



Stress and Coping Strategies Among Undergraduate Nursing Students: A Systematic Review

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<https://doi.org/10.53926/YNJR/0021>

<https://ynjr.in/>

Abstract

Background: Undergraduate nursing students experience substantial psychological stress from academic demands, clinical training, and professional transitions, compromising academic performance, clinical competence, patient safety, and workforce retention. **Objectives:** This systematic review synthesizes empirical evidence on stress prevalence, stressors, and coping strategies among undergraduate nursing students to inform educational interventions and institutional policy. **Methods:** Systematic searches of PubMed, Scopus, EBSCOhost, ScienceDirect, and Cochrane Library (2016–2024) used keywords: nursing students, stress, coping strategies, academic stress, clinical stress. **Inclusion criteria:** undergraduate nursing students, English-language, peer-reviewed studies reporting stress or coping outcomes. PRISMA guidelines guided screening; JBI tools assessed quality. Narrative synthesis analyzed 192 moderate-to-high quality studies. **Results:** Moderate-to-high stress affected 59–99% of students; mean Perceived Stress Scale scores ranged 20.52–22.78. Predominant stressors included academic workload, clinical instructors' evaluative practices, patient care responsibilities, and financial constraints. Problem-solving, social support, religious practices, and acceptance correlated with reduced stress; avoidance, denial, and self-blame predicted adverse outcomes. Interventions (reflective journaling, acupressure, structured programs) demonstrated efficacy. **Conclusion:** Nursing students globally experience substantial stress requiring targeted responses. Evidence supports curriculum redesign, preceptor training, embedded coping skills education, and accessible mental health resources to enhance well-being and professional preparedness.

Keywords: Nursing students; Stress; Coping strategies; Clinical training; Academic stress; Mental health

INTRODUCTION

Undergraduate nursing education develops competent practitioners capable of delivering safe, evidence-based patient care. However, nursing students experience disproportionately elevated psychological stress compared to peers in other disciplines, with profound implications for educational outcomes, professional development, and healthcare sustainability [1,2,3]. Stress—the physiological and psychological response when perceived demands exceed coping resources—manifests across academic and clinical domains. Academic stress arises from heavy workloads, examinations, and time management challenges, while clinical stress stems from patient care responsibilities, skill performance under supervision, and ethical dilemmas [4,5,6].

Global prevalence data reveal concerning patterns. WHO World Mental Health Surveys indicate 20.3% of college students meet criteria for mental disorders, with nursing students showing higher rates than general populations [7,8]. Consequences include impaired cognitive function, reduced clinical decision-making capacity, compassion fatigue, burnout, and program attrition [9,10,11]. Critically, stress-induced errors in clinical judgment directly threaten patient safety [12,13]. Pre-registration stress predicts post-qualification burnout and early career departure, undermining workforce sustainability [14,15].

Lazarus and Folkman's transactional model posits that coping strategies mediate stress-outcome relationships [16]. Adaptive strategies (problem-solving, social support) buffer stress

effects, while maladaptive approaches (avoidance, denial) amplify distress. Despite extensive primary research across diverse contexts, synthesis of global evidence remains fragmented. Existing reviews often focus on single countries or specific stressors, limiting generalizability [17,18]. Furthermore, rapid evolution of nursing education—including technology integration, pandemic disruptions, and changing clinical environments—necessitates updated synthesis.

This systematic review addresses these gaps by comprehensively synthesizing empirical evidence on stress prevalence, common stressors, and coping strategies among undergraduate nursing students globally. Specific objectives are: (1) quantify stress prevalence and severity across contexts; (2) identify predominant stressors in academic and clinical settings; (3) characterize positive and negative coping strategies and their associations with outcomes; and (4) evaluate intervention effectiveness. Findings will inform evidence-based educational interventions, institutional policies, and future research priorities to enhance student well-being and professional preparedness.

METHODS

This systematic review followed PRISMA guidelines. Systematic searches were conducted in PubMed, Scopus, EBSCOhost, ScienceDirect, and Cochrane Library for studies published January 2016–December 2024. Search terms combined: "nursing students" AND ("stress" OR "psychological stress") AND ("coping strategies" OR "coping

mechanisms") AND ("academic stress" OR "clinical stress"). Boolean operators and database-specific filters optimized retrieval.

Inclusion criteria: (1) undergraduate nursing students; (2) quantitative, qualitative, or mixed-methods designs; (3) English language; (4) peer-reviewed journals; (5) outcomes measuring stress levels, stressors, or coping strategies. Exclusion criteria: postgraduate students, non-nursing healthcare students, grey literature, non-English publications.

Initial searches yielded 1,847 records. After duplicate removal (n=644), 1,203 records underwent title-abstract screening; 847 were excluded. Full-text review of 356 articles led to exclusion of 164 studies due to quality concerns or eligibility mismatches. Final analysis included 192 studies.

Quality appraisal employed JBI Critical Appraisal Tools appropriate to study design. Two independent reviewers assessed methodological rigor, sampling adequacy, measurement validity, and analytical appropriateness. Disagreements were resolved by a third reviewer. Only moderate-to-high quality studies were retained.

Narrative synthesis involved thematic grouping of findings, tabular comparison of study characteristics, and pattern identification across contexts. Heterogeneity in measurement instruments and study designs precluded meta-analysis. Synthesis focused on convergent evidence regarding stress prevalence, stressor domains, coping strategy typologies, and intervention outcomes.

RESULTS

Level of Stress Among Nursing Students

Moderate-to-high stress was near-universal, affecting 59% (Ghana, n=89) to 99% (Nigeria, n=204) of students [19,20]. Perceived Stress Scale (PSS) scores demonstrated substantial burden: Spain reported mean 22.78 (n=190) [21]; Saudi Arabia mean 20.52±7.59 (n=200) [22]. Indonesian students showed 76.5% moderate and 23.5% severe stress using DASS-42 [23]. A West Bank sample (n=385) found 93.4% experienced moderate stress [24].

Clinical placements triggered higher stress than classroom periods [25,26]. First-year and junior students were most vulnerable, reporting greater academic overload and time-management difficulties [27,28]. Measurement heterogeneity (PSS, DASS-42, Coping Behaviour Inventory, Student Nurse Stress Index) limited direct cross-study comparisons. Female students reported higher stress in several studies, though findings were inconsistent [22,29].

Common Stressors

Academic workload ranked highest across settings [30,31,32]. Clinical instructors and evaluative practices constituted a top stressor in the Philippines (mean 3.01, n=191) and were prominent in Saudi and Palestinian samples [33,34,31]. Patient care responsibilities and clinical skill gaps generated fear of errors and anxiety over unfamiliar procedures [25,35]. Interpersonal conflicts—conflicting instructions from nurses, feeling ignored—were salient in Ghana [19, 36].

Financial and personal concerns were prominent in the West Bank (n=385) and sub-Saharan African contexts [24]. Time management and role ambiguity particularly affected first-year students [27,37]. Sheu's 2002 Nursing Stress Scale established a foundational taxonomy replicated across cultures [26]. Kumar et al. identified workload and lack of professional support as dual dominant stressors [38].

Positive Coping Strategies

Problem-solving was the most frequently reported adaptive strategy across multiple settings [25,21,39]. Social support and peer networks were widely used and associated with lower stress [21,40]. Religious and spiritual coping were prominent in Middle Eastern and African samples [22,41]. Acceptance and cognitive reframing were highly utilized in the West Bank sample (n=385), where self-distraction, acceptance, and humour predominated [24]. Nigerian students reported 64.7% used optimistic coping [20].

Intervention evidence demonstrated efficacy. Reflective journaling reduced anxiety in first clinical rotations [42]. Acupressure (HT7, Yintang points) significantly reduced VAS and state-anxiety scores [43]. Resilience and family functioning conferred 2-fold lower odds of high stress during COVID-19 [44]. Structured institutional programs showed measurable improvements [40,45].

Negative Coping Strategies

Avoidance was the strongest predictor of adverse psychological well-being in final-year students (n=171) [46]. Self-blame, denial, and wishful thinking positively correlated with higher PSS scores [21]. Chinese nursing students showed denial and self-blame predicted elevated stress [47]. Social withdrawal associated with increased anxiety and depression [21,39]. Substance use and disengagement were identified as downstream consequences of unresolved stress [48].

Maladaptive coping was more prevalent when institutional support was absent [14,15]. Emotion-focused avoidant strategies linked to burnout trajectories [35]. Negative coping associated with intention to leave nursing programs [29].

DISCUSSION

Level of Stress Among Nursing Students

Near-universal moderate-to-high stress reflects structural features of nursing education rather than individual deficiency. Lazarus and Folkman's transactional model explains stress as arising when demands exceed resources—nursing education systematically creates this imbalance through simultaneous academic and clinical demands [16]. Cross-cultural consistency suggests systemic rather than culturally specific drivers.

Variation in severity (59% vs 99%) partly reflects measurement heterogeneity and contextual factors (resource-limited settings, COVID-19 disruptions). Clinical placement as a stress peak aligns with dual-role demands (student and quasi-practitioner) and evaluative vulnerability [25,26]. Gender differences may reflect socialization patterns and

differential help-seeking rather than inherent vulnerability [22,29].

Workforce implications are substantial. Pre-registration stress predicts post-qualification burnout [15] and links to attrition [14], threatening healthcare system capacity. Early intervention is therefore both ethically imperative and economically prudent.

Common Stressors

Academic workload dominance is consistent with broader higher education literature but amplified in nursing by concurrent clinical requirements [30,31]. Clinical instructor roles as stressors reveal pedagogical tension: instructors simultaneously support and evaluate students, creating evaluative anxiety [33,34]. Cross-cultural replication (Philippines, Saudi Arabia, Palestine) suggests this is a universal feature requiring systemic attention.

Sheu's 2002 taxonomy remains empirically robust across two decades [26], though contemporary stressors (digital overload, pandemic disruption) warrant updated frameworks. Financial and personal stressors disproportionately affect students in lower-income contexts—structural inequality intersects with educational stress [24]. Role ambiguity in clinical settings reflects curriculum design gaps: insufficient preparation for clinical realities [27,37].

Positive Coping Strategies

Problem-solving coping aligns with Lazarus and Folkman's primary appraisal model: students who reframe challenges as manageable demonstrate better outcomes [16,25,21]. Cross-cultural prevalence of religious coping in Middle Eastern and African samples reflects spirituality's buffering role in collectivist societies—institutional programs should acknowledge cultural context [22,41].

Social support effectiveness is corroborated by Cohen and Wills' buffering hypothesis: peer networks and faculty mentorship reduce stress appraisal [49]. Intervention evidence (journaling, acupressure) demonstrates that brief, low-cost strategies can be embedded in clinical curricula without structural overhaul [42, 43]. Structured coping skills training within curricula produces measurable improvements [40], [45]. Resilience-building programs that develop psychological flexibility alongside clinical competence produce graduates better equipped for professional demands [44].

Negative Coping Strategies

Avoidance coping's predictive relationship with adverse well-being reflects learned helplessness theory: repeated uncontrollable stressors lead to passive disengagement [50]. Self-blame and denial represent cognitive distortions that amplify stress perception rather than addressing sources [21], [47]. Institutional absence of support structures correlates with maladaptive coping adoption [14,15].

Avoidant coping in students predicts emotional exhaustion in early career—early intervention is cost-effective for workforce retention [35]. Attrition findings underscore economic and

safety implications: students who cannot cope leave programs, exacerbating global nursing shortages [29]. Substance use and disengagement, while less systematically measured, represent the extreme end of maladaptive coping requiring proactive screening [48].

CONCLUSION

Moderate-to-high stress is near-universal among undergraduate nursing students globally, spanning academic, clinical, interpersonal, and financial domains. Adaptive coping strategies—problem-solving, social support, religious practices—associate with better outcomes, while avoidance and self-blame predict deterioration. The evidence base supports targeted institutional interventions.

Nursing education programs must embed stress literacy and coping skills training. Policymakers should mandate mental health resources in nursing schools. Clinical placement design should reduce evaluative anxiety through structured mentorship. Workforce sustainability depends on addressing pre-registration stress proactively, as student distress predicts post-qualification burnout and attrition.

RECOMMENDATIONS

Institutional: Establish dedicated counseling services, peer mentorship programs, and structured stress management workshops within nursing curricula. Ensure accessible, stigma-free mental health support.

Curriculum: Integrate coping skills modules (problem-solving, time management, resilience training) into early clinical preparation. Review academic workload to prevent overload.

Clinical Placement: Train preceptors and clinical instructors in supportive supervision. Reduce punitive evaluative practices. Implement structured mentorship models.

Policy: Mandate mental health screening at program entry and mid-program. Develop national standards for student well-being in nursing education. Allocate resources for evidence-based interventions.

Research: Conduct longitudinal studies tracking stress trajectories from pre-registration to early career. Standardize measurement tools for cross-study comparability. Evaluate intervention effectiveness using randomized controlled trial designs. Investigate contemporary stressors (digital overload, pandemic impacts).

SOURCE OF FUNDING

The authors declare that no funding was received for this study.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ACKNOWLEDGEMENT

The authors declare that there are no acknowledgements for this study.

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