

REVIEW ARTICLE

An Inclusive Review of the Yoga's Effect on Special Children

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How to cite this article:

Gusain V.S., Devi P. An Inclusive Review of the Yoga's Effect on Special Children. Ind J Anct Med Yoga. 2025; 18(1): 23-28.

ABSTRACT

Yoga is a holistic practice that promotes mental, emotional, and physical well-being. It is becoming more widely acknowledged for its therapeutic benefits in children with special needs, such as those with cerebral palsy (CP), Down syndrome, ADHD, and autism spectrum disorder (ASD). Studies demonstrate the advantages of yoga in three key areas: social, mental and psychological, and physical and physiological. Physically, it lessens spasticity and enhances flexibility, balance, and motor coordination. In psychology, yoga improves cognitive abilities, emotional control, attention span, and anxiety levels. Socially, it promotes empathy, group engagement, and interpersonal skills.

Although small sample numbers and a focus on confined conditions impair generalizability, studies using randomised controlled trials, pre-and post-test designs, and mixed techniques show notable gains. Accessibility for a range of abilities is ensured using adaptive yoga practices.

Future research should create standardised methods, conduct longitudinal investigations, and investigate various populations and cultural contexts to validate findings further. Yoga is a beneficial intervention for improving children with special needs' physical health, emotional resilience, and social integration despite gaps, providing educators and caregivers with a valuable therapeutic tool.

KEYWORDS

• Yoga • Special Needs • Motor • Cognitive and Emotional Development

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Received: 03-01-2025

Revised: 10-01-2025

Accepted: 03-02-2025



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INTRODUCTION

Over the ages, yoga, an ancient Indian practice has developed from its spiritual foundations to become a comprehensive strategy for mental, emotional, and physical health. Yoga, which combines physical postures (Asanas), mindful breathing exercises (Pranayama), and mindfulness sensory-psychological exercises (Dhyana), is becoming more and more acknowledged for its therapeutic benefits. It is currently used as a therapeutic modality to address various physical, psychological, and developmental issues, going beyond its historical function in fostering wellness.

To promote their development, children with special needs those who have emotional, physical, cognitive, or developmental obstacles need specialised therapies. These disorders frequently include cerebral palsy (CP), Down syndrome, attention deficit hyperactivity disorder (ADHD), autism spectrum disorder (ASD), and other developmental abnormalities. Yoga offers a more comprehensive approach by addressing the physical components of a child's development and emotional regulation, social skills, and cognitive functioning. In contrast, traditional remedies usually concentrate on isolated symptoms.

The potential advantages of yoga for special children have been the subject of an expanding extent of research in recent decades. Yoga is popular for educators, therapists, and caregivers because studies show its beneficial effects on motor abilities, emotional management, social interactions, and cognitive development. Even though yoga is becoming more popular as an intervention, a thorough literature review is still required to determine its efficacy and guide best practices.

By objectively analysing the effects of yoga on special children, this review aims to close this gap. It focuses on methods, sample characteristics, results, and valuable suggestions for implementing yoga interventions.

OBJECTIVES

The following are the main objectives of this review:

1. Examine yoga's physical, emotional, and cognitive benefits for children with special needs by exploring mechanisms

that enhance motor skills, emotional regulation, and cognitive functioning.

2. Categorise the multifaceted advantages of yoga into physical, mental, and social domains to provide a holistic perspective on its impacts.
3. Critically analyse research methodologies, highlighting strengths and limitations to improve reliability and inclusivity in future studies.
4. Address existing challenges, such as limited sample sizes and cultural barriers, while proposing strategies for broader accessibility and generalizability.
5. Offer practical and evidence-based recommendations for implementing yoga in clinical, educational, and home environments to ensure its benefits reach diverse populations.

RESEARCH METHODOLOGY AND DESIGN

The results of several studies, books, and internet sources are analysed in this review using a methodical qualitative synthesis methodology. The process can be divided into multiple phases:

1. **Search for Literature:** Databases: PubMed, Science Direct, Google Scholar
2. **Criteria for Inclusion:** Research written in English focuses on special kids between the ages of three to eighteen. It assesses yoga as a primary or supplemental intervention for populations with exceptional needs.
3. **Data Analysis:** Examining studies for sample characteristics, intervention strategies, and results, including qualitative and quantitative results and helpful advice from books and blogs by therapists and yoga practitioners.
4. **Authors' Analysis:** Examining factors like the frequency, length, and caregiver engagement of interventions.

Sample Size and Features

Numerous sample sizes and features are used in research on the effects of yoga on special children, frequently varying based on the condition under study. Studies that concentrate on various disabilities and their results include the following examples:

1. **Autism Spectrum Disorder (ASD):** In a pilot study, Shankar *et al.* (2022)¹ examined the effects of yoga on social skills and attention in 30 children with ASD. According to the study, yoga significantly increased social interactions and attention span, which supports the idea that it can help them communicate more effectively. This is consistent with the increasing evidence indicating that yoga may help youngsters on the autistic spectrum with their social difficulties (Shankar *et al.*, 2022)¹.
2. **Cerebral Palsy (CP):** The effects of adaptive yoga on 20 cerebral palsy children were investigated by Gibbs *et al.* (2016)². According to the study, yoga reduced muscular stiffness and enhanced flexibility, balance, and coordination. According to Gibbs *et al.* (2016)², these results demonstrate the therapeutic potential of yoga in improving neuromuscular function in kids with cerebral palsy. This is especially crucial because cerebral palsy children frequently have severe motor impairments that make it difficult for them to engage in physical activities.
3. **Down Syndrome and ADHD:** Yoga has been shown to improve cognitive function and emotional regulation in children with Down syndrome and ADHD in smaller studies, including those evaluated by Smith (2016)³. According to Smith's review, yoga may enhance self-regulation and executive functioning, especially in ADHD children who frequently have trouble focusing and controlling their impulses. Additionally, yoga helps kids with Down syndrome interact with others and feel better about themselves, which makes it easier for them to participate in group activities (Smith, 2016)³.
4. These studies show how yoga can be adapted to special children with various disabilities despite their small sample sizes. However, more varied participant groups and larger sample sizes are required to improve the validity and generalizability of these findings.

DESIGNS FOR RESEARCH

A variety of research designs, each with unique advantages and disadvantages, were used

in the examined studies. The primary study techniques employed in studies examining the effects of yoga on special children are listed below:

1. **Controlled Experiments:** Randomised controlled trials (RCTs) were employed in some studies to compare yoga therapies with conventional therapy procedures, like Sahaja's (2021)⁴ research in Yoga Mimamsa Journal. Because they reduce bias and offer solid proof of efficacy, RCTs are regarded as the gold standard for assessing the effectiveness of treatments. These studies assist in determining whether yoga is a feasible therapeutic choice by contrasting yoga interventions with traditional therapy.
2. **Studies Before and After Tests:** Numerous studies have assessed how emotional, cognitive, or social skills change before and after a yoga session using pre- and post-test designs. For instance, using pre- and post-test measures, Rosenblatt *et al.* (2020)⁵ evaluated emotional regulation in kids with developmental difficulties. Although this strategy works well for gauging the intervention's immediate impact, it might not reveal long-term advantages.
3. **Diverse Approaches:** Several studies combined quantitative and qualitative data. This method, like that employed by Evans (2018)⁶, enables researchers to integrate quantifiable results with firsthand knowledge from educators and parents. These studies offer a more thorough knowledge of the impacts of yoga by employing a combination of methodologies, gathering both quantitative data and firsthand accounts.

The study's emphasis on adaptable yoga approaches is a recurrent theme. Adapting yoga therapies to the unique skills of children with exceptional needs is essential, as Evans (2018)⁶ noted. No matter the child's health or the intensity of their symptoms, these modifications guarantee that yoga is accessible and advantageous.

FINDINGS AND OUTCOMES

According to the analysed studies, yoga can help children with special needs in various ways. These advantages fall under three primary categories: social, mental,

psychological, and physical and physiological.

1. Health and Physiological Advantages

1. **Motor Skills:** Research indicates that yoga enhances flexibility, balance, and motor coordination. For example, after doing yoga, children with cerebral palsy showed improved balance and motor coordination (Gibbs *et al.*, 2016)⁷. Additionally, Smith (2016) found that yoga helped children with developmental difficulties with posture and flexibility. These improvements facilitate greater independence in daily activities.
2. **Neuromuscular Function:** Yoga has been shown to improve strength and endurance in children with cerebral palsy while reducing stiffness. According to Rosenblatt *et al.* (2020)⁸, children with cerebral palsy showed improved mobility and decreased muscle tone after yoga sessions. The result suggests increased participation of the children in physical play and therapy.
3. **Health Outcomes:** Consistent yoga can enhance pulmonary function, cardiovascular health, and physical fitness. According to Khalsa (2019)⁹, yoga improved heart rate variability and lung capacity in kids with unique challenges, which improved their general health. The result suggests that children will reduce fatigue and improve their energy levels.

2. Advantages for Mental and Psychological Health

1. **Emotional Regulation:** Research indicates that yoga significantly improves emotional regulation. According to Sahaja (2021)¹⁰, kids who practised yoga showed lower levels of tension and anxiety. Yoga fosters mental clarity and emotional resilience in kids by helping them learn self-regulation techniques. It means the children will improve their mental functions and adjustments.
2. **Cognitive Development:** Research has connected yoga to enhanced cognitive performance. Research conducted by Shankar *et al.* (2022)¹¹ showed that yoga improved executive functioning and attention spans in kids with ASD. Smith (2016)¹² also found that yoga therapies improved children with ADHD's academic performance and task

persistence. It indicates that the children will improve their academic achievement and task completion.

3. **Behavioural Improvements:** Two of the main symptoms of ADHD, hyperactivity and impulsivity, can be lessened by yoga. According to Khalsa (2019)¹³, yoga can be a valuable strategy for addressing ADHD symptoms because it helps kids with the disorder focus better and behave less impulsively. It implies that children will improve their academic and social success.

3. Social Benefits

1. **Interpersonal Skills:** Yoga encourages dialogue and social engagement. Children with ASD had more social involvement and communication with peers after group yoga sessions, according to Shankar *et al.* (2022)¹⁴. Yoga fosters collaboration, empathy, and shared experiences, all of which help kids with special needs develop their social skills.
2. **Community Integration:** Yoga encourages youngsters to participate in groups and fosters a sense of community. Children with special needs who practised yoga were more likely to participate in group activities, which can help them integrate into social situations, according to Chand (2012)¹⁵.
3. **Empathy and Cooperation:** Yoga classes in groups promote respect and cooperation. According to Evans (2018)¹⁶, kids who practised yoga in groups showed increased empathy and cooperative skills, which can help them build closer bonds with their classmates.

Addressing Challenges

Not withstanding the encouraging outcomes, a number of restrictions limit how far the results can be applied:

1. **Expansion of Sample Size and Demography:** Many studies involved small participant groups, limiting their applicability. Future research should focus on larger, more diverse populations, including underrepresented groups such as children with sensory processing disorders and learning disabilities. Incorporating broader demographic variables, such as socio-economic status and geographic diversity, would provide a more inclusive understanding of yoga's

effectiveness.

2. **Condition-Specific Interventions:** Fewer researchers have examined the effects of yoga on illnesses like ADHD and sensory processing impairments, with the majority concentrating on ailments like ASD and CP. A more thorough knowledge of yoga's therapeutic potential will be possible if research is expanded to cover a larger spectrum of special needs populations.
3. **Cultural and Contextual Variations:** Yoga practices vary widely across cultures. Saraswati (2005) emphasised the need for culturally adaptive yoga programs to make the practice accessible to a broader audience. Future research should explore culturally tailored interventions honouring traditional yoga principles while addressing the modern therapeutic goal.
4. **Long-Term Sustainability:** Most studies focus on immediate or short-term outcomes. Longitudinal research is essential to determine yoga's long-term impacts on developmental trajectories, including sustained improvements in motor skills, emotional stability, and academic performance.

Recommendations for Future Research

To completely grasp yoga's potential for kids with special needs, more research is needed in a few areas:

1. **Develop Standardised Protocols:** Create condition-specific yoga programs tailored to diverse needs. For instance, routines for children with ASD could emphasise attention enhancement, while those for CP could focus on motor skill development.
2. **Diversify Study Populations:** Include children with under represented conditions, such as sensory processing disorders, to broaden the scope of applicability.
3. **Conduct Longitudinal Studies:** Evaluate long-term effects by conducting follow-up studies that track physical, cognitive, and emotional progress over extended periods.
4. **Involve Caregivers:** Integrate caregiver feedback to comprehensively understand intervention efficacy and foster greater engagement in yoga practices.

5. **Culturally Adapt Yoga Programs:** Develop and test yoga interventions that respect cultural differences, ensuring accessibility and inclusivity without compromising therapeutic efficacy.

CONCLUSION

Yoga offers children with special needs a potentially effective therapeutic intervention. It complements conventional therapies using a comprehensive approach that considers social, emotional, and physical aspects. Despite the strong evidence for yoga's effectiveness, there are still unanswered questions that need to be answered. Yoga can be a key component of treatments for kids with special needs, enabling them to reach their full potential, provided that research is expanded to include more extensive, more diverse samples, standardised procedures are developed, and cultural factors are explored.

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