

# **ABSTRACT**

## **Background**

Autism is a neurodevelopmental disorder, highly prevalent among the children all over the world. Autism is one of the pervasive developmental disorders (PDDs) a group of conditions that also includes Asperger syndrome, PDD not otherwise specified (PDD-NOS), Rett syndrome, and childhood disintegrative disorder. Autism spectrum disorder affects individual suffer from lack of social communication, sensory integration problem, motor problems, combined with repetitive behavior, restlessness, sticking to sameness, with the very little attention span etc. In the latest development research indicates that up to eighty percent of Autism Spectrum Disorder (ASD) children suffer from sleep-related problems and gastrointestinal disorder (GI disorder) which leads to different types of digestion related problems, improper food habits which make them restless and manifests in daytime behavioral problems. Yoga was found to be very effective among all other alternative therapies for ASD children. Yoga was shown to be an effective alternative therapy for mental health with positive changes at both physiological and psychological levels. Extensive research has gone on using yoga as an alternative therapy for children with special needs.

The aim of this study is to develop and test the efficacy of structured yoga intervention for children with ASD in special schools involving parents and teachers.

## **Methods**

A total of 68 children established as Autism under the International Classification for Diseases-10 Edition, were selected and profiled. Finally, 64 children were enrolled in the study after excluding 4 children due to severe ADHD symptoms. Children were divided into two groups as a yoga intervention group and a control group. It was a two-group pre-post-test design. Data were collected pre and post yoga intervention in form of self-rating item by parents developed by the researcher. The assessment was done sleep disorder, gastrointestinal problems (food habits and digestion related problems) the three problematic areas of ASD children. The study was conducted in a non-residential special school with ASD children (Male=51; Female=10) with age group between 5 to 16 years, mean age  $\pm$ SD (4 $\pm$ 3.36). It was a two groups pre-post-test design. The intervention was for a period of three months for yoga group and for the control group routine training program as per school schedule. There was drop out of three children from the control group who could not come for post data collection due to health problems. Otherwise, attendance was good except government holidays since children were regular in attending school. Yoga session was conducted every day for one hour fifteen minutes before school started. One of the parents of the child participated during yoga intervention to help children perform yoga as per yoga teacher's instructions. Some of the teachers were also there to help yoga instructor during the intervention.

## **Results**

This study is to find the efficacy of structured yoga intervention program prepared by the researcher based on three problematic areas of ASD children ie. Sleep problems, GI problems, and behavior problems. A total of sixty-eight children was recruited and after

assessment 4 children were dropped due to severe ADHD symptoms. Remaining 64 children were divided into two groups with each having 32 children (n=32) designated as yoga intervention group and non-yoga control group. Children selected after checking the previous medical records maintained by the school to confirm children were established ASD children. A sixty-one item was developed by the researcher based on the three problematic areas of ASD children. Interview schedules were administered pre and post intervention to parents by teachers under the supervision of clinical psychologists and researcher. Results were found to be encouraging with post data compared to pre-data. ASD children suffer from both physiological and psychological problems. Sleep problems, digestion related problems and food habits and behavior problems were the three domains considered for this study.

## **Conclusion**

By yoga intervention, we have seen a lot of physiological changes in ASD children. By one month of practice, we received good feedback from parents about sleep and digestion related problems. Since parents were also practicing yoga along with children stress level reduced to great extent. There seems to be marked enhancement of quality of life of family members and also increased confidence in managing the child. Other members of the family also have seen such changes in children. They have seen improvements in communication as well as social behavior. We requested parents continue to practice yoga at home even after intervention period to see more improvements. We also requested school authorities to add yoga as the part of the school curriculum.

**Keywords:** Autism Spectrum Disorder, sleep disorder, social interaction; gastrointestinal problems, behavior problems