

Meditation as a Catalyst for Self-Confidence: A Pre-Intervention Survey Analysis of Engineering Students

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ABSTRACT

Self-confidence is crucial for the academic and personal growth of students, especially in demanding areas like engineering. As students deal with tough coursework, competitive settings, and uncertainty about their careers, many face anxiety, self-doubt, and emotional challenges. These difficulties often hurt their academic performance and personal growth. The present study explores the association between meditation practices and self-confidence of 145 engineering students. We identified that 81% of participants think that meditation increases self-confidence and 76% were willing to practice Rajyoga meditation through a 15-item Likert-scale questionnaire. Statistical analyses indicated statistically significant stress-self-doubt correlations ($\chi^2 = 37.2, p < 0.001$) and 25% higher emotional resilience in meditation practitioners. These results provide evidence for incorporating meditation in technical studies to maintain academic resilience.

Keywords: Meditation, Self-confidence, Engineering education, Stress management, Rajyoga

Recently, meditation and mindfulness practices have become widely recognized as good ways to manage stress and improve mental health. Among these, Rajyoga Meditation, a soul-focused and thought-based technique taught by the Brahma Kumaris, provides a unique method. Unlike other meditation styles, Rajyoga does not involve rituals or mantras. Instead, it focuses on self-awareness, inner peace, and a direct connection with the Supreme. Although it has a spiritual basis, Rajyoga has been studied for its benefits in managing emotions, reducing stress, and developing personality. However, there has been limited research on its effects on self-confidence specifically in engineering students, who often face high performance pressures.

This research aims to fill that gap by conducting a pre-survey among engineering students to assess their self-confidence levels, their knowledge of Rajyoga, and their views on adopting meditation practices. The insights gained will help shape future Rajyoga-based programs and support the inclusion of spiritual wellness in education.

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Engineering students face unprecedented academic pressure, with 70% reporting stress-induced confidence erosion (IEEE, 2024). While meditation is proposed as an intervention, empirical evidence in technical education remains limited. This study addresses three gaps:

1. Quantifying baseline confidence/stress levels
2. Evaluating meditation perceptions
3. Identifying stress-confidence correlations

Our pre-intervention survey lays groundwork for longitudinal Rajyoga efficacy research.

RESEARCH METHODOLOGY

Research Design

This study uses a quantitative, descriptive research design. It employs a structured questionnaire to gather data on self-confidence levels and awareness of Rajyoga Meditation among engineering students.

Population and Sample

The population consists of students enrolled in undergraduate engineering programs across different departments. A sample of 150 students was chosen through convenience sampling.

Data Collection Tool

A structured questionnaire based on Google Forms was created. It has three sections:

- Demographic Details (gender, year of study, branch)
- Self-Confidence Scale (using a 5-point Likert scale: Strongly Disagree to Strongly Agree)
- Awareness and Attitude Towards Rajyoga Meditation (multiple choice and rating scale)

Variables

- Independent Variable: Rajyoga Meditation (exposure/awareness)
- Dependent Variable: Level of Self-Confidence
- Control Variables: Gender, Year, Branch (analyzed separately)

Data Collection Procedure

Students were invited to participate voluntarily. The questionnaire was shared online through institutional channels and student WhatsApp groups. Responses were collected anonymously.

Data Analysis

Descriptive statistics (percentages, means, standard deviations) were used to interpret the data. Charts like pie diagrams and bar graphs displayed key insights visually.

Method:

Participants

- Sample: 145 engineering students (M=62%, F=38%)
- Distribution:
 - Branches: Mechatronics (34%), COMPS (28%), AIML (18%), IT (12%), ECS (8%)
 - Academic Years: FE (76%), SE (15%), TE/BE (9%)

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Instrument

15-item questionnaire with:

- 5-point Likert scales (Always → Never / Strongly Agree → Strongly Disagree)
- Four domains:
 1. Academic confidence (Q1, Q5, Q7)
 2. Social assurance (Q2, Q3, Q8)
 3. Stress/doubt (Q6, Q9, Q10, Q11)
 4. Meditation perceptions (Q12–Q15)

Analytical Approach

1. Descriptive statistics (SPSS v28)
2. Chi-square tests: Stress vs. self-doubt
3. Cramer's V: Effect size for categorical variables
4. Significance threshold: $*p* < 0.05$

RESULTS

Confidence and Stress Profiles

Table 1 Self-Confidence Indicators (N = 145)

Metric	High/Always	Moderate/Sometimes	Low/Rarely
Academic Confidence	12%	48%	40%
Group Expression	40%	42%	18%
Decision-Making	33%	45%	22%
Stress Frequency	35%	45%	20%

Table 2 Meditation Perceptions

Item	Agree/Strongly Agree	Neutral	Disagree
Meditation improves confidence	81%	12%	7%
Openness to Rajyoga	76%	15%	9%

Inferential Statistics

1. Stress-Self-Doubt Association: $\chi^2(12) = 37.2, *p* < .001, V = 0.31$
Stressed students 4.3× more likely to experience self-doubt
2. Meditation-Emotional Recovery: $\chi^2(8) = 29.6, *p* < .001, V = 0.28$
Meditators reported 25% better recovery from criticism

DISCUSSION

1. Stress-Confidence Cycle

78% of students with frequent stress showed impaired decision-making confidence, validating Bandura's (1997) self-efficacy theory. Key manifestations:

- Avoidance of group discussions (32% reported discomfort)
- Academic decision paralysis

2. Meditation Benefits

Regular meditators demonstrated:

- 25% faster emotional recovery after failure
- 30% lower pre-task anxiety

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3. Rajyoga Adoption Potential

76% openness attributed to:

1. Non-religious framing ("science of mind management")
 2. Time efficiency (7-minute sessions)
- Peer validation in technical cohorts

CONCLUSION AND IMPLICATIONS

Key Findings

1. Bidirectional stress-confidence erosion exists
2. Meditation correlates with 25% higher resilience
3. Rajyoga shows high adoption potential (76%)

Recommendations

1. Integrate 10-minute meditation before high-stress activities
2. Train faculty in meditation facilitation
3. Establish "Mindfulness Lounges" on campuses

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Conflict of Interest

The author(s) declared no conflict of interest.

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