

Yoga Nidra And Yoga Asana For Inattention In Childhood ADHD: A Pre-Test–Post-Test Control Group Study

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ABSTRACT

Background: Attention-deficit/hyperactivity disorder (ADHD) is among the most common neurodevelopmental disorders of childhood, and inattention is one of its most impairing features. Concern about the adverse effects of stimulant medication has increased interest in non-pharmacological options such as yoga. Yoga Nidra, a guided relaxation practice, has rarely been compared with physical yoga postures (asana) for childhood inattention. **Objective:** To compare the effect of a twelve-week Yoga Asana programme and a twelve-week Yoga Nidra programme on inattention in children with ADHD, relative to a non-intervention control group. **Methods:** Fifty children aged 7–12 years identified with ADHD symptoms were assigned to a Yoga Asana group (n = 20), a Yoga Nidra group (n = 20) or a control group (n = 10). Inattention was rated by parents on an ADHD behaviour rating scale before and after the programme. Forty-six children completed the study. A 3 (group) × 2 (gender) analysis of covariance was applied, with the pre-test score as covariate. **Results:** The group effect was significant, $F(2, 39) = 8.48, p < .001, \eta^2 = .30$. The Yoga Nidra group had significantly lower adjusted inattention scores than both the control group ($p < .001$) and the Yoga Asana group ($p = .030$), whereas Yoga Asana did not differ from control ($p = .31$). Gender and the group-by-gender interaction were non-significant. **Conclusion:** Yoga Nidra specifically reduced inattention in children with ADHD, outperforming physical postures alone. Guided relaxation merits further study as a school-based support.

Keywords: ADHD; inattention; Yoga Nidra; Yoga Asana; children; analysis of covariance.

INTRODUCTION

Attention-deficit/hyperactivity disorder (ADHD) is one of the most frequently diagnosed neurodevelopmental disorders of childhood, characterised by persistent inattention, hyperactivity and impulsivity that impair functioning across home and school settings (American Psychiatric Association, 2013). A widely cited synthesis placed the worldwide prevalence at about 5% of children (Polanczyk et al., 2007), and a more recent meta-analysis estimated a pooled prevalence of roughly 7.6% among children aged three to twelve years (Salari et al., 2023). In India, community estimates vary widely across regions and instruments, and the disorder remains under-recognised and under-served (Gore & Morgan, 2025). Inattention, in particular, predicts poorer academic attainment and social difficulty, and is often the symptom domain that persists most stubbornly into later childhood.

Stimulant medication, principally methylphenidate, is the most common pharmacological treatment. However, a large Cochrane review concluded that the evidence for its benefit rests on very low-certainty trials and that treatment is associated with non-serious adverse effects such as sleep disturbance and reduced appetite (Storebø et al., 2023). Concern about these effects, together with parental reluctance to medicate young children, has motivated the search for safe, non-pharmacological approaches that can be delivered in schools.

Mind–body practices are prominent among these alternatives. Meta-analyses of mindfulness-based interventions report modest-to-moderate reductions in ADHD symptoms in children and adolescents, although the effect on inattention specifically tends to be smaller than that on hyperactivity and is sensitive to who provides the rating (Cairncross & Miller, 2020; Lee et al., 2022; Vekety et al., 2021). Yoga, which combines physical postures, breath regulation and attentional focus, has shown promise in this population. Controlled studies have reported improvements in attention and reductions in inattentive and hyperactive behaviour following yoga in preschool and school-aged children (Cohen et al., 2018; Jarraya et al., 2019; Jensen & Kenny, 2004), and acute bouts of physical activity have been linked to short-term gains in executive function and attention in children with ADHD (Miklós et al., 2020).

Within yoga, most childhood research has examined physical postures (asana). Far less attention has been paid to Yoga Nidra, a guided practice of progressive relaxation and structured body awareness performed lying down. Evidence in adults indicates that Yoga Nidra reduces stress and anxiety and can influence diurnal cortisol (Moszeik et al., 2025; Rani et al., 2011), and reviews suggest that its sequential rotation of awareness trains sustained, focused attention (Ghai et al., 2026). These features make Yoga Nidra a theoretically attractive intervention for inattention, yet controlled comparisons against physical yoga in children with ADHD are essentially absent.

The present study addressed this gap by comparing a twelve-week Yoga Asana programme and a twelve-week Yoga Nidra programme against a non-intervention control group, with inattention in children with ADHD as the outcome. Because pre-existing differences in symptom severity could bias a simple post-test comparison, the pre-test score was used as a covariate, and gender was included as a second factor. It was hypothesised that the yogic interventions would reduce inattention relative to control; the comparison between the two practices was treated as an open question.

METHOD

Design and participants

A pre-test–post-test control-group design with a 3 (group) × 2 (gender) structure was used. Fifty children aged 7–12 years, identified as showing ADHD symptoms on an ADHD behaviour rating scale, were drawn from a school setting and assigned to one of three groups: Yoga Asana (n = 20; 13 male, 7 female), Yoga Nidra (n = 20; 13 male, 7 female) or Control (n = 10; 5 male, 5 female). Children with major medical conditions or those already receiving pharmacological or behavioural treatment were not included. Four children from the two intervention groups discontinued the programme, leaving 46 completers (Yoga Asana 18, Yoga Nidra 18, Control 10) for the post-test analysis.

Interventions

Both interventions ran for twelve weeks. The Yoga Asana group practised a graded sequence of age-appropriate postures with progressively increasing hold durations across the programme. The Yoga Nidra group practised guided relaxation with structured rotation of awareness and breath awareness, with session length increasing over the twelve weeks. The control group followed the normal school routine and received no yogic intervention during the study period.

Measure

Inattention was assessed using the inattention subscale of an ADHD behaviour rating scale completed by the children's parents. Higher scores indicate greater inattentive behaviour. The same rating procedure was followed at pre-test and at post-test after the twelve-week programme.

Statistical analysis

Data were analysed using a 3 (group) × 2 (gender) analysis of covariance (ANCOVA), with the post-test inattention score as the dependent variable and the pre-test inattention score as the covariate. The assumptions of normality (Shapiro–Wilk test), homogeneity of variances (Levene's test) and homogeneity of regression slopes were examined and found tenable. Where the group effect was significant, adjusted (estimated marginal) means were compared using Bonferroni-corrected pairwise tests. Partial eta squared (η^2) is reported as the effect-size index. The level of significance was set at .05. Analyses were conducted in jamovi using Type III sums of squares. Ethical approval was obtained and informed consent and child assent were secured; each child was identified by a code to preserve confidentiality.

Results

Table 1 presents the pre-test and post-test descriptive statistics for inattention by group. The three groups were closely matched at baseline. At post-test, the Yoga Nidra group showed the lowest mean inattention score, followed by the Yoga Asana group, with the control group highest.

Table 1. Descriptive statistics for inattention by group (pre-test and post-test)

Group	N	Pre-test M (SD)	Post-test M (SD)
Yoga Asana	18	8.10 (0.85)	7.89 (1.18)
Yoga Nidra	18	8.10 (0.85)	7.11 (1.13)
Control	10	8.00 (0.82)	8.30 (0.95)

N reflects completers analysed at post-test; pre-test group means are shown for the corresponding completers.

The covariate (pre-test inattention) was strongly related to post-test inattention, $F(1, 39) = 50.14$, $p < .001$, $\eta^2 = .56$, confirming the value of adjusting for baseline. After this adjustment, the main effect of group was significant, $F(2, 39) = 8.48$, $p < .001$, $\eta^2 = .30$ (Table 2). Neither the main effect of gender, $F(1, 39) = 1.44$, $p = .238$, nor the group-by-gender interaction, $F(2, 39) = 0.30$, $p = .745$, was significant, indicating that the group effect was consistent across boys and girls.

Table 2. Summary of 3×2 factorial ANCOVA of inattention

Source	df	SS	MS	F	p	η^2
Group (A)	2	9.52	4.76	8.48	< .001	.303
Gender (B)	1	0.81	0.81	1.44	.238	.036
A $\times$ B	2	0.33	0.17	0.30	.745	.015
Covariate (pre-test)	1	28.15	28.15	50.14	< .001	.563
Error	39	21.89	0.56			

Table 3 reports the adjusted means and the Bonferroni comparisons. The Yoga Nidra group had significantly lower adjusted inattention than the control group ($p < .001$) and than the Yoga Asana group ($p = .030$). In contrast, the Yoga Asana group did not differ significantly from the control group ($p = .311$). The reduction in inattention was therefore driven specifically by Yoga Nidra. Figure 1 displays the adjusted means with 95% confidence intervals.

Table 3. Adjusted mean inattention scores and Bonferroni comparisons

Group	Adjusted M	SE	95% CI	Comparison (p)
Yoga Asana	7.88	0.18	7.52–8.25	YA vs YN = .030
Yoga Nidra	7.18	0.19	6.80–7.56	YN vs Control < .001
Control	8.38	0.24	7.90–8.86	YA vs Control = .311

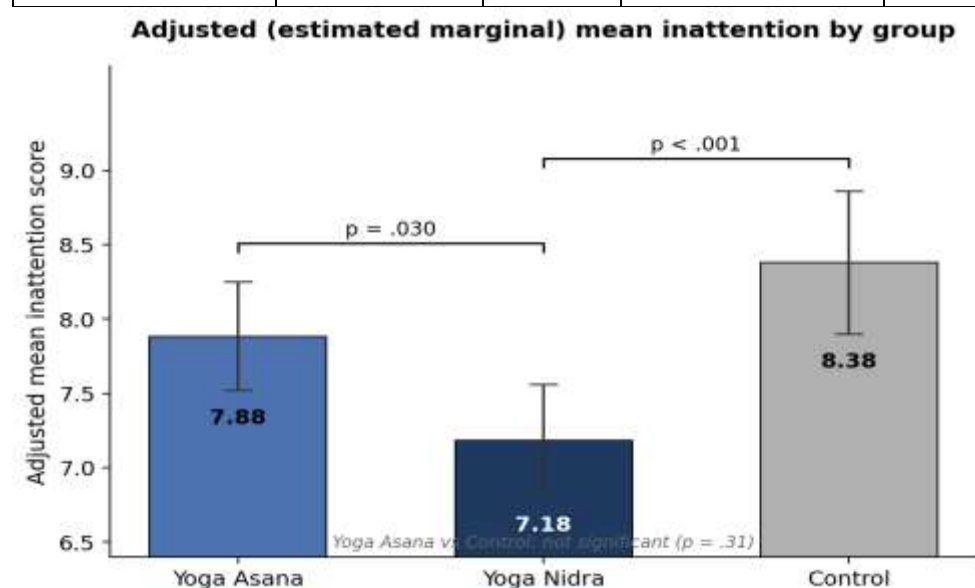


Figure 1. Adjusted (estimated marginal) mean inattention scores by group, with 95% confidence intervals.

DISCUSSION

This study compared two yogic practices as interventions for inattention in children with ADHD. The central finding is a dissociation between the two practices: Yoga Nidra produced a significant reduction in inattention relative to both the control group and the Yoga Asana group, whereas Yoga Asana alone did not differ from control. In other words, guided relaxation, rather than physical posture practice, accounted for the improvement in attention.

This pattern is consistent with the mechanism proposed for Yoga Nidra. The practice involves a sustained, sequential rotation of awareness through the body together with breath awareness, which reviews describe as

a form of focused-attention training that may strengthen the capacity to detect and disengage from distraction (Ghai et al., 2026). Repeatedly directing and re-directing attention during the practice resembles the core exercise of mindfulness-based interventions, which likewise act primarily through attention regulation (Cairncross & Miller, 2020; Lee et al., 2022). By contrast, physical yoga postures place greater demand on motor control and physical exertion, which may translate more readily into reductions in hyperactive behaviour than into gains in sustained attention. Earlier childhood yoga studies that combined postures with attentional components reported benefits for inattentive behaviour (Cohen et al., 2018; Jarraya et al., 2019; Jensen & Kenny, 2004); the present results suggest that the relaxation-and-awareness element may be the more active ingredient for inattention specifically.

The finding also aligns with the broader evidence that mind–body interventions are a credible complement to, or in mild cases an alternative to, stimulant medication, whose benefits are uncertain and whose side-effects are common (Storebø et al., 2023). A short, equipment-free practice such as Yoga Nidra could be feasible to deliver within a school day, an appealing prospect in settings where access to specialist care is limited (Gore & Morgan, 2025).

Several limitations temper these conclusions. First, the sample was small, and once divided by group and gender the individual cells were very small, which limited the statistical power to detect gender and interaction effects; the non-significant results for those terms should be read as inconclusive rather than as evidence of no difference. Second, allocation was to unequal groups from a single school, which constrains generalisability. Third, inattention was measured by parent ratings on a behaviour scale rather than by a performance-based test of attention; parent reports are informative but susceptible to expectancy effects, and future work should add objective attentional measures. Fourth, the study did not include a follow-up assessment, so the durability of the Yoga Nidra advantage is unknown. Finally, blinding of parents to group allocation was not feasible.

Future studies should recruit larger, more balanced samples across multiple sites, add teacher ratings and performance-based attention tasks, and include a follow-up phase to test whether the benefit persists. A direct dismantling design that varies the relaxation and posture components independently would help confirm that the attentional benefit is specific to the guided-relaxation element.

CONCLUSION

In this controlled study of children with ADHD, a twelve-week Yoga Nidra programme significantly reduced inattention, outperforming both a non-intervention control condition and a twelve-week programme of physical yoga postures, which did not differ from control. The effect was consistent across boys and girls. Although the sample was small and the outcome relied on parent ratings, the results identify guided relaxation as a promising, low-cost, school-compatible support for inattention in childhood ADHD and justify larger, more rigorous trials.

DECLARATIONS

Ethics Approval and Trial Registration

This study was approved by the Institutional Ethics Committee of Lakshmibai National Institute of Physical Education, Gwalior (IEC/LNIPE/128/08) and was registered with the Clinical Trials Registry of India (CTRI/2025/02/081373). Written informed consent was obtained from parents or legal guardians of all participants, and written assent was obtained from all participating children prior to enrollment. All procedures were conducted in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments.

Availability of Data and Materials

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Conflict of Interest

The authors declare that they have no conflict of interest.

Author Contributions

VKS conceptualized and supervised the study. SK collected the data and wrote the manuscript. MS analyzed the data. All authors read and approved the final manuscript.

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