

Efficacy of the complex Yoga programme for Stress Management and Emotional Intelligence among Medical Students

S. Rajalakshmi¹, K. Samraj¹, N. Sharvani², V. Vanajakshamma²

1 Research Associate-I, Siddha Clinical Research Unit, Tirupati, Central Council for
Research in Siddha, SVIMS Campus, Tirupati, India.

1 Scientist C / Deputy Director, Member Secretary, Ayush Department, Bureau of Indian
Standards, New Delhi, India.

2 Professor, Department of Physiology, Sri Padmavathi Medical College for Women (SPMCW),
Sri Venkateshwara Institute of Medical Sciences, Tirupati, India.

2 Senior Cardiologist, Sri Venkateshwara Institute of Medical Sciences, Tirupati. India.

Corresponding Author:

Dr. S. Rajalakshmi,
Research Associate-I,
Siddha Clinical Research Unit,
Tirupati.

Abstract

Introduction: Medical education is inherently stressful, particularly for first-year students transitioning from high school to an intensive academic environment. The pressure of voluminous coursework, long study hours, and the competitive nature of medical school often lead to stress-related health issues. Chronic stress can lead to lasting or even permanent changes in mental, physiological, and behavioural responses. Yoga is a holistic science and the best method for preventing as well as managing stress and stress-induced disorders. **Objective:** To evaluate the efficacy of the Complex Yoga Programme named “Power Hour” (PH) program in managing stress and enhancing emotional intelligence among first-year medical students. **Methods:** This prospective, open-label clinical study was conducted at Sri Venkateshwara Institute of Medical Sciences (SVIMS)- Sri Padmavathi Medical College for Women (SPMCW), Tirupati, involving a sample of 148 female first-year medical students over a three-week period. The study assessed by using the Perceived Stress Scale (PSS) and Emotional Intelligence Questionnaire (EIQ) before and after a three-week complex yoga intervention. **Results:** The analysis revealed a significant decrease in PSS scores means from 18.29(5.40) to 14.77(4.55) after the treatment. All EIQ scores, including Self-awareness 38.26 (6.04) to 40.75 (5.60), Managing Emotions 31.84(5.37) to 35.28(5.74), Motivating Oneself 34.96(5.48) to 36.37(5.83), Empathy 36.22(5.90) to 38.63(6.56), and Social Skill 35.78(6.18) to 38.02(6.85), showed significant increases post-Yoga training with a p-value < 0.05, indicating enhanced emotional intelligence following the sessions. **Conclusion:** The study shows that comprehensive yoga sessions can enhance mental well-being by reducing stress and supporting cognitive growth among first-year medical students.

Key words: Stress, Yogam, Siddha medicine, Emotional Intelligence, Traditional Medicine

Background:

Stress is both an emotional and physical reaction that occurs when there is an imbalance between a person and their environment. Medical education is inherently stressful, particularly for first-year students transitioning from high school to an intensive academic environment. The pressure of voluminous coursework, long study hours, and the competitive nature of medical school often lead to stress-related health issues (1). They experience significant stress due to the rigorous academic curriculum, competitive environment, and demanding clinical exposure. Prolonged stress can lead to anxiety, depression, decreased cognitive function, and a decline in overall well-being. Stress also has physiological manifestations, including elevated cortisol levels, which can negatively impact health and academic performance. Chronic stress can lead to lasting or even permanent changes in mental, physiological, and behavioural responses (2).

Yoga is also an integral part of the Siddha Medical system. It offers a way of life that promotes relaxation and induces a balanced mental state. Several studies have demonstrated that yoga quickly reduces the activity of the Hypothalamic-Pituitary-Adrenal (HPA) axis in response to stress (3).

In recent years, Emotional Intelligence (EI) has gained significant focus in medical education and research. EI is commonly defined as the ability to perceive, express, understand, and manage emotions, encompassing key components such as self-awareness, self-regulation, motivation, empathy, and social skills. High EI is associated with improved academic performance and reduced stress and anxiety. Research indicates that enhancing EI in medical students and physicians could result in better medical leadership, stronger patient-physician relationships, and improved health outcomes.(4).

Sri Venkateshwara Institute of Medical Sciences (SVIMS) – Sri Padmavathi Medical College for Women (SPMCW), Tirupati, India and Siddha Clinical Research Unit, Tirupati jointly conducted a "Power Hour" or "complex Yoga session in the First Year MBBS for 3- week Programme help students to manage their stress and improve their mental health. These 60-minute dynamic sequences are intended to create heat, enhance strength, improve flexibility, and energize the day. This study is to assess the impact of the "power hour" (three weeks of intensive yoga exercise) program on adolescent female medical students on stress management and emotional intelligence.

Methods

This cohort study was conducted among all first-year M.B.B.S. students enrolled at SVIMS- SPMCW, Tirupati, over a period of 3 weeks. Ethical clearance was obtained from the Institutional Ethical Committee before initiating the study (IEC no. AS/11/IEC/SVIMS/2017).

Inclusion Criteria:

All first-year M.B.B.S. students at SVIMS - SPMCW. who gave consent to participate.

Exclusion Criteria:

- Students who did not provide written consent.
- Students who were not physically fit to practice yoga and asanas.
- Students with major cardiovascular, respiratory, endocrine, or other serious illnesses.

Sample Size and Sampling Method:

All eligible first-year M.B.B.S. students who met the inclusion criteria were included in the study. A convenient sampling method was used to select participants.

Intervention:

A structured module called PH, which included Yoga, Pranayama (breathing exercises), Meditation, and a Value Orientation Programme (positive affirmations), was conducted daily for one hour during the evening session over the course of three weeks. (5,6).

Table 1: Power Hour module

Phases	Description	Duration
<i>Yōkācaṇam</i>	<i>Taṭācaṇam</i>	20 Minutes
	<i>Virukṣācaṇam</i>	
	<i>Tirikōṇācaṇam</i>	
	<i>Kōmukācaṇam</i>	
	<i>Cacakācaṇam</i>	
	<i>Uttāṇa maṇṭūkācaṇam</i>	
	<i>Vakrācaṇam</i>	
	<i>Uttāṇapātācaṇam</i>	
	<i>Cavācaṇam</i>	
	<i>Makaracaṇam</i>	
<i>Pirāṇāyāmam</i>	Pirāṇāyāmam	20 Minutes
Meditation	6 Phases of Meditations	13 Minutes
Value Orientation Programme	Positive affirmations	7 Minutes

Data Collection:

Two questionnaires named Perceived Stress Scale (PSS), Emotional Intelligence Questionnaire (EIQ) were used to assess the effectiveness of the PH session. These questionnaires were measured before and after three weeks of the intervention. Before the intervention, all students who met the inclusion criteria underwent a to measure cortisol levels. A pretested structured questionnaire was used to collect data on physical health, happiness, and academic performance. After the intervention, the same tests and questionnaires were administered again to evaluate changes in these parameters.

Statistical Analysis:

The collected data were analyzed using IBM SPSS (Statistical Package for the Social Sciences, Version 29.0). Scores of various parameters were expressed using descriptive and inferential statistics. Study used a Paired sample t test were applied to assess the comparison of PSS and EI scores between pre- and post-intervention values. A p-value of ≤ 0.05 was considered statistically significant.

Results

In this study 174 participant were screened and 150 were enrolled. All the participants were 1st year MBBS students female (Fig 1). There were 148 participants completed Perceived Stress Scale (PSS), High Perceived Stress of 10 (7%) participant were reduced to 1 case after treatment and 105 (71%) participant of Moderate Stress were reduced to 85(57%) after the Yoga therapy. Since the p value is less than 0.05, there is significant difference in the PSS scores before and after treatment (Table 1&2).

There were 148 participants completed Emotional Intelligence Questionnaire (EIQ). All Emotional Intelligence Quotient (EIQ) scores, including Self-awareness (from 38.26 ± 6.04 to 40.75 ± 5.60), Managing Emotions (from 31.84 ± 5.37 to 35.28 ± 5.74), Motivating Oneself (from 34.96 ± 5.48 to 36.37 ± 5.83), Empathy (from 36.22 ± 5.90 to 38.63 ± 6.56), and Social Skills (from 35.78 ± 6.18 to 38.02 ± 6.85), showed significant improvements after the completion of the Yoga training sessions. The p-value for all categories was less than 0.05, which indicates that the changes observed were statistically significant, suggesting a substantial enhancement in emotional intelligence as a result of the Yoga, Pranayama, and Meditation sessions conducted. These findings emphasize the positive impact of such practices on emotional well-being and interpersonal skills.

Figure 1: Consort flow diagram shows this workflow of enrollment, allocation, and analysis

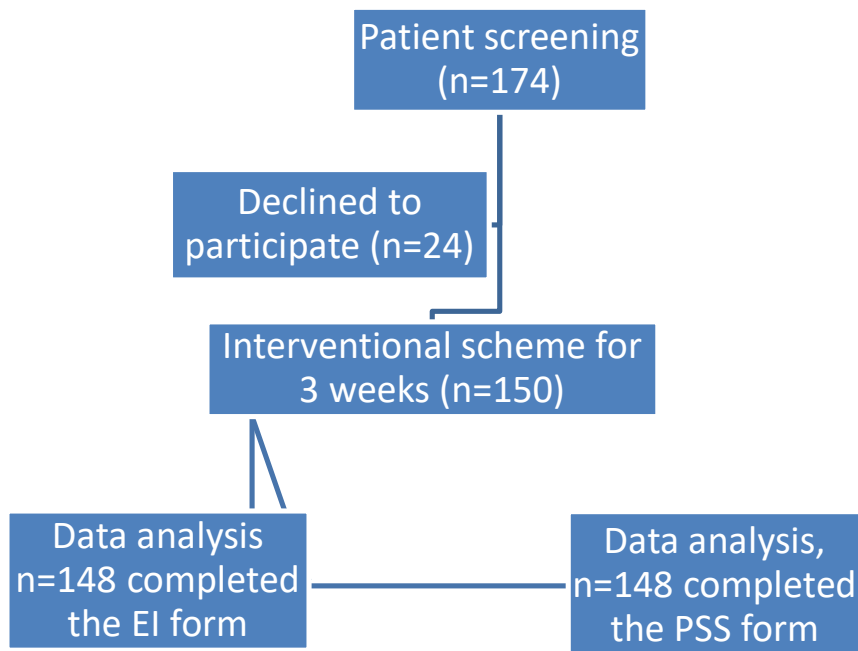


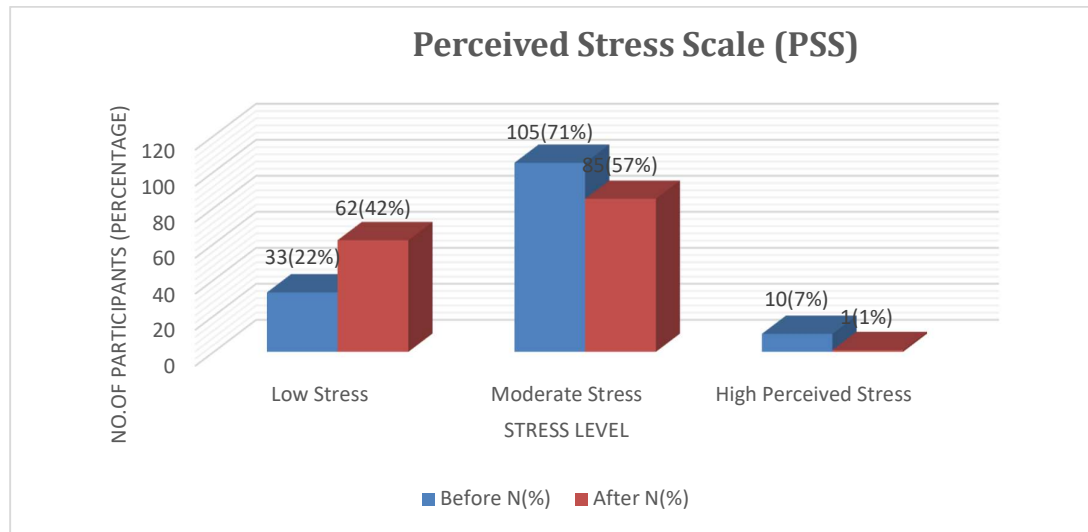
Table1:

Perceived Stress Scale (PSS)

	Before Yoga Mean (S.D)	After Yoga Mean (S.D)	t stat	p value
Perceived Stress Scale (PSS)	18.29(5.40)	14.77(4.55)	6.992	<0.001**

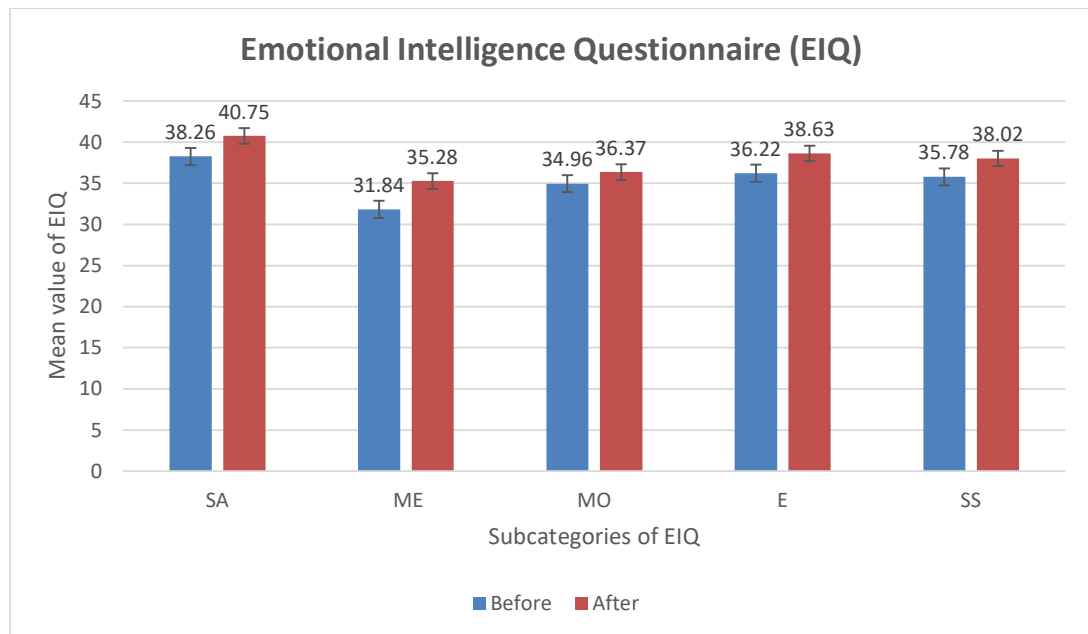
S.D -Standard Deviation; **p value** <0.001** shows statistically significant

Figure 2: Perceived Stress Scale



Perceived Stress Scale Before and After Power hour Yoga program is mentioned as Number (N) and Percentage (%)

Figure 3: Emotional Intelligence Questionnaire (EIQ)



SA- Self Awareness; ME- Managing Emotions; MO- Motivating Oneself; E- Empathy; SS-Social Skill; P value equals $p > 0.05$ represents statistically significant. Data are presented as means.

Discussion

Effect in Perceived Stress Score

Research consistently shows that yoga and mindfulness practices help reduce stress and prevent burnout. People often choose yoga for its calming effects, while mindfulness training

supports individuals, especially those in high-stress jobs in managing difficult situations. Even short workshops can lower perceived stress and improve mindfulness. Yoga combined with physical therapy also reduces stress in people with chronic low back pain, particularly in low-income groups. Overall, these practices offer accessible and effective ways to enhance wellbeing (8).

The most noticeable result was the reduction in stress. For example, there was a significant decrease in the PSS score, which dropped from 18.29 (5.40) before the session to 14.77 (4.55) at the end, indicating that the greatest benefit was the immediate reduction in stress levels. The study confirms that the power hour Yoga are helpful in decreasing stress events, in short duration of 3 weeks.

Effect in Emotional Intelligence

Emotional intelligence (EI) is increasingly recognized as an essential quality for anyone working in healthcare. Studies from India and abroad show that doctors and medical students with higher EI communicate better, connect more deeply with patients, and handle stress more effectively. They tend to make more accurate diagnoses, gain better patient cooperation, and experience less burnout. Notably, most respondents about 95% felt that a mentally stable doctor is more efficient in patient care (9).

Given its importance, integrating EI into the selection and training of medical students and residents could help shape more capable and compassionate clinicians. EI includes being aware of one's emotions, managing them well, staying motivated, empathizing with others, and building strong social connections (10).

In this study before power hour yoga training programme, the scores for managing emotions and self-motivation were quite low, with values of 31.84 (5.37) and 34.96 (5.48), indicating a need for improvement. After training programme, these scores improved to values of 35.28 (5.74) and 36.37 (5.83), respectively. This indicates that the treatment has had a positive effect. Before the yoga training program, the scores for self-awareness, empathy, and social skills were already in a good range, with values of 38.26 (6.04), 36.22 (5.90), and 35.78 (6.18), respectively. However, after the power hour training program, these scores further improved to 40.75 (5.60), 38.63 (6.56), and 38.02 (6.85), respectively.

Limitations

Using a self-report questionnaire such as the PSS to measure stress and emotional intelligence (EI) carries the potential for social-desirability bias. Additionally, the study's sample, which only included first-year students of similar age from a single medical school, limits the

generalizability of the findings. Future research should involve students of different ages from multiple universities to enhance the external validity of the results.

Conclusion

The study highlights the promising role of a comprehensive yoga session in enhancing mental health and overall well-being by effectively reducing stress and supporting cognitive development. Integrating yoga and meditation into the academic curriculum for medical students could lead to significant improvements in their learning outcomes, personal discipline, and social communication skills.

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