

# Outcome of Autism Spectrum Disorder with Parental Involvement: A Retrospective Observational Study

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## Abstract

**Background:** Autism Spectrum Disorder (ASD) is a neurodevelopmental condition with varied presentations and outcomes. Parental involvement has emerged as a significant factor influencing prognosis. This study evaluates the outcomes of children diagnosed with ASD based on DSM-5 criteria, with a focus on the role of active parental involvement.

**Methods:** This retrospective observational study included 436 children diagnosed with ASD between 2020 and 2024. Diagnosis was confirmed using DSM-5 criteria. Data on comorbidities, therapeutic interventions, behavioral symptoms, and outcomes were analyzed. All children underwent individualized therapy plans with structured parental participation.

**Results:** Of the 436 children included, 53 (12.2%) were lost to follow-up. Significant clinical improvement was noted in 200 children (45.9%), while 30 (6.9%) achieved near-normal functioning. ADHD was present in 60%, speech and language disorders in 80%, epilepsy in 10%, and sleep disturbances in 70%. Educational delays were common. Temper tantrums occurred in 20%. Fifty percent of children reported rapid improvement with L-Carnosine (200 mg twice daily).

**Conclusion:** Parental involvement significantly contributes to improved outcomes in children with ASD. A multi-modal approach combining professional therapies with home-based engagement enhances progress, especially in speech and behavior. L-Carnosine showed promise as a supportive intervention and warrants further controlled trials. Epilepsy, as a comorbidity, should be actively screened and managed in this population.

**Key Word:** ASD, ADHD, DSMV, Epilepsy, Speech.

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Date of Submission: 14-06-2025

Date of Acceptance: 28-06-2025

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## I. Introduction

Autism Spectrum Disorder (ASD) is characterized by deficits in social communication and restricted, repetitive behaviors. While early diagnosis and interventions are crucial, the role of family and parental participation has been increasingly emphasized in global literature. This study aims to evaluate the real-world outcomes of ASD management in a semi-urban Indian setting, with a special focus on parental involvement.

## II. Materials and Methods

Study Design: Retrospective observational study.

Study Place : Child Guidance Clinics, Smart Life, Ranisayar West, Burdwan

Study Period: January 2020 – December 2024.

Participants: 436 children aged 2–10 years, diagnosed with ASD using DSM-5 criteria.

Exclusion Criteria: Syndromic autism, uncontrolled epilepsy with severe cognitive impairment, Intellectual deficiency and absence of follow-up data.

Data Collection included behavioral assessments, speech-language evaluation, parental therapy logs, and follow-up records over a 12–24 month period.

Therapeutic Protocols Included:

- Applied Behavior Analysis (ABA)

- Speech-language therapy
- Occupational therapy
- Home therapy modules with parent training

Parents are trained by Therapists and advised to do at home what they have learned. In the next sitting the performance are judged and noted. The Gap between two visits are from 1-2 months depending on the distance from the Centre.

### **III. Results**

Parameter	Value
Total participants	436, Male 300, Female 136
Lost to follow-up	53 (12.2%)
Clinical improvement	200 (45.9%)
Complete remission	30 (6.9%)
ADHD comorbidity	60%
Speech & language disorder	80%
Educational delay	>75%
Epilepsy	10%
Temper tantrums	20%
Sleep disturbances	70%
L-Carnosine response (200 mg BID)	50% reported rapid gains

### **IV. Discussion**

This study reinforces the established role of parental involvement in ASD therapy. Consistent with prior research (Zwaigenbaum et al., 2015; Schreibman et al., 2015), children receiving integrated home support in addition to structured therapy showed superior outcomes in language acquisition and behavioral regulation.

Notable Observations:

- L-Carnosine supplementation appeared to enhance behavioral progress in half of the cases, corroborating earlier findings.
- Epilepsy was identified in 10% of patients. This aligns with global data on the increased seizure risk in ASD populations. Co-management with pediatric neurologists is essential.
- Speech delay and sleep disturbances remain persistent challenges.
- ADHD and academic delays were frequent, underscoring the need for school-based support and multi-disciplinary intervention.

### **V. Limitations**

- Single-center study
- Observational nature limits causality
- Variable follow-up durations
- No placebo control for L-Carnosine

### **VI. Conclusion**

Parental engagement is a cornerstone in ASD management. Programs that train and empower parents to deliver structured home-based therapy demonstrate measurable improvements. Adjunct therapies like L-Carnosine and epilepsy management need to be integrated into standard care protocols for more comprehensive support.

Author contribution: AD collected data and is Corresponding Author, S.M. analyses the data and helped AD to prepare the Manuscript.

Conflict of Interest : None

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