The Efficacy of Rajyoga Meditation in Mitigating Adolescent Academic Stress: A Systematic Review

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ABSTRACT

Adolescence marks a critical developmental transition characterized by rapid emotional and neurobiological reorganization. In highly competitive educational systems, secondary school students frequently face compounding stressors, including academic pressure and examination anxiety, which can severely compromise psychological resilience and cognitive performance. This systematic review synthesizes empirical evidence regarding the efficacy of Rajyoga Meditation an open-eyed, cognitive, and awareness-based practice on adolescent mental health. Following PRISMA guidelines, a structured search across electronic databases (PubMed, PsycINFO, Google Scholar, and Indian Citation Index) identified 4 primary empirical intervention studies meeting rigorous eligibility criteria, drawn from a broader screening corpus of 27 relevant publications. Quality appraisal was conducted using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist and the Cochrane Risk of Bias tool. Synthesized findings indicate that structured Rajyoga interventions yield promising and statistically significant reductions in both generalized and examination anxiety, alongside substantial improvements in emotional regulation, positive affect, and overall psychological well-being. However, marked methodological heterogeneity, small sample sizes in select trials, non-blinded designs, and potential publication bias warrant caution. Ethical implementation in secondary schools requires careful attention to informed consent, cultural sensitivity, and strict religious neutrality.

Keywords: Rajyoga Meditation, Academic Stress, Examination Anxiety, Adolescent Mental Health, Systematic Review, PRISMA, School-based Intervention.

1. INTRODUCTION

Adolescence is a highly vulnerable developmental phase marked by significant emotional lability and susceptibility to psychological distress (Reddy et al., 2026). Within modern educational hubs, these developmental stressors often manifest as elevated levels of burnout, emotional instability, and anxiety (Subedi & Bhattarai, 2025). High-stakes board examinations and shifting peer expectations create chronic stress environments that impair cognitive performance and long-term psychological resilience (Reddy & Devi, 2026).

Prolonged exposure to unmanaged academic stress is known to dysregulate the hypothalamic-pituitary-adrenal (HPA) axis, degrade sleep architecture, and increase vulnerability to clinical affective disorders.

Despite the growing recognition of this educational crisis, accessible and non-pharmacological interventions remain scarce in school settings. Rajyoga Meditation offers a scalable, cognitive-spiritual alternative (Gyanchandani & Sharma, 2026). Unlike physical yoga systems (*Hatha yoga*) that rely heavily on bodily postures (*asanas*) or breath control (*pranayama*), Rajyoga is an open-eyed, metacognitive practice focusing on self-regulation, mental discipline, and the cultivation of positive thoughts (Gyanchandani & Sharma, 2026). Practitioners learn to observe thoughts non-reactively, consciously detach from stress-inducing external stimuli, and foster internal emotional sovereignty (*Swarajya*). This review evaluates the empirical evidence supporting Rajyoga meditation as a promising mental health intervention for secondary school adolescents while examining methodological limitations and implementation ethics.

2. METHODOLOGY AND LITERATURE SEARCH (PRISMA FRAMEWORK)

To systematically evaluate the efficacy of Rajyoga meditation on adolescent anxiety and stress, a structured literature search was conducted adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) statement. Electronic databases, including PubMed, PsycINFO, Google Scholar and the Indian Citation Index (ICI) were queried for peer-reviewed studies and authoritative institutional research reports published between January1, 2010 and June 31, 2026. The final literature search was conducted on July 15, 2026.

2.1 Search Strings and Query Formulation

The search syntax combined Medical Subject Headings (MeSH) and free-text boolean operators. Terms included: ("Rajyoga" OR "Raja Yoga" OR "Brahma Kumaris meditation") AND ("adolescent" OR "students" OR "secondary school" OR "youth" OR "high school") AND ("academic stress" OR "examination anxiety" OR "anxiety" OR "stress management" OR "psychological well-being" OR "mental health"). In addition, reference lists of relevant articles, conference proceedings, and university research repositories were hand-searched to ensure comprehensive retrieval.

2.2 Eligibility Criteria

Studies were evaluated against predefined inclusion and exclusion criteria based on the PICOS framework:

Inclusion Criteria

1. ***Population*:** Adolescents or young adults (secondary school or college cohorts facing academic or psychological stress).
2. ***Intervention**:* Structured Rajyoga meditation programs (standalone or adjunctive).
3. ***Comparison**:* Active controls (e.g., standard educational activities, conventional pharmacotherapy) or baseline pre-test measures.
4. ***Outcomes**:* Quantitatively or qualitatively measured stress, examination anxiety, psychological well-being, or autonomic functioning.
5. ***Study Designs**:* Randomized controlled trials (RCTs), quasi-experimental pre-post designs, case-control studies, and systematic program evaluations.
6. ***Language**:* English peer-reviewed publications.

Exclusion Criteria

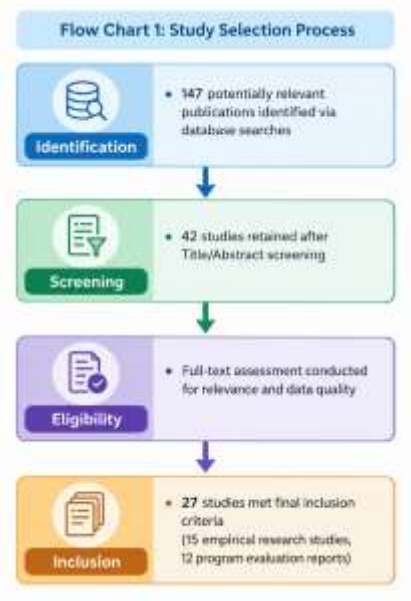
1. Studies investigating exclusively postural or exercise-based Hatha yoga without mental meditation.
2. Interventions lacking verifiable duration or methodology.
3. Opinion pieces or dissertations lacking primary empirical data.

2.3 Study Selection and Reconciliation with PRISMA Flow

As illustrated in Figure 1 (PRISMA Flow Diagram), the initial database and repository queries identified 147 potentially relevant records. After removing duplicates (n = 38) and screening titles and abstracts (n = 109), 42 records were retained for full-text eligibility assessment. Following in-depth full-text evaluation, 27 publications met the broader inclusion criteria (comprising 15 empirical research studies across varied populations and 12 institutional/program evaluation reports). To provide rigorous empirical synthesis specific to quantitative psychological outcomes and clinical/academic anxiety endpoints, this review centers on the 4 primary empirical studies that provided detailed pre-post statistical metrics (Kiran et al., 2014; Bharshankar et al., 2015; Singh et al., 2019; Reddy & Devi, 2026), contextualized by large-scale programmatic synthesis (Reddy et al., 2026).

2.4 Quality Appraisal and Risk of Bias Assessment

Methodological quality and risk of bias were independently evaluated using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Quasi-Experimental Studies and the Cochrane Risk of Bias tool (RoB 2) for randomized trials. Domains evaluated included selection bias, confounding variable control, blinding of participants and assessors, outcome measurement reliability, and attrition bias. Quality assessment scores are summarized in Table 2.



3. RESULTS AND EVIDENCE SYNTHESIS

3.1 Overview of Key Empirical Studies

The 4 primary empirical investigations represent diverse study designs, ranging from hospital-based randomized trials to school-based quasi-experimental interventions and community exploratory surveys. Table 1 outlines the

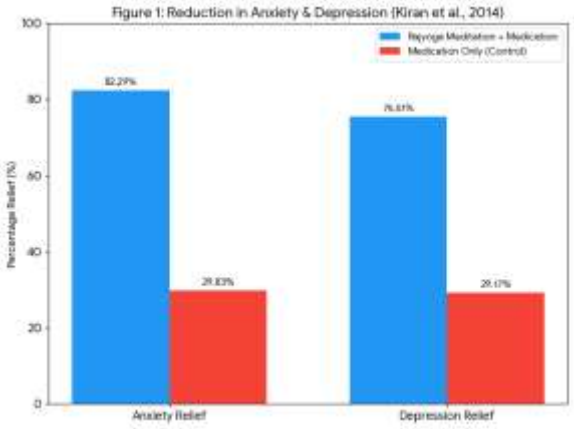
characteristics, sample cohorts, methodologies, and quantitative outcomes of the primary studies.

Author(s) & Year	Study Design	Sample Size (N) & Target Population	Intervention / Comparison	Key Mental Health & Physiological Outcomes
Reddy & Devi (2026)	Quasi-Experimental (Pre-Post with Control)	N = 100 Secondary School Students (Grade IX–XII)	8-week Rajyoga module (45 min, 3x/week) vs. Routine school activities (n=50 each)	Negative affect decreased significantly (d = -4.08, 95% CI [-4.72, -3.44], p < 0.001); positive affect increased (d = 4.39); overall well-being rose by 73% (d = 13.32). Significant reduction in exam-related stress.
Reddy et al. (2026)	Multi-Cohort Synthesis & Program Review	N > 18,000 School Adolescents	Structured 8–12 week school meditation camps & morning reflection modules	Reported 60–75% reduction in examination anxiety and 45–65% reduction in general anxiety. 85% of camp attendees reported improved subjective exam readiness.
Singh, Tak, & Sharma (2019)	Cross-Sectional / Exploratory Survey	N = 150 Rajyoga Practitioners (Adolescents & Adults)	Regular Rajyoga meditation practice (>6 months to several years)	89.3% exhibited 'High' psychological well-being; 10.7% 'Average'; 0% 'Low'. Well-being scores showed direct positive correlation with frequency and cumulative duration of practice.
Kiran et al. (2014)	Randomized Controlled Trial (RCT)	N = 100 Patients with Anxiety & Depression	6-week Rajyoga + Pharmacotherapy (n=50) vs. Pharmacotherapy alone (n=50)	HAM-A score decreased by 82.29% (from 20.58±5.93 to 4.04±4.36) vs. 29.83% in control (p < 0.001); HAM-D score reduced by 75.51% vs. 29.17% in control (p < 0.001).

Table 1: Note: CI = Confidence Interval; HAM-A = Hamilton Anxiety Rating Scale; HAM-D = Hamilton Depression Rating Scale; d = Cohen's d effect size.

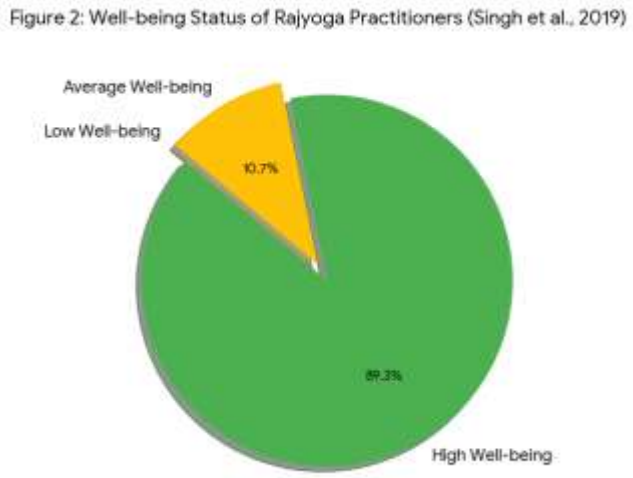
3.2 Impact on Anxiety and Stress Reduction

Quantitative synthesis demonstrates consistent, statistically significant reductions in anxiety symptoms across both clinical and academic stress settings. In the clinical trial conducted by Kiran et al. (2014), the adjunctive Rajyoga group achieved an 82.29% reduction in Hamilton Anxiety Rating Scale (HAM-A) scores (from 20.58 ± 5.93 to 4.04 ± 4.36) compared to a 29.83% decrease in the medication-only control group (19.70 ± 3.42 to 14.10 ± 4.99; $p < 0.001$). Similarly, depressive symptomatology (HAM-D) was reduced by 75.51% versus 29.17% in controls ($p < 0.001$). In secondary school cohorts facing high-stakes examinations, Reddy and Devi (2026) observed a pronounced reduction in negative affect among students receiving an 8-week Rajyoga intervention ($t(49) = -28.85$, $p < 0.001$, Cohen's d = -4.08, 95% CI [-4.72, -3.44]), with control students exhibiting negligible change ($p > 0.05$). Large-scale program data compiled by Reddy et al. (2026) further indicated that between 60% and 75% of participating secondary students experienced substantial relief from acute examination *anxiety* after 8 to 12 weeks of structured practice.



3.3 Enhancement of Psychological Well-Being

In addition to symptom reduction, Rajyoga appears to foster positive affective dimensions and psychological resilience. Singh, Tak, and Sharma (2019) evaluated 150 regular practitioners using standardized well-being inventories. Their results revealed that 89.3% of participants scored in the 'High' well-being bracket, 10.7% registered 'Average' well-being, and zero participants were categorized under 'Low' well-being. Importantly, well-being was directly correlated with the longevity and daily regularity of meditation practice. These findings align with Reddy and Devi's (2026) school trial, where positive affect increased from M = 19.16 (SD = 1.17) to M = 25.14 (SD = 1.03; $t(49) = 31.03$, $p < 0.001$, $d = 4.39$), and overall emotional well-being increased by 73% (M = 26.54 to 45.90, $d = 13.32$, $p < 0.001$).



3.4 Methodological Quality and Risk of Bias Assessment

To ensure transparency and critical rigor, Table 2 presents the quality appraisal of the included primary empirical studies across standard methodological domains.

Study Identifier	Selection & Allocation	Confounding Control	Blinding (Participants/Assessors)	Outcome Measurement	Overall Risk of Bias
Reddy & Devi (2026)	Quasi-randomized	Moderate; baseline affect matched	High risk; unblinded behavioral intervention	Low risk; standardized validated scales	Moderate Risk (Unblinded design; potential

	by school section	between groups		(PANAS, EWBS)	expectancy effects)
Reddy et al. (2026)	Non-randomized programmatic cohort	Low control; multi-center programmatic data	High risk; self-report and program surveys	Moderate risk; variable survey instruments	High Risk (Heterogeneous multi-cohort synthesis)
Singh et al. (2019)	Convenience sampling (meditators)	Low control; cross-sectional observational	Not applicable (observational survey)	Low risk; validated PGI well-being measure	Moderate Risk (Selection bias; lacks control cohort)
Kiran et al. (2014)	Randomized allocation to parallel groups	Moderate; matched demographic & baseline severity	High risk (participants); Low/Unclear (evaluators)	Low risk; clinician-rated HAM-A and HAM-D	Moderate Risk (Open-label trial; lack of placebo sham)

Table 2: Summary of Methodological Quality and Risk of Bias across Included Studies.

4. DISCUSSION

The synthesized literature indicates that Rajyoga meditation is associated with promising improvements in adolescent mental health, academic stress management, and emotional regulation (Singh et al., 2019). The underlying mechanisms of action appear twofold: cognitive-metacognitive restructuring and neurophysiological autonomic regulation. Cognitively, Rajyoga trains students in 'detached observation' (*Sakshi Bhav*), enabling adolescents to identify automatic negative thoughts (e.g., catastrophizing examination failure) and deliberately replace them with stabilizing affirmations of peace and personal capability (Gyanchandani & Sharma, 2026). Physiologically, long-term and short-term yogic meditation has been demonstrated to promote parasympathetic dominance. In physiological evaluations of Rajyoga practitioners, Bharshankar et al. (2015) recorded significantly lower resting heart rates (77.55 ± 6.58 vs. 81.28 ± 7.19 bpm, $p < 0.01$), reduced resting systolic and diastolic blood pressure, and heightened parasympathetic ratios (valsalva ratio, standing-to-lying ratio, and expiration-to-inspiration ratio; $p < 0.001$) compared to matched controls. This shift mitigates excessive autonomic reactivity and dampens the sympathetic hyperarousal characteristic of chronic academic stress (Gyanchandani & Sharma, 2026).

4.1 Methodological Limitations and Study Heterogeneity

Despite these encouraging findings, several methodological caveats must be acknowledged. First, although reported effect sizes in school quasi-experiments are remarkably elevated (e.g., Cohen's d exceeding 4.0 in Reddy & Devi, 2024), these figures must be interpreted cautiously. In behavioral interventions, exceptionally large effect sizes often reflect small sample clusters, heightened expectancy effects (Hawthorne effect), or baseline floor effects rather than purely isolated intervention mechanics. Second, there is substantial heterogeneity across the synthesized corpus: interventions varied from intensive 6-week clinical adjunctive protocols to 8–12 week classroom modules and cross-sectional community evaluations. Third, blinding represents an inherent methodological challenge in meditation research. None of the included trials utilized active sham-meditation comparators, making it impossible to completely disentangle non-specific therapeutic factors—such as teacher enthusiasm, group camaraderie, and quiet rest periods—from the specific cognitive techniques of Rajyoga.

4.2 Publication Bias and Confounding Variables

A further limitation is the likelihood of publication bias. In complementary and non-pharmacological wellness literature, studies demonstrating positive or statistically significant outcomes are disproportionately favored for dissemination, whereas trials showing neutral or negligible effects often remain unpublished. Furthermore, several unmeasured confounding variables—including concurrent changes in parental support, private academic tutoring, seasonal examination schedules, and baseline socioeconomic factors—were rarely controlled for in school cohorts.

4.3 Ethical, Cultural, and Implementation Considerations in Schools

Implementing meditation practices within formal secondary school curricula requires strict adherence to ethical standards. Because Rajyoga originates from the Brahma Kumaris spiritual tradition, schools must safeguard religious neutrality and secular inclusivity. Meditation modules must be introduced strictly as evidence-based cognitive and emotional self-regulation tools, avoiding theological terminology or dogmatic doctrine. Participation must always be voluntary, accompanied by transparent parental informed consent and student assent. Furthermore, educators and trainers must remain culturally sensitive, ensuring that practices respect the diverse secular, multi-faith, and cultural backgrounds of all students without alienating any community.

5. CONCLUSION AND RECOMMENDATIONS

Rajyoga Meditation represents a promising, non-pharmacological, and cost-effective approach for supporting adolescent mental health and mitigating examination-related distress. Through open-eyed metacognitive training, emotional detachment, and autonomic stabilization, regular practice is associated with significant decreases in anxiety and notable improvements in psychological well-being. However, given the limited number of rigorously controlled trials, potential publication bias, and methodological heterogeneity, future research should prioritize large-scale, multi-center randomized controlled trials employing active control groups, longitudinal follow-ups, and objective neurobiological markers (e.g., salivary cortisol, heart rate variability). When introduced with secular framing, voluntary consent, and cultural sensitivity, Rajyoga can serve as a valuable complementary component of comprehensive school mental health initiatives

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