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INFLUENCE OF YOGA ASANA TRAINING ON FLEXIBILITY BALANCE AND SOCIAL SKILL OF CHILDREN WITH SPECIAL NEEDS

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ABSTRACT
Background and study aim: Children with special needs (CwSN) often face many physical, mental, and social problems. These problems make it hard for them to take part in daily activities. Because of this, they may have poor physical fitness, weak muscle control, and fewer chances to interact with others. Many times, these children are not included in regular physical education classes, which affects their overall growth and development. This is study investigate to find the influence of yogasana training (YAT) on the flexibility, balance and social skills among children with special needs (CwSN). Material and methods: The study used a pre-experimental pre-test/post-test design. Twenty four boys with mild intellectual disabilities were selected from special school FDMSE in Coimbatore, Tamil Nadu. The subjects selected by purposive sampling method. Participants were selected based on their ability to follow basic instruction and absence of severe medical conditions restricting movement. The participants in 12 weeks of yoga asana training. The training session focused on flexibility, balance and social skills. Pre- and post- intervention measures were conducted using standardized tests. Results: The experimental group showed significant Improvements compared to the pre intervention ($p < 0.05$) in all parameter: flexibility (sit and reach : t=8.66), balance (stork stand test : t = 3.31) and social skills (standard questionnaire Susan H spence 1995 : t = 8.77). conclusions: The study demonstrates that YAT significantly enhance flexibility, balance and social skills among CwSN.
KEYWORDS: *Intellectual disability, Flexibility, Balance,Yogasana.*

INTRODUCTION

Children with Special Needs (CwSN) represent a broad and diverse population encompassing a wide range of physical, mental, intellectual, and sensory impairments. These disabilities can affect a person moves, communicates, learns, or interacts with the world around them, often creating significant challenges in daily life. As per the World Health Organization, disability is a protection term, casing impairments, activity restrictions, and contribution margins. Impairment is a difficult in the bodily function. The World Bank estimates that approximately 600 million people, or 10% of the world's population, have some sort of disability and that 80% of these people live in developing nations. If families of persons with disabilities are included in these estimates, then at least 25% of the world is directly affected by disability.

According to Census 2011, there are 2.68 crore children with special needs in India which constitute 2.21 percent of the total population. Out of the total population of children with special needs, approximately 1.50 crore are male and 1.18 crore, are female. These include persons with visual, hearing, speech and loco-motor disabilities, mental illness, mental retardation (intellectual disabilities), multiple disabilities and other disabilities. There were 11,79,963 Children with Special Needs in Tamil Nadu in 2011. The percentage of population disabled was 1.6%, accounting for a disability rate of 1635 per 1,00,000 population [1].

Children with special needs (CwSN) refers to learners who have physical, mental, sensory, or learning impairments that may require special education services or accommodations to support their academic physical and social development. RPwD Act, 2016 –The Rights of Persons with Disabilities Act [2].

Intellectual disabilities (ID) affect millions of individuals globally, impacting their cognitive, social, and physical abilities [3]. According to American Association on Mental Retardation, “mental retardation refers to substantial limitations in present functioning. “Mental retardation is a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social and practical adaptive skills.

Yoga asana is a combination of physical, psychological, biological and spiritual discipline for achieving union and harmony among our mind, body and soul with ultimate union of our individual consciousness [4]. Yoga asana is a tool to enhance the health, energy and stamina to strengthen the body, create greater mental clarity and deepen self-awareness. As for athletes, it can be a powerful

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enhancement in regular training exercises. It enables each athlete to excel in his own skill and event Adding Yoga asana in a routine training program that helps to develop strength, flexibility, range of motion, concentration, cardiovascular health and reduces stress, tension and tightness. The most significant benefit of adding Yoga asana training program is its effect on performance Yoga allows an athlete to train harder and at a higher level because the range of motion is greater and the fear of injury is lessened.

Flexibility as the ability to move freely through a full range of motion, noting the importance of joint and muscle compliance to optimal physical health. Flexibility was evaluated by applying the Sit and Reach test before and after Yoga asana training [5]. Research shows that difficulties with flexibility are core issues in conditions like intellectual disability, manifesting as rigidity or resistance to change. Structured programs that cultivate flexibility can help minimize emotional distress and support improvements in social participation, communication, and self-regulation.

Balance is a critical motor skill essential for children's overall development and daily functioning, particularly for children with special needs and disabilities. It involves the ability to maintain stability, control posture, and coordinate movements, allowing children to perform activities such as walking, running, and interacting with their environment safely. Effective balance assessment and targeted interventions help improve motor function, promote independence, and enhance quality of life for children with special needs. Early identification and focused balance training are thus crucial components of therapeutic programs aimed at supporting optimal developmental outcomes in these children[6].

Children with special needs often require specialized support to develop social skills, which are crucial for effective communication, relationship building, and social participation. These skills encompass abilities such as understanding social cues, emotional regulation, cooperation, and verbal and non-verbal communication. With patience and tailored support, children with special needs can improve their social skills and foster meaningful social connections.

METHODOLOGY

Participants

The obtained sample size of 24 was adequate to test the study hypotheses. The study involved twenty-four boys aged 13 to 18 years, diagnosed with mild intellectual disabilities, from special school FDMSE in Coimbatore, Tamil Nadu. Participants were selected based on specific inclusion criteria, including a formal diagnosis of mild intellectual disability, the ability to follow basic instructions, the absence of severe medical conditions restricting movement, and written informed consent from parents/legal guardians.

Research design: This study employed a pre experimental pre-test/post-test design to examine the influence of YAT. The subjects selected by purposive sampling method. The YAT consists of systematically designed activities aimed at engaging all participants, irrespective of ability level, within a supportive, adaptive, and enjoyable environment. These activities prioritize collaboration over competition, fostering the development of physical, social, and communication skills. To assess flexibility, researchers used the Sit and-Reach Test. To measure balance, researchers used the Stork Stand Test. To access social skills, researchers used the questionnaire for children with special needs (Susan H. Spence Questionnaire 1995). The inventory consists of 30 statements about the subjects of each item, the subjects parents has to select and tick in one of the three columns following 'not true', 'sometimes true' and 'mostly true'. The scores assigned for all questions are, not true-0, sometimes true-1, and mostly true-2.

Training program

"The Yoga Asana Training (YAT) Program is systematically implemented a period of 12 weeks, consisting of five sessions per week, each lasting 60 minutes. This results in a total of 60 hours of structured training, designed to enhance students' overall development while providing clear insight and understanding for parents and teachers regarding the program's objectives and outcomes.

Statistical Analysis

The data were analyzed using SPSS 20.0. The normality of the data was checked before conducting statistical tests. The dependent 't' test was applied to compared pre-test and post-test. Additionally the effect size was measured to determine the magnitude of difference. In all cases, statistical significance was set at $p < 0.05$.

RESULTS

TABLE I SHOWS THE PRE-TEST AND POST-TEST MEAN VALUES OF FLEXIBILITY, BALANCE, AND SOCIAL SKILLS AMONG CHILDREN WITH SPECIAL NEEDS

Variable	Pre-Test Mean	Post-Test Mean	t-value	p-value
Flexibility (cm)	21.33	24.41	8.66	p<0.05 Significant
Balance (s)	8.3	9.61	3.31	p<0.05 Significant
Social Skills	35.08	37.67	8.77	p<0.05 Significant

The pre-test comparisons between the post-test groups across all the variables are given in table . The results revealed statistically significant differences between the two mean. This indicates that both the pre-test and post-test were equivalent at baseline, with similar levels of flexibility, balance, and social skills the intervention. Yoga asana training yielded significant

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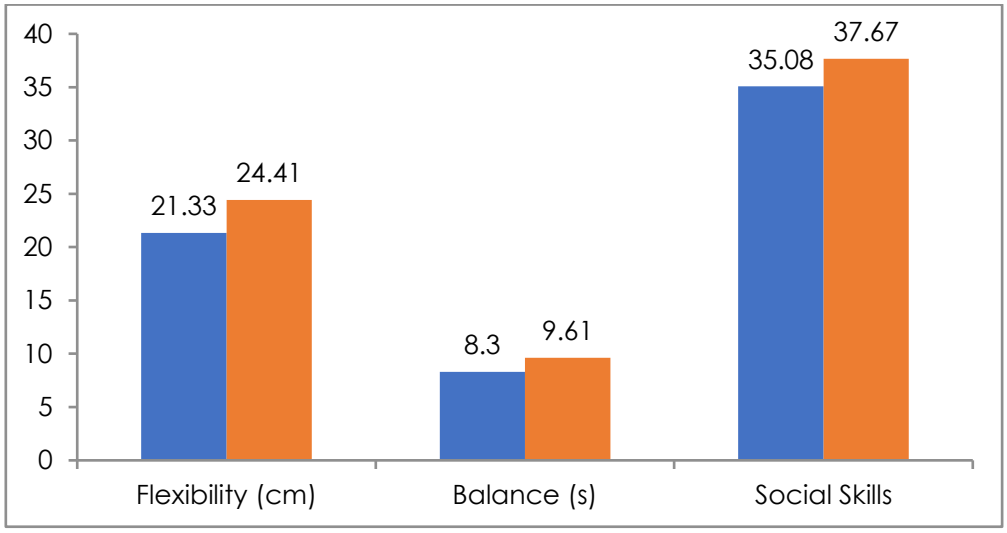
improvements in flexibility (t-value significant, $p < 0.05$), balance ($p < 0.05$), and social skills ($p < 0.05$). Hypotheses 1and 2 accepted (table I)(figure 1).

FIGURE 1 SHOWS THE MEAN VALUES OF THE PRE-TEST AND POST-TEST FOR FLEXIBILITY, BALANCE, AND SOCIAL SKILLS AMONG CHILDREN WITH SPECIAL NEEDS



DISCUSSION ON FINDINGS

The primary objective of this study was to assess the influence of YAT on flexibility, balance, and social skills of CwSN. The findings from the pre-test and post-test comparisons of that structured YAT interventions significantly enhance flexibility, balance, and social skills of CwSN. A one-month adaptive yoga module improved dynamic balance, eye-hand coordination, neuro-motor function, spinal flexibility, and selective attention in students with intellectual challenges [7][11][12][13]. Ashtanga yoga significantly enhanced social skills in children with high-functioning autism, with greater improvements in girls than boys and in younger children than older ones [8]. Findings align with prior studies: yoga asana enhances flexibility/balance in disabled youth [9],[10][14][15]. Social gains match Spence-adapted interventions.

CONCLUSION

The 12-week yoga asana training program significantly improved flexibility, balance, and social skills in boys aged 13–18 years with mild intellectual disability, as evidenced by substantial gains in sit-and-reach scores ($p<0.01$), stork stand balance times ($p<0.001$), and social skills ratings on the Social Skills Improvement System ($p<0.05$) in the pre-test and post-test comparison. These enhancements highlight yogasana role in addressing core deficits in motor coordination and interpersonal functioning, making it a practical, non-pharmacological intervention for special education settings. Future research should explore longer durations, mixed-gender cohorts, and integration with other therapies to maximize outcomes for children with intellectual disabilities.

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