International Journal of Social Impact
ISSN: 2455-670X
Volume 10, Issue 3, DIP: 18.02.059/20251003
DOI: 10.25215/2455/1003059
www.ijsi.in |July - September, 2025

Research Paper

Effectiveness of a Structured Teaching Programme on Enhancing Resilience among B.Sc. Nursing Students in Bangalore

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ABSTRACT

Background: Nursing students are frequently exposed to academic, emotional, and clinical stressors that can impact their mental well-being and academic performance. Resilience, the ability to adapt positively in the face of adversity is recognized as a key protective factor, yet structured resilience training remains underutilized in Indian nursing education. **Objective:** To evaluate the effectiveness of a structured teaching programme in enhancing resilience among second-year B.Sc. Nursing students in Bangalore. **Methods:** A one-group pre-test post-test design was employed with a sample of 30 second-year nursing students from a selected college. Resilience levels were assessed using the Nicholson McBride Resilience Questionnaire (NMRQ) before and after a five-session structured intervention. The programme focused on stress management, emotional regulation, cognitive restructuring, and problem-solving. Data were analyzed using paired t-tests, percentage change and effect size estimation. **Results:** The mean resilience score increased from 37.8 (pre-test) to 42.6 (post-test), representing a 12.7% improvement. The difference was statistically significant ($p < 0.001$), with a large effect size (Cohen's $d = 0.87$). Notable improvements were observed in subdomains such as confidence and emotional regulation. These results are consistent with previous international and Indian studies, reinforcing resilience as a teachable skill. **Conclusion:** The structured teaching programme was effective in significantly enhancing resilience among nursing students. Findings highlight the need to integrate resilience training into nursing curricula to support students' psychological well-being and academic success. Further research with control groups and long-term follow-up is recommended.

Keywords: *Resilience, Nursing Students, Structured Teaching Programme, Mental Health, India, NMRQ, Stress Management, B.Sc. Nursing*

Resilience, broadly defined as the capacity to bounce back from adversity and stress, is recognized as a crucial psychological trait in nursing education and practice. Nursing students face a unique constellation of stressors ranging from academic pressure, emotional exhaustion, high-stakes clinical experiences, to confrontations with human suffering that can undermine their well-being and performance (Hart et al., 2014). Effective coping and adaptive strategies are therefore essential not only to their academic success but also to their mental health maintenance and future professional competence. In the context of nursing education in India, additional layers of challenge often compound

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Received: July 28, 2025; Revision Received: August 01, 2025; Accepted: August 04, 2025

these stressors. Cultural norms around mental health, limited institutional resources, and a lack of structured psychological support systems frequently leave students vulnerable to stress and burnout. Moreover, stigma associated with seeking support and a curricular focus that prioritizes clinical and technical skills over emotional or psychological development can further marginalize resilience-building efforts among nursing students in India. While resilience training interventions have gained traction internationally particularly in Western nursing curricula such programs remain underdeveloped and underutilized in the Indian setting (Sharma & Kaur, 2021). There is thus a clear need to develop, implement, and evaluate structured interventions tailored to the Indian nursing education environment. Existing literature underscores that resilience is not an immutable trait but rather a dynamic, teachable skill that can be enhanced through structured training. Meta-analyses, such as Joyce et al. (2018), demonstrate that resilience training programs often combining cognitive restructuring, stress management, mindfulness, and social support components can significantly bolster resilience and reduce psychological distress among healthcare students and professionals. However, much of that evidence remains rooted in Western populations, with relatively sparse empirical data from India. Some recent Indian studies such as those exploring resilience as a protective factor during COVID-19 highlight correlations between resilience and quality of life but do not evaluate intervention effectiveness.

A handful of intervention studies in India have focused on related constructs such as compassion fatigue, burnout, and recovery in nursing staff, showing that resiliency and recovery programs reduce secondary traumatic stress and improve compassion satisfaction. Nevertheless, targeted resilience training in undergraduate nursing curricula remains under-explored. In this context, implementing a structured teaching programme to build resilience among B.Sc. Nursing students represents an important contribution to both educational practice and psychological well-being frameworks. This study targets second-year B.Sc. Nursing students in Bangalore, a cohort often at a critical junction where clinical exposure intensifies and academic demands escalate. By assessing resilience before and after a structured teaching intervention, the study aims to illuminate both baseline resilience levels and the potential for improvement through intentional training. Using the Nicholson McBride Resilience Questionnaire (NMRQ) which measures key dimensions such as confidence, adaptability, emotional regulation, purposefulness, and social support the study operationalizes resilience in a validated, multi-dimensional format. The primary objectives of this investigation are twofold: To assess the baseline resilience levels among participating second-year B.Sc. Nursing students using the NMRQ and to evaluate the effectiveness of a structured resilience training programme in improving resilience levels, as indicated by changes in mean NMRQ scores in a pre-test/post-test (one-group) design.

This intervention is modular, combining evidence-based strategies such as stress-management techniques (e.g., relaxation exercises, time-management), cognitive restructuring (challenging negative thoughts), emotional regulation skills (mindfulness, expressive writing), problem-solving, and fostering peer and social support networks. The programme is delivered via interactive sessions and is designed to be culturally relevant, contextually appropriate, and feasible within the constraints of an Indian nursing college setting. It is anticipated that this structured approach will yield a statistically significant improvement in resilience scores, reflecting resilience as a modifiable and teachable skill. If found effective, the intervention would support recommendations to integrate resilience training modules into nursing curricula in India aligning educational policy with psychological well-being and the demands of a high-stress healthcare environment. By

situating this study in Bangalore, a major urban education center with diverse student demographics, we also hope to contribute to the growing body of Indian empirical evidence on resilience interventions in nursing education. If successful, the programme can be adapted and scaled across nursing institutions throughout India to help address systemic stressors and support student well-being.

METHODOLOGY

This study utilized a one-group pre-test/post-test quasi-experimental design to evaluate the effectiveness of a structured teaching programme aimed at enhancing resilience among second-year B.Sc. Nursing students in Bangalore. A single cohort of students was assessed at baseline (pre-intervention) and immediately after completion of the programme (post-intervention), allowing comparison of resilience scores within the same individuals. This design was selected because it is feasible in educational settings and permits detection of within-subject changes over time, although it lacks a control group for comparison. Statistical significance was determined using paired-sample t-tests, and percentage improvement was calculated to quantify the magnitude of change.

Sample and Setting

Participants were recruited from a selected nursing college in Bangalore, encompassing all second-year B.Sc. Nursing students who volunteered and provided informed consent. Inclusion criteria required that students be enrolled in the second year and available for all intervention sessions. Exclusion criteria included prior participation in formal resilience training programmes. Anticipating potential drop-out, the researchers aimed to enroll at least 30 participants to achieve adequate statistical power, based on a moderate effect size (Cohen's $d \approx 0.5$) detectable with paired t-tests at $\alpha = 0.05$ and power $(1 - \beta) = 0.80$. Sample demographics (e.g. age, gender, socioeconomic status, urban/rural background) were collected via a sociodemographic pro forma to characterize the cohort and assess generalizability.

Instrument: Nicholson McBride Resilience Questionnaire (NMRQ)

Resilience was measured using the Nicholson McBride Resilience Questionnaire (NMRQ), a 12-item self-report instrument designed to assess individual resilience across key dimensions including confidence, adaptability, purposefulness, social support, and emotional regulation. Each item is rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), yielding a total score range of 12 to 60, with higher scores indicating greater resilience. The NMRQ has demonstrated acceptable psychometric properties in prior studies: for example, Pilafas et al. (2020) reported internal consistency of Cronbach's alpha = 0.80 in a Greek validation sample (N = 1,158). Although not previously validated among Indian nursing students, this study piloted the instrument with 10 students prior to data collection to confirm clarity, cultural relevance, and reliability (Cronbach's alpha pilot ≈ 0.78). Factor structure was assumed to map onto the five theoretical dimensions outlined in the literature and used as subscale scoring where possible.

Intervention: Structured Teaching Programme

The core intervention comprised a five-session structured teaching programme, developed on evidence-based psychological theories and resilience-building strategies appropriate to nursing students' needs. The content was informed by literature on cognitive-behavioural techniques, stress management, emotional regulation, and positive psychology, adapted to the Indian cultural and educational context.

Each session lasted approximately 60–90 minutes and was delivered during regular class hours over a two-week period. The sessions covered:

- Stress Management Techniques: breathing exercises, progressive muscle relaxation, time management strategies, and work–life balance.
- Cognitive Restructuring: identification of negative automatic thoughts, reframing to positive or realistic alternatives, and building optimistic explanatory styles.
- Emotional Regulation: mindfulness practice, journaling or expressive writing, and identifying and coping with emotional triggers.
- Problem-Solving and Adaptability: structured problem-solving steps (define, generate options, implement solutions), fostering flexible thinking and adaptability in academic or clinical stressors.
- Purposefulness and Social Support: reflecting on personal and professional goals, building peer-support networks, cultivating accountability and positivity.

Each session included interactive components group discussions, role plays, reflective exercises, and peer sharing to increase engagement and internalization. A structured facilitator manual ensured fidelity across all sessions.

Procedure

On Day 1 (pre-intervention), participants completed informed consent and a sociodemographic pro forma, followed by administration of the NMRQ (pre-test). The teaching programme was then delivered across five sessions over two weeks. Immediately following the final session (within two days), participants completed the NMRQ again (post-test). All questionnaires were administered in paper format under supervision to reduce response bias. Data entry was double-checked for accuracy.

Data Analysis

Data analysis was conducted using IBM SPSS Statistics (version 25 or higher). Initial descriptive statistics (mean, standard deviation, range) were computed for pre-test and post-test overall resilience scores and subscale scores, if applicable. The differences between pre-test and post-test mean scores were analyzed using paired t-tests, with significance set at $p < 0.001$ to reflect strong evidence against the null hypothesis. The absolute change (post minus pre) and percentage change ((post – pre) / pre × 100%) were calculated to express magnitude of improvement. Additionally, effect size (Cohen's d for paired samples) was computed to estimate practical significance.

Missing data handling: cases with >10% missing items on the NMRQ were excluded; for cases missing fewer items (<10%), mean-imputation of the individual's other items was used.

Ethical Considerations

The study was approved by the Institutional Ethics Committee of the college. Participants were informed about the voluntary nature of the study, confidentiality measures (anonymous coding), and their right to withdraw at any time. All data were stored securely with restricted access.

Quality Assurance and Validity Considerations

Though the one-group design does not control for maturation effects or external events, internal validity was enhanced by consistent instrumentation, standardized delivery across sessions, and close temporal proximity between pre- and post-tests. Pilot testing of the NMRQ aided content validity and cultural relevance. Reliability was assessed via Cronbach's alpha. Facilitators received training and used a manual to maintain intervention fidelity. Social desirability bias was minimized by anonymized response collection and stressing honest self-reflection.

Limitations

Potential limitations include lack of a control or comparison group, preventing ruling out confounders; short-term follow-up, so sustainability of effects beyond immediate post-testing is unknown; and the single-institution sample in Bangalore, which may limit generalizability to other regions or institutions. Future research could implement randomized controlled designs, longer-term follow-up, and multi-site participation.

RESULTS AND DISCUSSION

This study evaluated the effectiveness of a structured teaching programme in enhancing resilience among second-year B.Sc. Nursing students in Bangalore. The analysis revealed a statistically significant improvement in resilience scores following the intervention, supporting the hypothesis that resilience is a teachable and modifiable skill. This section presents a detailed account of the results and interprets the findings in light of existing literature.

Descriptive Statistics of Resilience Scores

The Nicholson McBride Resilience Questionnaire (NMRQ) was used to measure the resilience levels of students before and after the intervention. Table 1 presents the descriptive statistics for the pre-test and post-test resilience scores.

Table 1: Descriptive Statistics of Resilience Scores (N = 30)

Metric	Pre-Test	Post-Test	Difference	% Improvement
Mean Score	37.8	42.6	+4.8	12.7%
Standard Deviation	4.2	4.0	-0.2	–
Minimum Score	30	36	+6	–
Maximum Score	45	50	+5	–

The mean resilience score increased from 37.8 (SD = 4.2) in the pre-test to 42.6 (SD = 4.0) in the post-test, representing a 12.7% improvement. The consistency in standard deviation suggests uniform benefit across the cohort, indicating that students of various initial resilience levels responded positively to the intervention.

Inferential Statistics

A paired t-test was conducted to examine the significance of the improvement in resilience scores after the structured teaching programme. Results showed a statistically significant difference between pre- and post-test scores ($t = 8.72$, $p < 0.001$), indicating the intervention's effectiveness.

Table 2: Paired t-test Results for Resilience Scores

Variable	Mean (Pre)	Mean (Post)	t-value	p-value	Significance
NMRQ Total Score	37.8	42.6	8.72	< 0.001	Significant

The effect size (Cohen's d = 0.87) indicated a large practical significance, further strengthening the evidence that the intervention was impactful and not just statistically relevant.

Analysis of Subdimensions of Resilience

The NMRQ measures five key dimensions: confidence, adaptability, purposefulness, social support, and emotional regulation. Table 3 presents the mean scores in each dimension before and after the intervention.

Table 3: Subscale Analysis of Resilience Dimensions

Dimension	Pre-Test Mean	Post-Test Mean	Difference	% Change
Confidence	7.5	8.8	+1.3	17.3%
Adaptability	7.2	8.1	+0.9	12.5%
Purposefulness	7.6	8.4	+0.8	10.5%
Social Support	7.9	8.6	+0.7	8.9%
Emotional Regulation	7.6	8.7	+1.1	14.5%

All five dimensions showed improvement, with confidence and emotional regulation displaying the most pronounced changes. These results are particularly encouraging because these dimensions are crucial for managing stress in clinical environments and maintaining emotional balance. The significant improvement in resilience scores following the structured teaching programme affirms the intervention's effectiveness. The findings align with previous research, suggesting that resilience can be actively developed through structured psychological and educational strategies. Thomas & Revell (2016) conducted a similar intervention in the UK and reported significant reductions in stress levels and improved coping abilities among nursing students. Their findings support the use of structured, skills-based resilience programmes in nursing curricula. McAllister & McKinnon (2009) emphasized the long-term benefits of incorporating resilience training into health professional education, arguing that such strategies equip students with the emotional strength needed for demanding clinical roles.

In the Indian context, Sharma & Kaur (2021) evaluated mindfulness and emotional regulation training among nursing students and found notable improvements in their coping mechanisms and resilience scores. Their study underscores the need for culturally relevant, localized interventions something that this present study addresses directly. Unlike imported models that may lack cultural sensitivity, the programme designed for this research incorporated components resonant with Indian students, such as group discussions, peer sharing and mindfulness practices contextualized for local relevance. These findings strongly support the premise that resilience is not an innate trait but a teachable and modifiable skill. The structured teaching programme effectively addressed key cognitive, emotional, and behavioral domains, leading to significant gains across all subscales of resilience. Notably, the improvements in confidence and emotional regulation may translate directly into better academic performance, reduced risk of burnout, and improved clinical efficacy. Moreover, the relatively uniform benefit across the cohort reflected in the minimal

variation in standard deviation between pre- and post-tests suggests that such an intervention is broadly applicable, regardless of students' baseline resilience levels. This supports its potential scalability across other nursing institutions in India.

Table 4: Summary of Outcomes and Educational Implications

Key Outcome	Result	Educational Implication
Mean Score Improvement	+12.7%	Curriculum should include structured training
Significant Dimensions	Confidence, Emotion Regulation	Target cognitive-behavioral and mindfulness skills
Statistical Significance	$p < 0.001$	High reliability of effect
Effect Size	$d = 0.87$	Large practical impact

Implications for Practice and Education

These results have several important implications:

- Curriculum Development: Nursing education should incorporate structured resilience training as a core component.
- Policy Recommendation: Institutions should adopt policies to ensure psychological support and resilience-building activities.
- Faculty Involvement: Nurse educators must be trained to deliver psychological interventions effectively.
- Scalability: With consistent results, the model could be applied across different regions and healthcare educational settings in India.

Limitations and Future Directions

While the findings are promising, the study is not without limitations. The one-group pre-post design lacks a control group, limiting internal validity. The sample was restricted to one institution, which may affect generalizability. Future studies should adopt a randomized controlled trial (RCT) design, with larger and more diverse samples and longitudinal follow-up to assess long-term retention of resilience.

CONCLUSION

This study set out to evaluate the effectiveness of a structured teaching programme in enhancing resilience among second-year B.Sc. Nursing students in Bangalore. The findings clearly demonstrate that resilience is a teachable and modifiable psychological skill. A statistically significant improvement in post-test resilience scores, supported by a 12.7% increase in the mean resilience score and large effect size (Cohen's $d = 0.87$), confirms the positive impact of the intervention. Improvements were noted across all five key dimensions of resilience confidence, adaptability, purposefulness, social support and emotional regulation with the greatest gains observed in confidence and emotional regulation. These findings suggest that targeted educational interventions can empower nursing students to better manage academic and clinical stressors, enhancing not only their personal well-being but also their future professional effectiveness. The results are consistent with prior research conducted internationally (Thomas & Revell, 2016; McAllister & McKinnon, 2009) and in the Indian context (Sharma & Kaur, 2021), adding further evidence to the growing consensus that structured resilience-building programmes should be embedded in nursing education. Given the increasing psychological demands faced by nursing students, especially in resource-constrained settings like India, integrating resilience training into the formal

curriculum is both timely and necessary. Educational institutions should invest in the development and delivery of such interventions, supported by trained faculty, as a proactive strategy to safeguard student mental health and promote holistic development. Future research should aim to replicate these findings using randomized controlled trials with larger, more diverse populations and extended follow-up periods to assess the sustainability of the improvements. Nevertheless, the results of this study provide a compelling case for the adoption of structured resilience training as a core component of nursing education in India and beyond.

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Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest
The author(s) declared no conflict of interest.

How to cite this article: Raj, A. & Sharma, M.K. (2025). Effectiveness of a Structured Teaching Programme on Enhancing Resilience among B.Sc. Nursing Students in Bangalore. *International Journal of Social Impact*, *10*(3), 563-571. DIP: 18.02.059/20251003, DOI: 10.25215/2455/1003059