

# **EFFECTS OF YOGIC PRACTICES AND PHYSICAL ACTIVITIES ON CHILDREN WITH AUTISM SPECTRUM DISORDERS**

## **Abstract**

### **Background:**

Autism spectrum disorders (ASD) is a complex neurodevelopmental disorder with an unknown etiology and a higher increasing rate. Researchers around the world are working hard to find a reasonable solution to reduce the severity and complexity of ASD. Several study outcomes showed positive indications of using yoga and physical activity intervention for healing and managing ASD and other disabilities. But the literature on ASD is insufficient and limited, so further comprehensive research is needed.

### **Aim of the study:**

To investigate and analyze the effects of yogic practices and physical activities on problem behaviors of children with autism spectrum disorders.

### **Design of the study:**

A randomized controlled pre-post experimental design was opted for this study. The study conducted in a non-residential autism school in Kolkata, West Bengal, India.

### **Subjects:**

For this study, 24 children already diagnosed with ASD and satisfying inclusion criteria from Pradip Center for Autism Management, Kolkata, West Bengal, India, were selected as samples for this study and equally divided in yoga group, physical activity group and control group. The inclusion criteria included diagnosis of autism according to the Indian Scale for Assessment of Autism (ISAA), age 8–14 years initially and participants with average physical health.

### **Intervention:**

In this study non-residential structured yoga and physical activity (PA) intervention program were implemented for six months. The structured yoga modules followed a sequence of 7 components- 1. Prayer, 2. Loosening exercises (Standing, sitting & dynamic), 3. Asanas/Postures (Standing, sitting, supine & prone), 4. Pranayama/Breathing exercise, 5. Relaxation, 6. Chanting

and 7. Closing prayer. The structured physical activity session included four phases; A. Preparatory phase, B. Specific activity phase, C. Minor game phase and D. Cooling down phase. All selected participants attended yoga and PA sessions regularly and positively.

### **Assessments:**

The assessments for this study were done by parents of the ASD children, class teachers of the special school and two clinical psychologists. The data were collected thrice; during the pre-test or baseline test (two weeks before beginning of the interventions), mid-test (after 3 months of interventions) and a post-test (after 6 months of interventions). For assessment of problem behavior of participants with ASD, the Problem Behavior Checklist (Banerjee et al., 2013) was used.

### **Results:**

Findings of the study showed in the yoga group, there was significant reduction in the mid-session (after three months) followed further by a significant reduction in most of the parameters by the end of yoga intervention in post-test (after six months). For the physical activity group, there was significant reduction in the mid-session (after three months) followed further by a significant reduction in most of the parameters at the end of physical activity intervention in post-test (after six months). In the control group no significant improvement in different PB were seen.

### **Conclusion:**

The school-based non-residential regular structured yoga and PA interventions are beneficial and effective to reduce different problem behaviors of participants with moderate levels of ASD.

### **Key words:**

Autism Spectrum Disorder, Yoga, Physical activity, Problem behaviors.