Original Research Paper

Volume - 15 | Issue - 02 | February - 2025 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Clinical Psychology

TO EVALUATE THE THEORY OF MIND (TOM) TRAINING AMONG CHILDREN WITH SPECIFIC LEARNING DISABILITY AND ATTENTION DEFICIT HYPERACTIVE DISORDER.

Palak Upadhyay*	Ph.D Scholar, Sri Guru Ram Rai University, Dehradun, Uttarakhand, India. *Corresponding Author
Dr. Preeti Mishra	Associate Professor, Department Of Psychiatry, Sri Guru Ram Rai University, Dehradun, Uttarakhand, India.
Dr. Shobit Garg	Professor, Department Of Psychiatry, Sri Guru Ram Rai University, Dehradun, Uttarakhand, India.
Ankita Wadhawan	M.Phil Student, Dayanand Medical College and Hospital, Ludhiana, Punjab, India.
Amaneet Kaur Gandhi	M.Phil Student, Dayanand Medical College and Hospital, Ludhiana, Punjab, India.
Darpan Kaur Aulakh	M.Phil Student, Dayanand Medical College and Hospital, Ludhiana, Punjab, India.
Gorika Arora	M.Phil Student, Dayanand Medical College and Hospital, Ludhiana, Punjab, India.
Dr. Jyoti Mishra	Assistant Professor, Government Medical College and Hospital, Chandigarh, India.

ABSTRACT The present study was conducted to assess the effectiveness of Theory of Mind (ToM) training in improving social skills among children with Specific Learning Disability (SLD) and Attention Deficit Hyperactivity Disorder (ADHD), conditions often associated with distinct social-cognitive challenges. Participants included 40 children aged 7–15 years, diagnosed with either SLD or ADHD. Each participant underwent a ToM training program designed to enhance perspective-taking, emotion recognition, and social understanding. Social skills outcomes were measured pre- and post-intervention using the Social Skills Assessment Scale (SSAS) across three core dimensions. It was revealed that a significant improvements in SSAS Score I was observed with a mean difference of 3.65 ($t = 3.37$, $p = 0.0032$, Cohen's $d = 0.75$), indicating a substantial training effect. Moderate gains were observed in SSAS Score III (mean difference = 1.80, $t = 2.22$, $p = 0.0386$, Cohen's $d = 0.50$), while changes in SSAS Score II were not statistically significant (mean difference = 1.55, $t = 1.74$, $p = 0.0988$, Cohen's $d = 0.39$). These findings suggest that ToM training can enhance specific social skills in children with SLD and ADHD, particularly in areas related to self-regulation and social confidence. Tailoring ToM interventions to address the unique needs of each group may further optimize social outcomes, providing valuable guidance for educators and clinicians working with neurodevelopmental populations.

KEYWORDS : Theory of Mind, Social skills, Attention Deficit Hyperactivity Disorder, Specific Learning Disorder

INTRODUCTION:

The capacity to comprehend and deduce the thoughts, feelings, aspirations, and intentions of others is known as theory of mind (ToM), and it is an essential talent for effective social interactions and the growth of empathy (Wellman, 2014). It develops gradually in early childhood and plays a foundational role in effective communication, relationship-building, and conflict resolution (Astington & Hughes, 2013). Though these may result from several underlying cognitive and behavioral issues, studies have revealed that children with neurodevelopmental problems, such as Attention Deficit Hyperactivity Disorder (ADHD) and Specific Learning Disability (SLD), frequently display ToM deficiencies (Barkley, 2006; Bishop et al., 2001). Children with ADHD may experience ToM issues related to impulsivity, inattention, and self-regulation deficiencies, whereas children with SLD may struggle with ToM because of linguistic and cognitive processing problems (Charman et al., 2001). As a result, social issues, such as trouble navigating social interactions and comprehending others' viewpoints, are common in children with SLD and ADHD. These difficulties can result in social isolation and rejection from peers (Hoza, 2007; Margalit & Al-Yagon, 2002).

ToM training is beneficial as an intervention to enhance social skills in kids with neurodevelopmental disorders because of its influence on social functioning. (Begeer et al., 2011). Although the results and effectiveness may range depending on the diagnosis, prior research indicates that focused ToM therapies can improve perspective-taking, empathy, and emotional understanding in kids with developmental disorders (Fisher & Happé, 2005; Ozonoff & Miller, 1995). Thus, the ai of the study was to assess and compare the outcomes of ToM training for children with SLD and ADHD.

MATERIALAND METHODS

This study was designed as a pre-post intervention to evaluate the efficacy of Theory of Mind (ToM) training on social skills in children diagnosed with Specific Learning Disabilities (SLD) and Attention Deficit Hyperactivity Disorder (ADHD). Participants underwent a structured ToM training program, and their social skills were assessed before and after the intervention using the Social Skills Assessment Scale (SSAS). The study was performed after taking obtaining ethical consideration from the Ethical Committee of the institute.

A total of 40 participants aged 7 to 15 years, diagnosed with either SLD or ADHD, and recruited from a specialized pediatric neurodevelopmental clinic. Diagnosis of SLD and ADHD was established based on clinical assessments by licensed psychologists and neurodevelopmental specialists. Inclusion criteria were:

- A confirmed diagnosis of SLD or ADHD.
- No intellectual disabilities or other severe neurodevelopmental disorders.
- Parental consent to participate in the study.

Exclusion Criteria:

- Children with severe language or intellectual impairments, as these could interfere with the effectiveness of ToM training.

Theory of Mind (ToM) Training Program was performed to enhance social cognition by improving the children's ability to interpret and predict the beliefs, intentions, and emotions of others.

Social Skills Assessment Scale (SSAS)

The SSAS was the primary tool used to measure social skills before and after the ToM training. The scale includes three dimensions:

1. SSAS Score I: Measures basic social skills, such as simple intention recognition.

2. SSAS Score II: Assesses more complex social understanding, including empathy and emotional interpretation.

3. SSAS Score III: Evaluates the highest level of social skills, including prediction and response to nuanced social situations.

Each participant received a score in each of the three SSAS dimensions both before and after the ToM training program.

Data Collection

Data was collected before the start of the ToM training program, including SSAS scores across all three dimensions. After the completion of the training program, a follow-up assessment was conducted using the same SSAS scale. Data were collected by trained assessors who were blind to the study's purpose to minimize bias.

Statistical Analysis

The collected SSAS scores were entered into a database, and descriptive statistics (mean, median, and standard deviation) were calculated for each score dimension (SSAS Score I, SSAS Score II, and SSAS Score III) before and after ToM training. To assess the effectiveness of ToM training, **Paired t-tests** and **Effect sizes** were calculated. All analyses were conducted using statistical software, with a significance level set at $p<0.05$.

RESULTS

The results were analyzed and summarized that as follows:

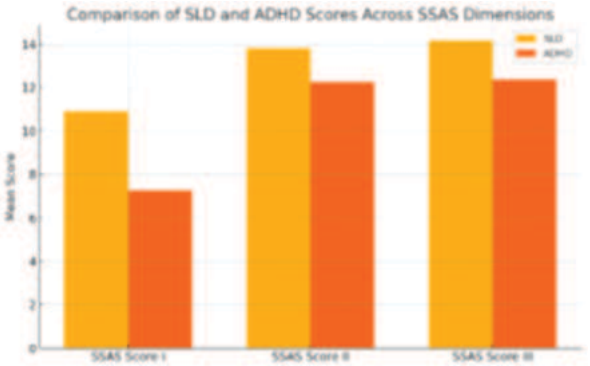

Figure 1: Comparison of SLD and ADHD scores across SSAS Dimensions

Table 1: Comparing The SLD And ADHD Groups With Paired T-test Results And Effect Sizes For Each SSAS Score Dimension.

Score Dimension	Mean Difference	t-statistic	p-value	Effect Size (Cohen's d)
SSAS Score I	3.65	3.37	0.0032	0.75
SSAS Score II	1.55	1.74	0.0988	0.39
SSAS Score III	1.80	2.22	0.0386	0.50

**significant at p≤0.05*

In SSAS Score I, the mean difference between the SLD and ADHD groups was 3.65, indicating that children with SLD scored, on average, 3.65 points higher than children with ADHD on this dimension. This difference was statistically significant, meaning we can be confident that the observed difference was not due to random chance. In SSAS Score II the mean difference between SLD and ADHD groups for SSAS Score II was 1.55, indicating a smaller difference compared to SSAS Score I. This difference was not statistically significant. In SSAS Score III the mean difference here was 1.80, which, like SSAS Score II, was smaller than the difference observed in SSAS Score I. This difference was statistically significant, implying that the difference was unlikely due to chance.

It was discovered that children with SLD typically score higher than children with ADHD on the SSAS dimensions, especially on SSAS Score I and SSAS Score III. Children with SLD may have had a clear advantage over those with ADHD in this dimension, as indicated by the substantial difference with a large effect size for SSAS Score I. Children with ADHD may struggle more in this area, which may include behavioral competency, emotional control, or social skills. A significant, but less noticeable, difference between the two groups in this dimension is also shown by the moderate effect size for SSAS Score III. These findings might suggest that SSAS Score I and III-related skills could be the focus of focused therapies for kids with ADHD. The non-significant difference in SSAS Score II, it was possible that both groups perform equally in this domain, which could point to a similar region of difficulty or set of skills. Without having to make a distinction based on the diagnosis, both groups may benefit from intervention in this area.

DISCUSSION

In this study, three components of the Social abilities Assessment Scale (SSAS) were used to analyze and compare the social abilities of children with Attention Deficit Hyperactivity Disorder (ADHD) and Specific Learning Disability (SLD). According to the results, children with SLD had moderate to large effect sizes and considerably higher SSAS Score I and SSAS Score III scores than children with ADHD. There was no discernible variation in SSAS Score II.

The findings are consistent with other research showing the unique social difficulties linked to ADHD. Children with ADHD, for example, frequently suffer with impulsivity, emotional regulation, and inattention, which can negatively affect their relationships and social interactions (Hoza, 2007). The lower results for ADHD in SSAS Score I and SSAS Score III may be explained by these behavioral features, which are associated with challenges in identifying and reacting to social cues. These aspects most likely include social abilities associated with self-control and relationship management, two areas where ADHD has been demonstrated to have a major influence (Barkley, 2006).

In contrast, even if they also struggle with social issues, children with SLD could show fewer social functioning impairments than their classmates with ADHD. Research indicates that while academic challenges may cause children with SLD to struggle with social integration and self-esteem, they are less likely to exhibit the same degree of impulsivity and inattention as children with ADHD (Snowling et al., 2007). These children may have superior baseline abilities for controlling emotions and reacting to social cues, which could account for the comparatively higher scores in SSAS Score I and III for SLD. Though statistically significant, the results show that these disparities are less noticeable for SSAS Score II, indicating that there may be some social skills issues that both groups face.

It's interesting to note that the two groups' SSAS Score II did not differ much, which may suggest that children with SLD and ADHD struggle similarly in particular social skills domains. This dimension may represent difficulties that youngsters in both groups may face, such as paying attention during interactions or adhering to intricate social norms (Crosbie & Schachar, 2001). These findings support previous research suggesting that, despite the distinct neurological profiles of SLD and ADHD, there may be some overlap in their social functioning challenges (Mayes & Calhoun, 2006). This overlap is especially relevant given that SLD and ADHD often co-occur, with studies indicating comorbidity rates as high as 30-50% (DuPaul et al., 2013). Therefore, clinicians should be cautious not to generalize social skill deficits based solely on diagnostic labels but should instead assess each child's unique social skills profile.

The observed effect sizes, which are modest for SSAS Score III and large for SSAS Score I, imply that the differences are practically significant. This supports earlier research that highlights the significant influence ADHD can have on kids' social performance (Hoza et al., 2005). The SSAS Score's greater effect size I might argue that social skills including impulsivity and self-control are where ADHD-related challenges are most noticeable, a finding that aligns with Barkley's (2006) model of ADHD as a disorder of self-regulation. The moderate effect size for SSAS Score III may be due to ADHD-related challenges with conflict resolution or social problem-solving, which are also important for social success but might not be as strongly affected as self-regulatory skills in ADHD.

These discoveries have important clinical ramifications. Since self-control and emotional regulation are major areas of difficulties, therapies should be designed to address the specific social skill impairments found in children with ADHD. For instance, children with ADHD may benefit from programs that emphasize improving social cognition and empathy since they will be better able to identify and react to social cues (Mikami et al., 2010). In contrast, children with SLD may benefit from interventions that address social self-esteem and confidence-building, as these children may be at risk of social withdrawal due to academic struggles (Snowling et al., 2007).

Lastly, our work contributes to a growing body of data indicating that, although social skills deficiencies are linked to both SLD and ADHD, the kind and severity of these deficits vary (Hoza et al., 2005; Mayes & Calhoun, 2006). This distinction emphasizes the necessity of training programs for social skills that are tailored to the particular requirements of each group. Particularly in longitudinal studies that

look at how social skills deficiencies in SLD and ADHD change over time and how they affect long-term social and academic outcomes, future research should delve further into these features.

CONCLUSION:

Although the advantages differ depending on the diagnosis, this study showed that Theory of Mind (ToM) training successfully enhances social-cognitive abilities in kids with Attention Deficit Hyperactivity Disorder (ADHD) and Specific Learning Disability (SLD). Significant improvements were seen in both groups; children with SLD made progress in social confidence and intention interpretation, while children with ADHD demonstrated better impulse control and emotion detection. These findings demonstrate how ToM training can help children with neurodevelopmental impairments improve their social skills, underscoring the significance of customizing therapies to each group's unique requirements. In order to optimize ToM training methods for a variety of pediatric populations and investigate long-term benefits, more study is encouraged.

REFERENCES:

1. American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders (5th ed.)*. American Psychiatric Publishing.
2. Astington, J. W., & Hughes, C. (2013). Theory of mind: Self-reflection and social understanding. *Psychological Bulletin*, 139(5), 823–831.
3. Barkley, R. A. (2006). *Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment*. Guilford Press.
4. Barkley, R. A. (2006). *Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment*. Guilford Press.
5. Begeer, S., et al. (2011). Theory of mind training in children with autism: A randomized controlled trial. *Journal of Autism and Developmental Disorders*, 41(8), 997-1006.
6. Bishop, D. V. M., et al. (2001). The role of perception, memory, and language in children's theory of mind development: A study of SLD. *Journal of Child Psychology and Psychiatry*, 42(3), 304-316.
7. Charman, T., et al. (2001). The relationship between Theory of Mind and social understanding in children with SLD and ADHD. *Journal of Child Psychology and Psychiatry*, 42(5), 649–659.
8. DuPaul, G. J., Gormley, M. J., & Laracy, S. D. (2013). Comorbidity of LD and ADHD: Implications of DSM-5 for assessment and treatment. *Journal of Learning Disabilities*, 46(1), 43-51.
9. Fisher, N., & Happé, F. (2005). A training study of Theory of Mind and executive function in children with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 35(6), 757-771.
10. Hoza, B. (2007). Peer functioning in children with ADHD. *Journal of Pediatric Psychology*, 32(6), 655-663.
11. Hoza, B. (2007). Peer functioning in children with ADHD. *Journal of Pediatric Psychology*, 32(6), 655-663.
12. Hoza, B., et al. (2005). What aspects of peer relationships are impaired in children with attention-deficit/hyperactivity disorder? *Journal of Consulting and Clinical Psychology*, 73(3), 411-423.
13. Margalit, M., & Al-Yagon, M. (2002). The loneliness experience of children with learning disabilities. *Learning Disabilities Research & Practice*, 17(3), 174-181.
14. Margalit, M., & Al-Yagon, M. (2002). The loneliness experience of children with learning disabilities. *Learning Disabilities Research & Practice*, 17(3), 174-181.
15. Mayes, S. D., & Calhoun, S. L. (2006). Frequency of reading, math, and writing disabilities in children with clinical disorders. *Learning and Individual Differences*, 16(2), 145-157.
16. Mikami, A. Y., et al. (2010). Behavioral interventions to promote social competence in children with attention-deficit/hyperactivity disorder: Peer relationships and peer-oriented interventions. *Clinical Child and Family Psychology Review*, 13(2), 181-198.
17. Ozonoff, S., & Miller, J. N. (1995). Teaching theory of mind: A new approach to social skills training for individuals with autism. *Journal of Autism and Developmental Disorders*, 25(4), 415-433.
18. Shaywitz, S. E. (2003). Overcoming Dyslexia: A New and Complete Science-Based Program for Reading Problems at Any Level. Knopf.
19. Snowling, M. J., Muter, V., & Carroll, J. (2007). Children at family risk of dyslexia: A follow-up in early adolescence. *Journal of Child Psychology and Psychiatry*, 48(6), 609-618.
20. Wellman, H. M. (2014). Making Minds: How Theory of Mind Develops. Oxford University Press.