 2020 and 2025 demonstrates significant concern about burnout in nursing students. Individual interventions (e.g., self-efficacy training, mindfulness programs) can provide short-term relief, while school-level reforms (e.g., integrated curriculum, psychological counseling services) remain inconsistently applied. Societal and policy-level interventions, while gaining increasing attention, lack robust implementation and evaluation.

A critical limitation across all levels is the lack of methodological rigor. Few studies targeting undergraduate nursing students have employed randomized controlled trials, mixed methods, or long-term follow-up, raising uncertainty about the true effectiveness and scalability of interventions. Without addressing these issues, interventions risk remaining theoretical ideals rather than practical solutions. Future research must prioritize the development of rigorous evaluation mechanisms, cross-cultural adaptation, and the systematic integration of interventions into nursing curricula and healthcare systems.

5. FUTURE DIRECTIONS: TOWARD MULTILEVEL, TRANSFORMATIVE AND GLOBALLY RELEVANT RESEARCH

Despite the growing attention paid to academic burnout among nursing students, current research remains fragmented, overly descriptive, and insufficiently policy oriented. To advance the field, future studies should move beyond documenting prevalence to proposing transformative, evidence based frameworks. Several priorities can be identified.

5.1 Need for Building Multilevel Theoretical Frameworks

Existing research largely relies on the Job Demands Resources Model or the Maslach Burnout Inventory (MBI) and its modified version. These adapted models often fail to account for the specific characteristics of nursing education. Future research urgently needs to integrate ecological systems theory and the biopsychosocial model, linking micro level factors (individual psychology), meso level factors (school and curriculum), and macro level factors (healthcare policies and cultural norms). Such integration will facilitate a more nuanced understanding of how nursing students internalize and cope with burnout in diverse educational and sociopolitical contexts.

5.2 Promoting diversity and rigor in research methods

The literature from 2020–July 2025 shows that most studies remain cross sectional, with only a handful of intervention trials or mixed methods designs. Future research should:

- A longitudinal study will be conducted to track burnout trajectories from enrollment to graduation, encompassing critical periods such as clinical practice and professional transitions.
- A mixed methods and qualitative approach will be employed to capture students' lived experiences and contextualize quantitative findings within the educational and cultural context.
- Controlled trials and multi center interventions will be combined, as current interventions often lack generalizability and long term evaluation.

5.3 Expanding cross cultural and comparative research

Most research on nursing students has focused on China and a few other countries, leaving significant research gaps in low and middle income regions, where nursing shortages are most severe. Cross cultural comparative research is crucial to understanding how educational systems, cultural values, and healthcare systems differentially influence nursing student burnout

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across different contexts, thereby identifying solutions that are both globally relevant and adaptable to local circumstances.

5.4 Designing Nursing Specific Measurement Tools

While various burnout scales exist, they were largely developed in Western contexts and do not adequately account for nursing specific stressors such as clinical workload, professional identity formation, and hierarchical dynamics in hospitals. Developing customized nursing education scales can improve measurement accuracy and intervention targeting.

5.5 Linking Research to Policy and Curriculum Reform

Although existing research indicates high rates of burnout among nursing students, this has not translated into systematic nursing curriculum reform. Future research should directly explore:

- How can nursing curricula be restructured to balance academic rigor and student well being?
- Which indicators (e.g., resilience, professional identity, well being) should be included in nursing curriculum evaluations?
- How can national education policies institutionalize mental health support programs, particularly for nursing and medical students?

5.6 From informative research to transformative research

Ultimately, burnout research should go beyond educating educators about their students' plight; it should be committed to transforming the educational landscape. Future research must focus on designing data based, scalable, and culturally adapted interventions to meet the needs of caregivers worldwide. Only through this transformative research can burnout be reframed as a systemic problem rather than a personal student deficit.

6. CONCLUSION: REFRAMING ACADEMIC BURNOUT AS A COLLECTIVE AND POLICY RESPONSIBILITY

Academic burnout among undergraduate nursing students is a persistent, multifactorial phenomenon that threatens not only the physical and mental health of students but also the sustainability of the global nursing workforce. This review highlights that while existing research provides valuable descriptive data, it also suffers from key limitations: an overemphasis on individual psychological variables, a lack of rigorous intervention evaluation, and insufficient consideration of institutional, cultural, and policy contexts.

To make progress, scholars and educators must shift their perspective from viewing burnout as a personal failure of students to a systemic signal of educational dysfunction. Universities should integrate mental health and professional identity development into their curricula, governments should implement policies to ensure students have access to counseling and support, and researchers should ensure that such guidance is available.

Addressing academic burnout requires more than just resilience training; it requires reimagining nursing education to balance academic achievement with student well being, foster technical competence alongside professional identity, and support nursing students in their journey to becoming future healthcare professionals.

The future of nursing depends not only on students' knowledge and skills but also on their resilience, professional identity, and commitment to continuing in the profession. Therefore, reframing academic burnout as a shared responsibility among educators, schools, and policymakers is crucial to ensuring student success and the stability of the global nursing workforce.

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