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Effects Of Social Cognition Based Peer Mediated Intervention To Improve Social Competence Among Children With Autism Spectrum Disorder

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Abstract

Aim

The aim of this study was to determine the effects of social cognition based peer mediated intervention to improve social competence among children with Autism Spectrum Disorder.

Objectives

- To found the severity of the Autism Spectrum Disorder among children by using Indian Scale for Assessment of Autism (ISAA)
- To measured social competence behaviour among children with Autism Spectrum Disorder by using Social responsiveness scale (SRS - 2)

Methodology

This quasi – experimental research study was conducted on 6 to 12 years old aged children with Autism Spectrum Disorder for 6 months at OPD, Sree Abirami College of Occupational Therapy, Coimbatore. Seventy children were included in this study. Children were divided into two groups (Control group (N = 35) and Experimental group (N = 35)). In this study, control group received conventional occupational therapy interventions (45 minutes), experimental group received Conventional occupational therapy (25 minutes) and social cognition based peer mediated interventions (20 minutes). This study conducted for 24 weeks. The participants had undergone initial assessment for 2 weeks, interventions for 20 weeks (Both control and experimental group) and follow up assessment for 2 weeks. Further, the collected pre and post data values were analyzed by measuring mean, standard deviation, t value and p value. Finally, the data analysis was interpreted by using SPSS version 29 respectively.

Results

The analyzed results indicated significant changes between control and experimental group. The results were showed the effects of social cognition based peer mediated intervention strategies on children with Autism Spectrum Disorder.

Conclusion

The conclusion of this study proposed Social cognition based activities, peer mediated techniques (such as video modeling and role play) to improve interpersonal skills, social participation and adaptive functioning skills among children with Autism Spectrum Disorder.

Keywords: Social cognition, Peer mediation, Occupational Therapy, Autism Spectrum Disorder

INTRODUCTION:

Autism spectrum disorder is a neurodevelopmental disorder. According to DSM-5, ASD is defined as a persistent deficit in social communication and social interaction across various contexts and restricted, repetitive patterns of behavior, interests, or activities.

According to World Health Organization (WHO), The prevalence of ASD is to be 0.76% around worldwide and which is represents about 16% of all children. According to Centers for Disease Control and Prevention (CDC), 1 children affected out of 59 in the US or approximately 1.68% of 8 years old aged children, have been reported with ASD. The Autism and Developmental Disabilities Monitoring Network (ADDM) has reported the prevalence of ASD in the United States more than doubled (between 2000–2002 and 2010–2012).

ASD occurs in all racial, ethnic, and socioeconomic groups, but its diagnosis is far from uniform across these groups.

ASD is more common in males but in a recent meta-analysis, the true male-to-female ratio is closer to 3:1 than the previously reported 4:1, though this study was not done using the DSM-5 criteria in India. This study also suggested that girls who meet the criteria for ASD are at higher risk of not receiving a clinical diagnosis. The female autism phenotype may play a role in girls being misdiagnosed, diagnosed later, or overlooked. Not only are females less likely to present with overt symptoms, but they are also more likely to mask their social deficits through a process called "camouflaging", further hindering a timely diagnosis. Likewise, gender biases and stereotypes of ASD as a male disorder could also hamper diagnoses in girls.

Several genetic diagnoses have an increased rate of co-occurring ASD compared to the average population, including fragile X, tuberous sclerosis, Down syndrome, and Rett syndrome, among others; however, these known genetic disorders account for a very small amount of overall ASD cases. Studies of children with sex chromosome aneuploidy describe a specific social functioning profile in males that suggests more vulnerability to autism. With the increased use of chromosomal microarray, several sites (chromosome X, 2, 3, 7, 15, 16, 17, and 22 in particular) have proven to be associated with increased ASD risk. Other risk factors for ASD include increased parental age and prematurity. This could be due to the theory that older gametes have a higher probability of carrying mutations which could result in additional obstetrical complications, including prematurity.

ASD is a neurobiological disorder influenced by both genetic and environmental factors affecting the developing brain. Ongoing research continues to deepen our understanding of potential etiologic mechanisms in ASD, but currently, no single unifying cause has been elucidated. Neuropathologic studies are limited but have revealed differences in cerebellar architecture and connectivity, limbic system abnormalities, and frontal and temporal lobe cortical alterations, along with other subtle malformations. A small explorative study of neocortical architecture from young children revealed focal disruption of cortical laminar architecture in the majority of subjects, suggesting problems with cortical layer formation and neuronal differentiation.

Brain overgrowth both in terms of cortical size and additionally in terms of increased extra-axial fluid has been described in children with ASD and are area of ongoing study both in terms of furthering our understanding of its etiology and also as a potential biomarker. Genetic factors play a role in ASD susceptibility, with siblings of patients with ASD carrying an increased risk of diagnosis when compared to population norms, and a much higher, although not absolute, concordance of autism diagnosis in monozygotic twins. Genome-wide association studies and whole exome sequencing methods have broadened our understanding of ASD susceptibility genes, and learning more regarding the function of these genes can shed light on potential biological mechanisms.

Many of the genetic defects associated with ASD encode proteins that are relevant at the neuronal synapse or that are involved in activity-dependent changes in neurons, including regulatory proteins such as transcription factors. Potential "networks" of ASD genetic risk convergence include pathways involved in neurotransmission and neuroinflammation.

A recent study described 16 newly identified genes associated with ASD that raise new potential mechanisms including cellular cytoskeletal structure and ion transport. Ultimately, ASD remains one of the most genetically heterogeneous neuropsychiatric disorders with rarer de novo and inherited variants in over 700 genes. While genetics play a role in ASD's etiology, phenotypic expression of genetic susceptibility remains extremely variable within ASD. Genetic risk may be modulated by prenatal, perinatal, and postnatal environmental factors in some patients.

Prenatal exposure to thalidomide and valproic acid have been reported to increase risk, while studies suggest that prenatal supplements of folic acid in patients exposed to antiepileptic drugs may reduce risk.

Advanced maternal and paternal age have both been shown to have an increased risk of having a child with ASD. Maternal history of autoimmune diseases, such as diabetes, thyroid disease, or psoriasis has been postulated, but study results remain mixed. Maternal infection or immune activation during pregnancy is another area of interest and may be a potential risk factor according to recent investigations. Both shorter and longer inter-pregnancy intervals have also been reported to increase ASD risk. Infants born prematurely have been demonstrated to carry a higher risk for ASD in addition to other neurodevelopmental disorders. In a prior epidemiologic review, obstetric factors including uterine bleeding, caesarian delivery, low birth weight, preterm delivery, and low Apgar scores were reported to be the few factors more consistently associated with autism.

A recent meta-analysis reported several pre-, peri, and postnatal risk factors that resulted in an elevated relative risk of ASD in offspring, but also revealed significant heterogeneity, resulting in an inability to make a true determination regarding the importance of these factors.

Social competence and communication skills:

Children with ASD are displaying difficulties in both expressive and receptive language skills and in turn, they generally have less positive social outcomes like being excluded from peer groups all of which contribute to their social competence problems. In children with ASD, verbal communication skills, especially grammar knowledge, were found to lead to

success in social participation. Therefore, verbal communication skills are an important contributor to social skills and mental state understanding in children with ASD.

Non-verbal communication is also an important indicator of social competence. This includes using and understanding eye contact, gestures, and joint attention. Impaired communication skills, including problems in non-verbal communication and misattributing the non-verbal intentions of others, is one of the core difficulties defined in the classification of ASD, with such children showing problems in both using and comprehending non-verbal communication. Lack of nonverbal communication was led to inadequate joint attention, social interaction and play skills among children with ASD. The difficulties in joint attention were reported to indicate the social problems on children with ASD and higher responsiveness to joint attention in children with ASD is related to better social competence in school aged children. Moreover, interventions focusing improvement in non-verbal communication are related to enhancement in social skills. The current study aimed to fill this gap and this study focused to hypothesize that verbal and non-verbal communication skills would be positively related to the social competence of children with ASD, and insight into seeing and knowing and physiological states might also correlate with the social competence given that they might help them understand people better. This study aimed to determine the effects of social cognition based peer mediated intervention to improve social competence among children with ASD.

AIM

- To find the severity ASD among 6 to 12 years old aged children.
- To identify the social competence behavior among children with autism spectrum disorder.
- To determine the effects of social cognition based peer mediated intervention to improve social competence among children with ASD.

OBJECTIVES

- To screen the severity of ASD among 6 to 12 years old aged children by using Indian Scale for Assessment of Autism (ISAA)
- To evaluate the effects of social cognition based peer mediated occupational therapy intervention on social competence behavior among children with Autism Spectrum Disorder by using Social responsiveness scale (SRS - 2)

HYPOTHESIS

Null hypothesis

The Null hypothesis states that there will be no significant “effects of social cognition based peer mediated occupational therapy intervention on social competence behavior among children with Autism Spectrum Disorder.”

Alternative hypothesis

The Alternative hypothesis states that there will be significant “effects of social cognition based peer mediated occupational therapy intervention on social competence behavior among children with autism spectrum disorder.”

REVIEW OF LITERATURE

- **Gajre MP, Shah M, Pradhan SV, Harshna Aseri et al.(Cureus, 2024)**

Te purpose this study was to determine the impact of Group based social skills interventions (GSSIs) among Children with Autism Spectrum Disorder (ASD). This study conducted on 8 to 15 years old aged ASD children. The intelligence quotient (IQ) and the Binet Kamat Test of Intelligence (BKT) was used to assess IQ, the Indian Scale for Assessment of Autism (ISAA) used to measure the severity range of ASD, Social Communication Questionnaire (SCQ) and the parent-rated Social Responsiveness Scale 2 (p-SRS-2) was used to analyse social interaction on ASD children. The GSSIs were planned for 12 sessions period of 3 months (weekly basis 90 minutes per session). This study conclusions were indicated the positive impact of GSSIs on ASD population.

- **McConnell K, Keenan C, Storey C, Thurston A et al (Campbell systematic reviews. 2024)**

The purpose of this study was to review the Video-based interventions to develop social behavioural skills on 3 to 18 years old aged autistic children and young people. This study data were collected from 8 electronic databases and were searched 438 studies (394 case study designs, 25 randomised controlled trials, 15 non-randomised group designs, and 8 pretest-posttest designs) from electronic databases. This study results were found the evidences on video - based interventions to develop social behavioural responses among children with ASD.

- **Kim-Lui Raise Chan, Ouyang G et al (Research in Autism Spectrum Disorders, 2024)**

The purpose of this study was to investigate the influence of child centered play therapy on children with ASD. This study focused to analysis the pre and post test changes of EEG and to compare the outcome measures with Social Responsiveness Scale-2 (SRS-2), Autism Spectrum Quotient - Child (AQ-child) and Adaptive Behaviour Assessment System-II (ABAS-II) on ASD children. This study results were concluded that the significant positive outcome changes in EEG and other outcome measures (SRS - 2, AQ-child and ABAS-II) on children with ASD.

- **Ohara S, Lakmal Ponnamperuma et al. (The proceedings of slit international conference on advancements in science and humanities. 2023)**

The purpose of this study was to investigate the reliability and validity of the Indian Scale for the Identification of Autism on a Sinhala - speaking population of 3 to 12 years old. The study participants were selected from clinics and non clinical (one hospital, one boys and girls school, one nursery school from each districts) settings. 308 participants were included in this

study and conducted on 3 to 12 years old aged children. The study results were indicated that the positive outcomes of ISAA to measure severity of ASD factors among children.

- **Campi E, Sideris J, Wiles A, Phillips A, Valentina Vera Carrasquero, Ausderau K, et al. (American Journal of Occupational Therapy, 2023)**

This study aimed to examine the factors associated with occupational therapy service utilization by children with autism. This study was conducted on 3 to 13 years old aged children with ASD. 892 participants (Parents of children with autism) were selected from 50 U.S States. Pre and post data values of this study were measured by using Vineland Adaptive Behavior Scale-Second Edition, the Social Responsiveness Scale, and the Sensory Experiences Questionnaire (Version 3.0). This study results were found to positive impact of occupational therapy services utilization among children with ASD.

- **Channell MM et al (Journal of Autism and Developmental Disorders, 2020)**

The purpose of this study was to determine the impact of ASD risk factors on school-aged children with Down syndrome. This study was conducted on 40 subjects and SRS -2 scales were used to analysis social response of ASD on 6 to 11 years old aged children. The study results were indicated the chances of ASD risk factors on children with Down syndrome.

- **Chakraborty S, Bhatia T, Sharma V, Antony N, Das D, Sahu S, et al. (Indian Journal of Psychological Medicine, 2020)**

The study aimed to determine the Indian Scale for Assessment of Autism (ISAA) and to identify severity of ASD in the community. According to selection criteria, 433 participants were selected for this study and 3 participants excluded. This study was conducted on 430 children. This study results were concluded that significant to find the category of ASD among children.

- **Gergoudis KN, Weinberg AD, Templin J, Farmer C, Durkin A, Weissman J, et al. (Autism Research, 2020)**

The aim of this study was to determine the Social Responsiveness Scale-2 (SRS-2) measures for characterize symptoms of autism spectrum disorder (ASD), language ability and intellectual disability (ID) on Phelan–McDermid syndrome (PMS). This study participants were selected from six national sites and conducted on 3 to 21 years old aged people. The study results were concluded that the significant reliability and validity of SRS - 2 among people with PMS.

- **Ching, A, Pirilli, A, Salem, J, Taylor. C, Valverde. S, Ferraro. M, Potvin, M. C et al.,(Thomas Jefferson University, 2020)**

The aim of this study was to review the efficacy of social cognitive interventions on improving social participation in children with Autism Spectrum Disorder. This study data were selected from CINAHL, ERIC, PsycINFO, and PubMed and searched 1255 articles from electronic databases. This study conducted on nine articles (7 quasi experimental studies and 2 Randomized Control Trials (RCT)) based on inclusion criteria. This study results were found to significant the supportive evidences to determine the social cognitive interventions on improving social participation in children with ASD.

- **Parsons L, Cordier R, Munro N, Joosten A et al (Research in Developmental Disabilities, 2020)**

This study aimed to determine the peer mediated intervention to develop the pragmatic language outcomes for children with autism and compare that intervention with typically developing peer playmates. This randomized control trial was conducted on 71 participants.Then the selected participants were divided into two groups (first group received 10 week intervention immediately and the other second group waited for 10-weeks before commencing the intervention). The outcomes were measured for 3 months once. This study results were concluded that the positive impact of pragmatic language performance on peer playmates.

- **Kent C, Cordier R, Joosten A, Wilkes-Gillan S, Bundy A et al., (Journal of Autism and Developmental Disorders, 2020)**

The aim of this study was to investigate the effects of peer mediated interventions to develop play skills among Children with Autism Spectrum Disorder (ASD). This randomized control trail was conducted on sixty five typically developing peers with ASD children. The Test of Playfulness tool was used to measure participant's outcomes in this study. This study results were found the moderate significant changes on play skills within ASD children.

- **Cahill SM, Egan BE, Seber J et al., (American Journal of Occupational Therapy, 2020)**

The aim of this study was to describe the activity and occupation based interventions to support adaptive behavior and social participation for children and youth with ASD. This study articles were selected from Jan 2010 to March 2017 and 53210 articles were taken from electronic databases (MEDLINE, PsycINFO, CINAHL, ERIC, OT seeker, and Cochrane databases) based title and abstract. Then, 62 articles were selected based on inclusion criteria. This study results were concluded that the significant effect of activity and occupation based occupational therapy interventions to improve adaptive behavior and social participation among ASD population.

- **Velikonja T, Fett AK, Velthorst E et al(JAMA Psychiatry. 2019)**

The purpose of this study was to review the impairments in cognitive domains of Autism Spectrum Disorder (ASD). This systematic review conducted on 75 studies and selected from PubMed, PsycINFO, Embase, and Medline databases. 3361 participants were included in this study. The study results were concluded to identify the understanding patterns of social and non social cognitive functioning in adults with ASD and to found the interventions of cognitive functions.

- **Challita J, Chapparo C, Hinitt J, Heard R et al.,(British Journal of Occupational Therapy, 2019)**

The aim of this study was to describe the impact of a playground intervention program based on the Perceive, Recall, Plan and Perform intervention strategies among preschoolers. This study was conducted on sixteen children of kindergarten to

grade three. The Goal Attainment Scale (GAS) was used to measure outcome of the participants in this study. The study results were concluded the significant positive impact of strategy to improve social participation on children at school.

- **Anu Nr, Sugi S, Rajendran K et al., (The Indian Journal of Occupational Therapy, 2019)**

The purpose of this study was to determine the impact of pretend play behaviors to improve social competence through pretend play for children with Autism Spectrum Disorder (ASD). This study was conducted on 3 to 7 years old aged children with ASD for 6 months. 42 children were included in this study. These study outcomes were measured by using Child-Initiated Pretend Play Assessment and Communication DEALL Developmental Checklist for social skills. This study results were found to identify the impact of pretend play to enhance social competence of children with ASD.

- **Kent C, Cordier R, Joosten A, Wilkes-Gillan S, Bundy A et al.(Australian Occupational Therapy Journal, 2018)**

The aim of this randomized control trail was to determine the peer mediated intervention to improve play skills in children with Autism Spectrum Disorder (ASD). This study was conducted on 10 children and 10 intervention sessions were planned to participants. The participant's outcome measures were analyzed by using Test Of Playfulness (TOP), The Piers-Harris 2 and the Parent Relationship Questionnaire. The study results were concluded that significant effects of the peer mediated intervention to improve play skills on children with ASD.

- **Corbett, Blythe A et al (Journal of Autism and Developmental Disorders, 2015)**

The aim of this study was to determine the impact of a peer-mediated and theatre-based intervention on social competence in children with ASD. Thirty six children were included in this study. This study was conducted on 8 to 14 years old aged children. Autism Diagnostic Observation Schedule (ADOS) and Social responsiveness scales were used to measure participant's outcomes. This study results concluded that the effect of theatre based interventions on social responses with peers and others among children with ASD.

- **Bruni TP et al. (Journal of Psychoeducational Assessment, 2014)**

This study was to review the Social Responsiveness Scale-Second Edition (SRS-2) for measuring deficits in social behavior associated with Autism Spectrum Disorder (ASD). This tool used to three age ranges such as preschoolers (2.6 to 4.6 years), School aged children (4 to 18 years) and adults (19 to 89 years). This study results were indicated that the significant outcome measurement of social skills on children with ASD.

- **Corbett BA, Swain DM, Coke C, Simon D, Newsom C, Houchins-Juarez N, et al. (Autism Research, 2013)**

The purpose of this study was to describe the effectiveness of behavioral strategies and theatrical techniques in youth with ASD. This study conducted on 8 to 17 years old aged people with different contexts such as home and playground. Non parametric Wilcoxon Signed - rank test was used to analysis the pre and post test data values in this study. This study results were indicated that the significant effects of peer mediated model to improve social skills among participants with ASD.

- **Patra S, Arun P et al.(Indian Journal of Psychological Medicine, 2011)**

The study aimed to determine the value of Indian Scale for Assessment of Autism (ISAA) in child guidance clinic. This study was conducted on 35 participants with diagnosed ASD children associated with other conditions (such as, Intellectual disability, Seizure and Developmental delay), The participant's outcomes were evaluated by using ISAA. This study results were indicated to significant the outcome values for determine the severity of ASD on children.

METHODOLOGY

STUDY DESIGN

- Quasi experimental design

SOURCE OF DATA

This study permission was granted by Board of Ethical Committee, Sree Abirami Institutions after reviwing the research proposal. Then this study was conducted at Out Patient Occupational Therapy Department, Sree Abirami College of Occupational Therapy, Coimbatore, Tamilnadu - 641024

METHOD OF DATA COLLECTION

SELECTION CRITERIA

INCLUSION CRITERIA

- Both males and females were included.
- Participants were between the ages of 6 to 12 years.
- Children with Autism Spectrum Disorder were included.

EXCLUSION CRITERIA

- The participants were excluded if they have any other pediatric conditions and neurological disorders.
- Participants were excluded below 6 years and above 12 years.

VARIABLES:

INDEPENDENT VARIABLES:

Social cognition based peer mediated occupational therapy interventions and Conventional Occupational Therapy interventions

DEPENDENT VARIABLES:

Children with Autism Spectrum Disorder

POPULATION:
Accessible population

SAMPLING TECHNIQUE:
Convenient sampling technique was adapted.

SAMPLE SIZE
This study conducted on 70 participants. (39 Males and 31 Females)
The participants are categorized into two groups.
- The Control group

35 participants were included in this control group. (16 Males and 19 Females)
- The experimental group

35 participants were included in this control group. (23 Males and 12 Females)

TOOLS DESCRIPTIONS
1) Indian Scalefor Assessment of Autism (ISAA)
The ISAA is used to measure the severity of ASD on 3 to 22 years old aged children. This scale is administrated for 15 to 20 minutes. It consists of a 40-item and six domains (Social Relationship and Reciprocity (9 questions); Emotional Responsiveness (5 questions); Speech-Language and Communication (9 questions); Behavior Patterns (7 questions); Sensory Aspects (6 questions); and Cognitive Component (4 questions)) in this scale.It is a 5 point likert scale. This scale scoring ranges from 40 to 200. [(2)]

Scoring interpretation:

Scores	Percentile Ranges	Descriptions
Score 1 (Rarely)	0% to 20%	Person able to participate within normal limits for their age and socio-educational background
Score 2 (Sometimes)	21%–40%	Person able to participate independently in activities of daily life
Score 3 (Frequently)	41%–60%	Person able to participate activities of daily life with minimum assistance
Score 4 (Mostly)	61%–80%	Person needs more assistance
Score 5 (Always)	81%–100%	Person completely dependent in activities of daily life

Norms for ASD severity interpretation:

Scoring ranges	Severity of Autism
Less than 70	Normal
70 to 106	Mild Autism
107 to 153	Moderate Autism
Greater than 153	Severe Autism

The ISAA tool's reliability of 0.927 and validity of 0.956 were significant specificity and sensitivity of this measurement criteria among children with ASD.[(3)]

2) Social Responsiveness Scale - 2 (SRS - 2) - School aged form
The SRS - 2 school aged form was a parent and was administrated for 15 to 20 minutes. It contained 65 items and was a 4 point likert scale. It was designed to measure 4 years to 18 years old aged people. It was used to determine severity of autism spectrum disorder and their social skills among children and teen ages. This scale was consisted of six sub domains (included SRS Social Communication and Interaction (SCI), Awareness (AWR), Cognition (COG), Motivation (MOT), Communication (COM) and SRS Restricted Interests and Repetitive Behavior (RRB)).[(4,5)] The reliability and validity of the SRS - 2 were greater than 0.70 and 0.50 respectively. [(5)]

TECHNIQUE OF APPLICATION:
Social Cognition based Peer Mediated Occupational Therapy interventions
Social cognition is the ability to recognizing the difference between oneself and others, recognizing others' emotions, collaborating, sharing episodic memory, taking perspectives and experiencing theory of mind, and feeling empathy.[(7)]Social cognition was based on theory of mind,emotion perception and processing, andsocial perception and knowledge. [(6)]
The peer mediated intervention aimed to develop cognitive skills related social awareness, interaction, adaptive responses and play skills among children and it is based on perceive, recall, plan and perform stratregies.
The therapist mediated program focused to develop self initiative skills within children.

Intervention Structure

This intervention structure were planned only to experimental group participants.

Sessions	Duration	Intervention Plan	Activities
Session 1	45 minutes each sessions for 2 weeks	To explain about study and conduct pretest	The initial evaluation (pre-test) was done by using ISAA and SRS 2 on 6 to 12 years old aged school children (Both control and Experimental group) for 2 weeks regularly.
Session 2	Conventional Occupational therapy intervention (25 minutes) and Peer mediated activities (20 minutes) each sessions for 2 weeks	To build interaction between participants	The funny group play activities was planned to experimental group participants. This group was planned with three to five children. **Activities:** ● Peek a boo ● Mirror based facial expression activities ● Puppet play
Session 3	Conventional Occupational therapy intervention (25 minutes) and Peer mediated activities (20 minutes) each sessions for 2 weeks	To develop peer mediated associative play concept among children with ASD	The associative group play activities was planned to experimental group participants. This group were planned with three to five children. Limited play materials was given to that children. **Activities:** ● Hand painting ● Sorting based Vegetable painting
Session 4	Conventional Occupational therapy intervention (25 minutes) and Peer mediated activities (20 minutes) each sessions for 2 weeks	To develop peer mediated associative play concept among children with ASD	The associative group play activities were planned to experimental group participants. This group was planned with three to five children. Limited play materials was given to that children. The group were changed. **Activities:** ● Paper Mache and Finger painting
Session 5	Conventional Occupational therapy intervention (25 minutes) and Social cognition based Peer mediated activities (20 minutes) each sessions for 2 weeks	To develop peer mediated competitive play concept through Video modeling	The video models was showed to participants related simple competitive gross motor play skills. **Video Model:** ● Relay walking game concept This play activities were planned to two parallel group with supervision and included three children for each parallel group in this play activity. (N = 6)
Session 6	Conventional Occupational therapy intervention (25 minutes) and Social cognition based Peer mediated activities (20 minutes) each sessions for 2 weeks	To develop peer mediated competitive play concept through Video modeling	The video models was showed to participants related simple competitive gross motor play skills. **Video Model:** ● Relay walking on balance beam play concept This play activities were planned to two parallel group with supervision and included three children for each parallel group in this play activity. (N = 6)
Session 7	Conventional Occupational therapy intervention (25 minutes) and Social cognition based Peer mediated activities (20 minutes) each sessions for 2 weeks	To develop peer mediated modeling play concept through therapist's demonstration	The modeling play concept was demonstrated to participants related simple copying play activities. **Activity:** ● Forward zig zack crawling ● Backward Zig zack crawling This play activities were planned to two parallel group with supervision and included three children for each parallel group in this play activity. (N = 6)
Session 8	Conventional Occupational therapy intervention (25 minutes) and Social cognition based Peer mediated activities (20 minutes) each sessions for 2 weeks	To develop peer mediated and therapist modeling play concept through therapist's demonstration	The modeling play concept was demonstrated to participants related complex copying play activity. **Activity:** ● Reverse jumping with obstacles This play activities were planned to two parallel group with supervision and included three children for each parallel group in this play activity. (N = 6)
Session 9	Conventional Occupational	To develop peer mediated	The modeling play concept was

	therapy intervention (25 minutes) and Social cognition based Peer mediated activities (20 minutes) each sessions for 2 weeks	and therapist modeling play concept through therapist's demonstration	demonstrated to participants related complex copying play activity. **Activity:** ● Hopscotch This play activities were planned to two parallel group with supervision and included three children for each parallel group in this play activity. (N = 6)
Session 10	Conventional Occupational therapy intervention (25 minutes) and Social cognition based Peer mediated activities (20 minutes) each sessions for 2 weeks	To develop emotional responses to others by participants	The participants were demonstrated his or her own emotional actions (Such as laughing, crying, happiness and sad, etc) to each others.
Session 11	Conventional Occupational therapy intervention (25 minutes) and Social cognition based Peer mediated activities (20 minutes) each sessions for 2 weeks	To develop peer mediated cooperative play concept among children	The therapist guided and facilitated to participate in cooperative play among children. Activities: ● Cricket
Session 12	45 minutes each sessions for 2 weeks	To get feedback, explain about home program and conduct post-test	The follow up evaluation (post-test) was done by using ISAA and SRS 2 on 6 to 12 years old aged school children (Both control and Experimental group) for 2 weeks regularly.

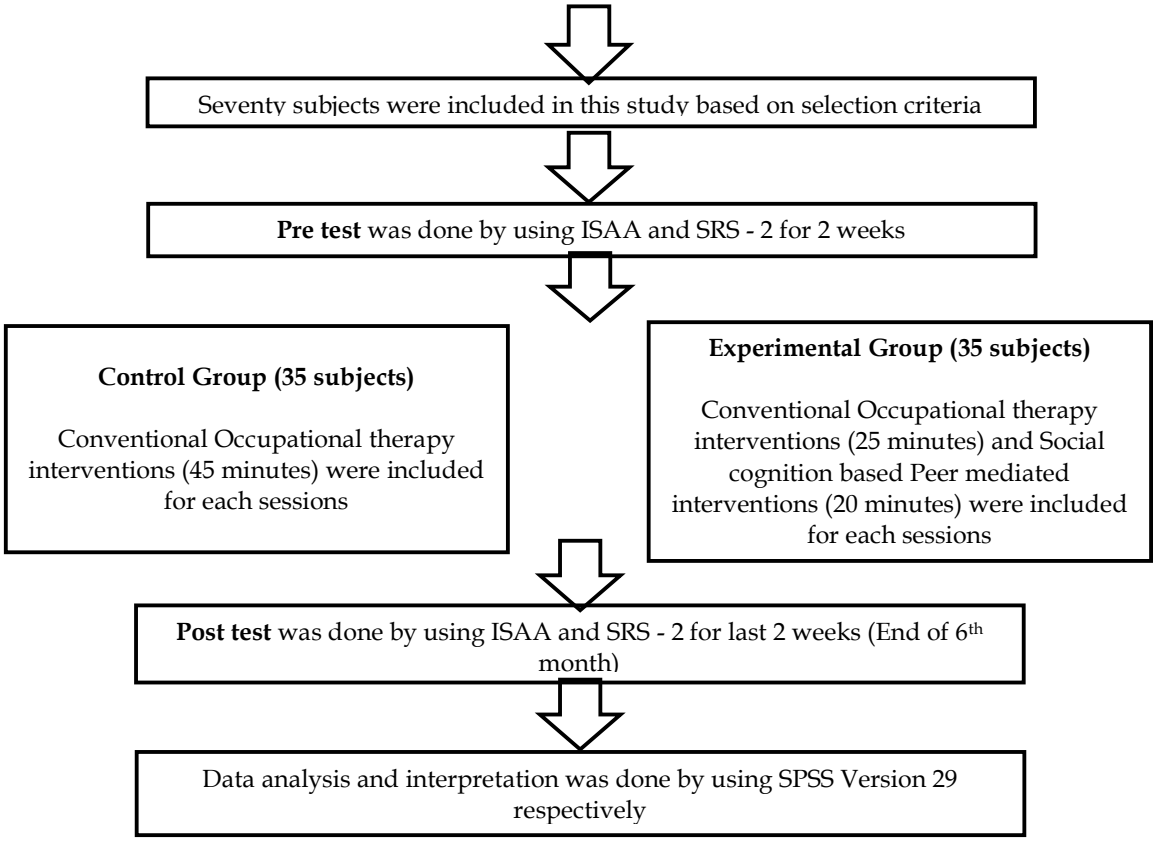
STUDY DURATION:
This study was conducted for 6 months among children with ASD.

OUTCOME MEASURES
This study outcomes were measured by using Indian Scale of Assessment for Autism (ISAA) and Social Responsiveness Scale - 2 (SRS 2).

STASTICAL ANALYSIS
The collected data were divided on the basis of pre test and post test values of both control and experimental group. Then this data values are used to analyse the mean, standard deviation, t value and p value by using SPSS version 29 respectively.

TREATMENT PROTOCOL CHART

This quasi-experimental study permission was granted by Board of Ethical Committee, Sree Abirami Institutions, Coimbatore after reviewing the research proposal



Results

A sample size of 70 children were included in this Quasi-experimental study. This study participants were selected from Out Patient Occupational Therapy Department (OPD), Sree Abirami College of Occupational Therapy, Coimbatore. This study ethical clearance was granted by Board of Ethical Committee, Sree Abirami Institutions, Coimbatore Initially, permission for doing research was received from the subject's parents by getting a consent form. The participants were divided into two groups (the Control group and the Experimental group). The control group received conventional occupational therapy interventions and the experimental group received the combination of conventional and social cognition based peer mediated occupational therapy interventions with regular treatment. The ISAA tool was used to measure the severity of ASD among children. Then Pre-intervention and post-intervention data details such as Social awareness, social cognition, social communication, social motivation, Restricted interests and Repetitive Behaviour and Social Responsive skills were collected by using Social Responsiveness Scale -2 (SRS - 2).

The collected data was divided on the basis of the Control and Experimental groups. The divided values were used to calculate the mean, standard deviation, t value, and p-value by using Statistical Package for the Social Sciences (SPSS Version 29).

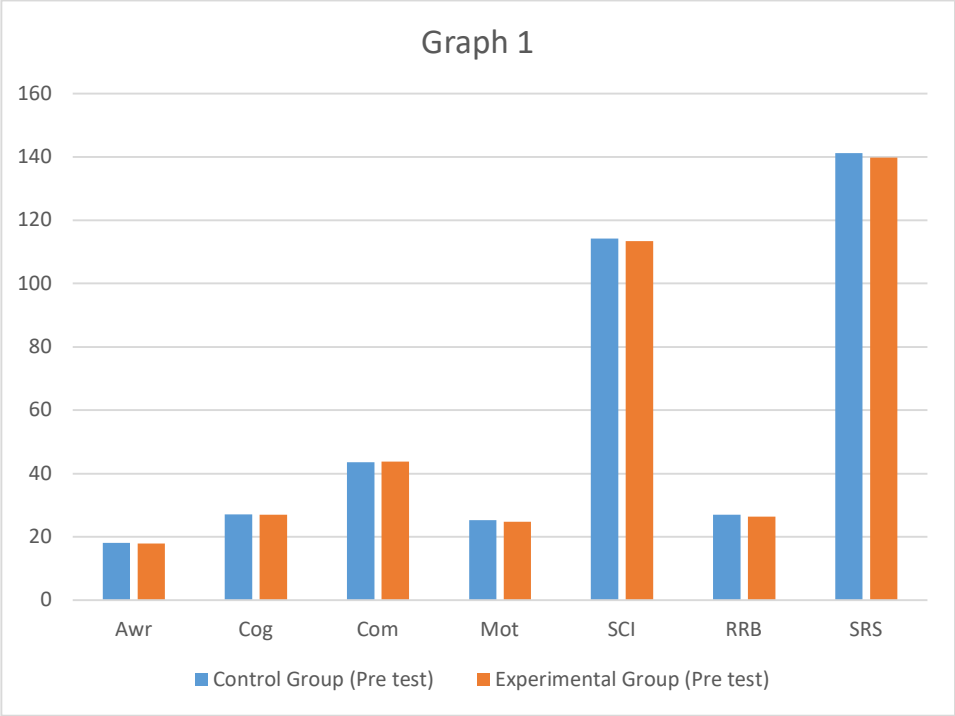
DEMOGRAPHIC CHARACTERASTICS OF PARTICIPANTS

S.NO	BASELINE CHARACTERASTICS	CONTROL GROUP	EXPERIMENTAL GROUP
1.	Number of Participants	35	35
2.	Age Range	6 to 12 years	6 to 12 years
3.	Gender Male Female		
4.	Outcome Performance	Social Cognition and competence behaviour	Social Cognition and competence behaviour
5.	Interventions	Conventional Occupational Therapy	Combination of convention and social cognition based peer mediated occupational therapy interventions

Table 1 shows the effects of social cognition based peer mediated interventions on social competence and responsive skills between the pre intervention - control and experimental group children with ASD

Category (Pre intervention - Control and Experimental Group)	Mean value	SD	t value	95% of Confidence Interval (CI)	P value	Level of significance
Awr - Control Group	18.11	2.93				
Awr - Experimental Group	17.97	2.67	0.2132	- 1.19 to 1.48	0.8318	Statistically not significant
Cog - Control Group	27.11	5.65				
Cog - Experimental Group	26.94	5.72	0.1262	- 2.54 to 2.88	0.8999	Statistically not significant
Com - Control Group	43.60	10.88				
Com - Experimental Group	43.74	11.28	0.0539	- 5.43 to 5.14	0.9571	Statistically not significant
Mot - Control Group	25.26	5.72				
Mot -Experimental Group	24.83	5.53	0.3189	- 2.25 to 3.11	0.7508	Statistically not significant
SCI - Control Group	114.20	21.07				
SCI - Experimental Group	113.37	21.67	0.1622	- 9.37 to 11.02	0.8717	Statistically not significant
RRB - Control Group	26.97	5.31				
RRB - Experimental Group	26.43	4.41	0.4653	- 1.79 to 2.87	0.6432	Statistically not significant
SRS Control Group	141.17	24.42				
SRS Experimental Group	139.80	23.99	0.2370	- 10.18 to 12.92	0.8134	Statistically not significant

Graph 1 shows the effects of social cognition based peer mediated interventions on social competence and responsive skills between the pre intervention - control and experimental group children with ASD

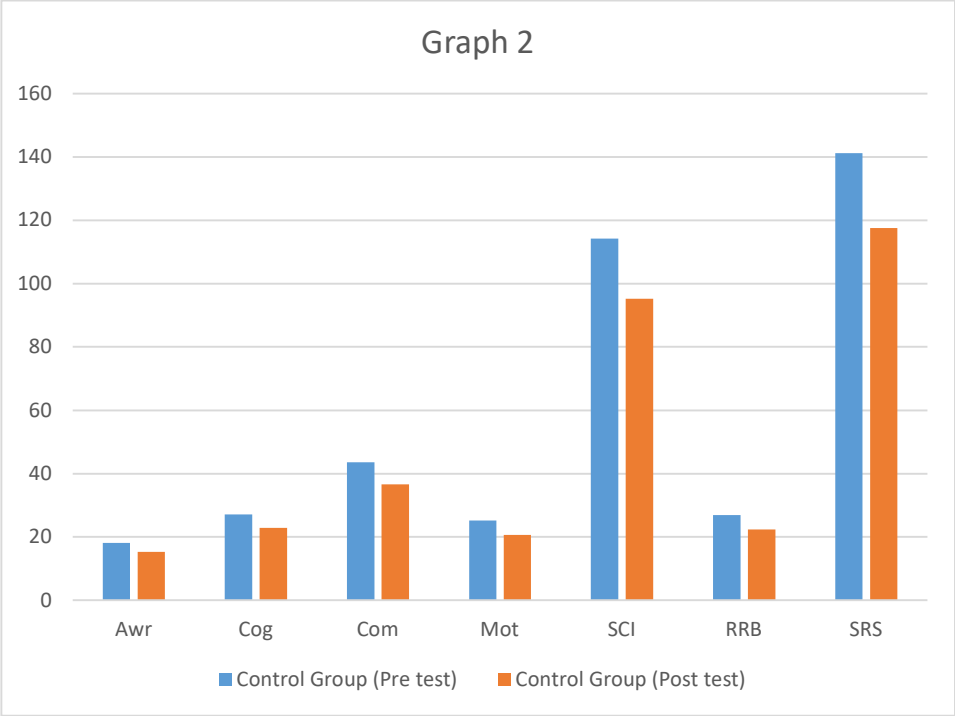


Social Awareness (Awr), Social Cognition (Cog), Social Communication (Com), Social Motivation (Mot), Social Communication and Interaction (SCI), Restricted interests and Repetitive Behavior (RRB) and Social Responsiveness Scale (SRS).

Table 2 shows the effects of social cognition based peer mediated interventions on social competence and responsive skills between the pre and post intervention of control group children with ASD

Category (Pre and Post intervention of Control Group)	Mean value	SD	t value	95% of Confidence Interval (CI)	P value	Level of significance
Awr - Control Group (Pre test)	18.11	2.93	7.0711	2.04 to 3.68	0.0001	Statistically significant
Awr - Control Group (Post test)	15.26	2.99				
Cog - Control Group (Pre test)	27.11	5.65	9.1138	3.29 to 5.17	0.0001	Statistically significant
Cog - Control Group (Post test)	22.89	5.27				
Com - Control Group (Pre test)	43.60	10.88	11.0021	5.66 to 8.23	0.0001	Statistically significant
Com - Control Group (Post test)	36.66	9.50				
Mot - Control Group (Pre test)	25.26	5.72	7.1537	3.31 to 5.94	0.0001	Statistically significant
Mot - Control Group (Post test)	20.63	5.55				
SCI - Control Group (Pre test)	114.20	21.07	13.4177	16.10 to 21.84	0.0001	Statistically significant
SCI - Control Group (Post test)	95.23	18.68				
RRB - Control Group (Pre test)	26.97	5.31	10.8598	3.76 to 5.49	0.0001	Statistically significant
RRB - Control Group (Post test)	22.34	5.22				
SRS Control Group (Pre test)	141.17	24.42	11.1059	19.26 to 27.88	0.0001	Statistically significant
SRS Control Group (Post test)	117.60	21.94				

Graph 2 shows the effects of social cognition based peer mediated interventions on social competence and responsive skills between the pre and post intervention of control group children with ASD

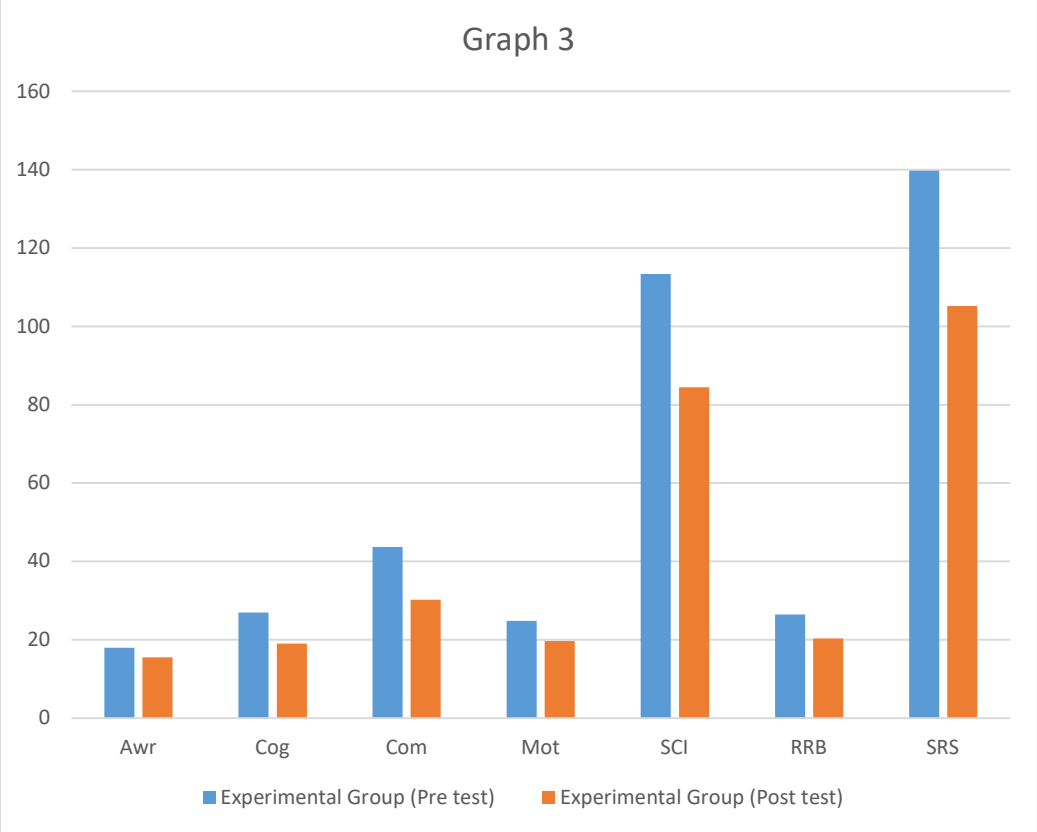


Social Awareness (Awr), Social Cognition (Cog), Social Communication (Com), Social Motivation (Mot), Social Communication and Interaction (SCI), Restricted interests and Repetitive Behavior (RRB) and Social Responsiveness Scale (SRS).

Table 3 shows the effects of social cognition based peer mediated interventions on social competence and responsive skills between the pre and post intervention of Experimental group children with ASD

Category (Pre and Post intervention of Experimental Group)	Mean value	SD	t value	95% of Confidence Interval (CI)	P value	Level of significance
Awr - Experimental Group (Pre test)	17.97	2.67	4.2666	1.29 to 3.63	0.0001	Statistically significant
Awr - Experimental Group (Post test)	15.51	3.22				
Cog - Experimental Group (Pre test)	26.94	5.72	8.9931	6.17 to 9.77	0.0001	Statistically significant
Cog - Experimental Group (Post test)	18.97	4.72				
Com - Experimental Group (Pre test)	43.74	11.18	11.3285	11.11 to 15.97	0.0001	Statistically significant
Com - Experimental Group (Post test)	30.20	9.08				
Mot - Experimental Group (Pre test)	24.83	5.53	5.5651	3.26 to 7.02	0.0001	Statistically significant
Mot - Experimental Group (Post test)	19.69	5.28				
SCI - Experimental Group (Pre test)	113.37	21.67	12.3122	24.19 to 33.75	0.0001	Statistically significant
SCI - Experimental Group (Post test)	84.40	18.04				
RRB - Experimental Group (Pre test)	26.43	4.41	8.2887	4.62 to 7.61	0.0001	Statistically significant
RRB - Experimental Group (Post test)	20.31	5.20				
SRS Experimental Group (Pre test)	139.80	23.99	12.7397	29.03 to 40.05	0.0001	Statistically significant
SRS Experimental Group (Post test)	105.26	21.10				

Graph 3 shows the effects of social cognition based peer mediated interventions on social competence and responsive skills between the pre and post intervention of Experimental group children with ASD



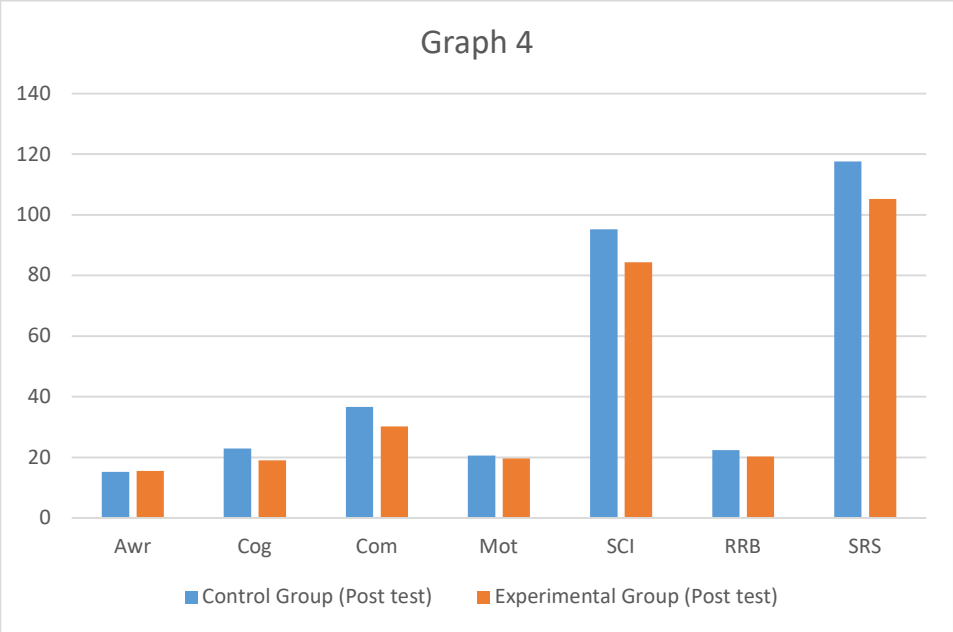
Social Awareness (Awr), Social Cognition (Cog), Social Communication (Com), Social Motivation (Mot), Social Communication and Interaction (SCI), Restricted interests and Repetitive Behavior (RRB) and Social Responsiveness Scale (SRS).

Table 4 shows the effects of social cognition based peer mediated interventions on social competence and responsive skills between the post intervention of Control and Experimental group children with ASD

Category (Post intervention of Control and Experimental Group)	Mean value	SD	t value	95% of Confidence Interval (CI)	P value	Level of significance
Awr - Control Group (Post test)	15.26	2.99	0.3460	- 1.74 to 1.23	0.7304	Statistically not significant
Awr - Experimental Group (Post test)	15.51	3.22				
Cog - Control Group (Post test)	22.89	5.27	3.2706	1.53 to 6.30	0.0017	Statistically significant
Cog - Experimental Group (Post test)	18.97	4.72				
Com - Control Group (Post test)	36.66	9.50	2.9065	2.02 to 10.89	0.0049	Statistically significant
Com - Experimental Group (Post test)	30.20	9.08				
Mot - Control Group (Post test)	20.63	5.55	0.7284	- 1.64 to 3.53	0.4689	Statistically not significant
Mot - Experimental Group (Post test)	19.69	5.28				
SCI - Control Group (Post test)	95.23	18.68	2.4667	2.07 to 19.59	0.0162	Statistically significant
SCI - Experimental Group (Post test)	84.40	18.04				

RRB - Control Group (Post test)	22.34	5.22	1.6281	- 0.46 to 4.51	0.1081	Statistically not significant
RRB - Experimental Group (Post test)	20.31	5.20				
SRS Control Group (Post test)	117.60	21.94	2.3991	2.08 to 22.61	0.0192	Statistically significant
SRS Experimental Group (Post test)	105.26	21.10				

Graph 4 shows the effects of social cognition based peer mediated interventions on social competence and responsive skills between the post intervention of Control and Experimental group children with ASD



Social Awareness (Awr), Social Cognition (Cog), Social Communication (Com), Social Motivation (Mot), Social Communication and Interaction (SCI), Restricted interests and Repetitive Behavior (RRB) and Social Responsiveness Scale (SRS).

The study results were stated that there will be significant the effects of social cognition based peer mediated occupational therapy interventions to improve social competence among children with ASD. This study results were showed the positive impact on outcome measures of social awareness, cognition, communication, motivation, interaction, restricted interests and repetitive behaviour and social responsive skills among children with ASD, especially in experimental group.

Discussion

The purpose of this study was to determine the effects of social cognition based peer mediated intervention to improve social competence among children with ASD.

Table 1 and Graph 1 was showing the effects of social cognition based peer mediated interventions on social competence and responsive skills between the pre intervention - control and experimental group children with ASD, where mean values, t values and p values of Social cognition, Social awareness, Social communication, Social Motivation, Social Communication and Interaction (SCI), Restricted interests and Repetitive Behaviour (RRB), Social Responsiveness Scores (SRS) were showed it was not statistically significant.

Table 2 and Graph 2 was showing the effects of social cognition based peer mediated interventions on social competence and responsive skills between the pre and post intervention of control group children with ASD, where mean values, t values and p values of Social cognition, Social awareness, Social communication, Social Motivation, Social Communication and Interaction (SCI), Restricted interests and Repetitive Behaviour (RRB), Social Responsiveness Scores (SRS) were showed it was statistically significant.

The results were supported by McConnell K, Keenan C, Storey C, Thurston A et al (2024), the purpose of this study was to review the Video-based interventions to develop social behavioural skills on 3 to 18 years old aged autistic children and young people. This study data were collected from 8 electronic databases and were searched 438 studies (394 case study designs, 25 randomised controlled trials, 15 non-randomised group designs, and 8 pretest–posttest designs.) from electronic databases. The study results were found the evidences on video - based interventions to develop social behavioural responses among ASD cases.

Corbett, Blythe A et al., (2015), The aim of this study was to determine the impact of a peer-mediated and theatre-based intervention on social competence in children with ASD. Thirty six children were included in this study. This study was

conducted on 8 to 14 years old aged children. Autism Diagnostic Observation Schedule (ADOS) and Social responsiveness scales were used to measure participant's outcomes. This study results concluded that the effect of theatre based interventions on social responses with peers and others among children with ASD.

Table 3 and Graph 3 was showing the effects of social cognition based peer mediated interventions on social competence and responsive skills between the pre and post intervention of Experimental group children with ASD, where mean values, t values and p values of Social cognition, Social awareness, Social communication, Social Motivation, Social Communication and Interaction (SCI), Restricted interests and Repetitive Behaviour (RRB), Social Responsiveness Scores (SRS) were showed it was statistically significant.

This results were supported by Kent C, Cordier R, Joosten A, Wilkes-Gillan S, Bundy A et al.(2018) the aim of this randomized control trail was to determine the peer mediated intervention to improve play skills among children with Autism Spectrum Disorder (ASD). Ten children were inluded and 10 intervention sessions were given to participants in this study. The participant's outcome measures were done by using Test Of Playfulness (TOP), The Piers-Harris 2 and the Parent Relationship Questionnaire. The study results were concluded that significant effects of the peer mediated intervention to improve play skills on children with ASD.

Kent C, Cordier R, Joosten A, Wilkes-Gillan S, Bundy A et al.,(2020), the aim of this study was to investigate the effects of peer mediated interventions to develop play skills among Children with ASD. This randomized control trail was conducted on sixty five typically developing peers with ASD children. The Test of Playfulness tool was used to measure participant's outcome in this study. This study results were found the moderate significant changes of play skills within ASD children.

Table 4 and Graph 4 was showing the effects of social cognition based peer mediated interventions on social competence and responsive skills between the post intervention of Control and Experimental group children with ASD, where mean values, t values and p values of Social awareness, Social Motivation, Restricted interests and Repetitive Behaviour (RRB) were showed it was not statistically significant. Where means values, t values and p values of Social cognition, Social Communication and Interaction, Social responsiveness scores were showed it was statistically significant.

This study results were supported by Anu Nr, Sugi S, Rajendran K et al., (2019), the purpose of this study was to determine the impact of pretend play behaviors to improve social competence through pretend play for children with autism spectrum disorder (ASD). This study was conducted on 3 to 7 years old aged children with ASD for 6 months. 42 children were included in this study. These study outcomes were measured by using Child-Initiated Pretend Play Assessment and Communication DEALL Developmental Checklist for social skills. This study results were found to identify the impact of pretend play to enhance social competence of children with ASD.

This study results were indicated that the effects of social cognition based peer ,mediated occupational therapy interventions to improve the social awareness, cognition, intrapersonal skills, interaction between peers, social communication, social responses and play skills among children with ASD. This developed play skills were help to increase interaction with typically developing peer group children in other contextual settings such as home, out door environment, relative houses and community.

Especially, the social cognition based peer mediated interventions such as peer mediated play concepts, video modeling, therapist modeling were help to develop social competence behaviours among children with ASD.

This social cognition based peer mediated occupational therapy interventions strategies and concepts will help to increase intra personal and inter personal skills, social and non social cognitive skills among children with ASD while playing with other typically developing peer group children, performing academic related school tasks, communicating with people and participating in daily routines at various context in society.

Conclusion

This study conclusion stated that the significant positive effects of social cognition based peer mediated interventions to improve social competence among children with ASD. Especially, the social cognition based activities, peer mediated techniques (such as video modeling, visual feedback, associative play and competitive play concepts and role play) to improve interpersonal skills, social participation and adaptive functioning skills among children with Autism Spectrum Disorder.

Future directions and recommendations

This study was determine the effects of the social cognition based peer mediated occupational therapy interventions on children with ASD. This study was not planned to measure the social competence of other developmental disabilities except ASD and was conducted on a small population at one particular place. Further, future studies will be plan to conduct on various pediatric conditions to improve social competence among children and can be conduct on different places and cultures of large population.

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Conflict of interest

We does not receive any financial compensation from our organization. There is no conflicts of interest declared by authors or invigilators.

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Annexures

MASTER CHART

Indian Scale for Assessment of Autism (ISAA)

S.NO	ISAA Score	S.NO	ISAA Score
1.	76	36.	74
2.	79	37.	78
3.	81	38.	78
4.	82	39.	81
5.	83	40.	83
6.	85	41.	85
7.	89	42.	85

8.	91	43.	89
9.	91	44.	91
10.	95	45.	93
11.	97	46.	96
12.	97	47.	97
13.	98	48.	98
14.	99	49.	98
15.	104	50.	102
16.	109	51.	105
17.	111	52.	108
18.	115	53.	116
19.	118	54.	118
20.	118	55.	119
21.	123	56.	127
22.	127	57.	129
23.	127	58.	131
24.	133	59.	134
25.	142	60.	143
26.	146	61.	145
27.	149	62.	147
28.	153	63.	151
29.	157	64.	153
30.	161	65.	158
31.	163	66.	161
32.	164	67.	165
33.	168	68.	167
34.	171	69.	178
35.	178	70.	181

CONTROL GROUP VALUES

Control Group - Pre test Values of Social Responsiveness Scale – 2 (SRS - 2)

S.NO	Awr	Cog	Com	Mot	SCI	RRB	SRS - 2
1.	10	13	23	13	63	12	75
2.	16	13	19	11	59	18	77
3.	18	17	15	19	69	23	92
4.	14	23	38	20	95	28	123
5.	20	21	36	23	100	27	127
6.	18	19	39	29	105	16	121
7.	10	21	38	31	100	29	129
8.	15	23	40	24	102	33	135
9.	19	28	37	28	112	31	143
10.	17	29	41	25	112	19	131
11.	16	32	37	17	102	23	125
12.	18	33	29	15	95	22	117
13.	19	31	40	18	108	25	133
14.	17	33	48	27	125	22	147
15.	22	31	53	31	137	19	156
16.	21	29	47	26	123	26	149
17.	19	33	49	31	130	35	165
18.	22	31	41	29	123	31	154
19.	17	24	39	25	105	29	134
20.	19	27	41	25	112	30	142
21.	17	25	47	21	110	27	137
22.	15	31	38	25	109	31	140
23.	17	28	45	28	118	29	147
24.	19	31	47	26	123	31	154
25.	21	28	51	27	127	33	160
26.	17	29	48	25	119	29	148
27.	19	21	59	29	128	27	155
28.	21	32	55	26	134	29	163
29.	22	33	57	27	139	30	169
30.	20	31	52	26	129	31	160
31.	19	25	49	27	120	29	149

32.	21	31	58	31	141	33	174
33.	18	30	59	29	136	27	163
34.	22	31	58	31	144	29	173
35.	19	32	53	39	143	31	174

Awr – Social Awareness, Cog – Social Cognition, Com – Social Communication, Mot - Social Motivation, SCI – Social Communication and Interaction, RRB – Restricted Interests and Repetitive Behaviour, SRS – Social Responsiveness Scale

Control Group - Post test Values of Social Responsiveness Scale – 2 (SRS - 2)

S.NO	Awr	Cog	Com	Mot	SCI	RRB	SRS - 2
1.	7	10	19	9	45	9	54
2.	14	10	15	10	49	12	61
3.	15	14	16	11	56	19	75
4.	16	19	31	14	81	22	103
5.	18	17	29	27	91	25	116
6.	15	21	35	24	95	13	108
7.	12	18	32	27	89	21	110
8.	12	19	38	16	85	31	116
9.	17	23	33	21	94	28	122
10.	14	21	34	19	88	15	103
11.	18	29	33	15	95	21	116
12.	14	29	22	17	82	18	100
13.	15	27	36	20	98	21	119
14.	13	25	38	21	97	18	115
15.	18	27	47	26	118	15	133
16.	17	25	39	21	102	21	123
17.	15	29	37	23	104	28	132
18.	19	27	36	22	104	26	130
19.	18	28	33	21	100	26	126
20.	14	23	32	18	87	24	111
21.	12	19	35	19	85	21	106
22.	11	19	33	29	92	22	114
23.	15	23	39	24	101	24	126
24.	13	28	32	21	94	27	121
25.	18	22	42	22	104	29	133
26.	12	24	42	19	97	23	120
27.	11	16	45	24	96	21	117
28.	16	27	47	10	100	21	121
29.	18	23	41	24	96	29	125
30.	17	29	45	21	112	27	139
31.	14	21	42	19	96	21	117
32.	19	27	52	24	124	29	153
33.	21	27	51	22	121	23	144
34.	20	27	58	31	136	25	161
35.	16	28	44	31	119	27	146

Awr – Social Awareness, Cog – Social Cognition, Com – Social Communication, Mot - Social Motivation, SCI – Social Communication and Interaction, RRB – Restricted Interests and Repetitive Behaviour, SRS – Social Responsiveness Scale

EXPERIMENTAL GROUP VALUES

Experimental Group - Pre test Values of Social Responsiveness Scale – 2 (SRS - 2)

S.NO	Awr	Cog	Com	Mot	SCI	RRB	SRS - 2
1.	11	12	19	14	56	17	73
2.	18	15	17	10	60	19	79
3.	22	19	18	18	77	22	99
4.	16	21	39	21	97	30	127
5.	18	20	35	26	96	29	125
6.	15	17	37	25	94	25	119
7.	12	18	41	33	104	25	129
8.	17	25	38	21	101	29	130
9.	18	31	39	25	113	28	141
10.	16	28	48	27	119	18	137

11.	14	27	36	18	95	27	122
12.	20	32	33	19	104	23	127
13.	18	29	47	22	116	19	135
14.	19	29	43	24	115	28	143
15.	21	33	51	29	133	20	153
16.	22	31	48	28	129	24	153
17.	18	32	53	30	133	31	164
18.	19	29	43	25	116	30	146
19.	17	26	41	21	105	31	136
20.	15	29	44	23	111	29	140
21.	19	27	41	23	110	26	136
22.	18	35	32	25	110	32	142
23.	15	29	49	26	119	25	144
24.	17	23	37	21	98	22	120
25.	22	32	58	31	143	31	174
26.	19	25	43	21	108	23	131
27.	18	23	53	27	121	29	150
28.	16	30	53	29	128	30	158
29.	20	29	59	31	139	25	164
30.	18	28	56	22	124	33	157
31.	21	29	52	29	131	25	156
32.	20	32	55	29	136	32	168
33.	19	31	58	31	139	31	170
34.	19	33	56	27	135	30	165
35.	22	34	59	38	153	27	180

Awr – Social Awareness, Cog – Social Cognition, Com – Social Communication, Mot - Social Motivation, SCI – Social Communication and Interaction, RRB – Restricted Interests and Repetitive Behaviour, SRS – Social Responsiveness Scale

Experimental Group - Post test Values of Social Responsiveness Scale – 2 (SRS - 2)

S.NO	Awr	Cog	Com	Mot	SCI	RRB	SRS - 2
1.	6	8	15	10	39	10	49
2.	12	11	12	11	46	11	57
3.	16	13	12	10	51	17	68
4.	15	17	25	17	74	19	93
5.	17	15	25	24	81	23	104
6.	16	20	31	22	89	12	101
7.	11	15	27	15	68	17	85
8.	13	15	27	12	67	29	96
9.	15	19	27	19	80	21	101
10.	15	17	25	18	75	17	102
11.	14	25	27	17	83	17	100
12.	17	21	19	13	70	15	85
13.	18	24	31	17	90	18	108
14.	15	21	29	19	84	20	104
15.	20	22	41	19	102	17	119
16.	19	27	43	23	112	23	135
17.	19	21	35	21	96	30	126
18.	21	28	31	19	99	29	128
19.	19	21	22	25	87	23	110
20.	17	19	26	19	83	29	111
21.	15	16	22	16	69	22	91
22.	13	11	27	24	75	19	94
23.	18	19	32	27	96	19	115
24.	15	22	26	25	88	29	117
25.	10	13	21	19	63	15	78
26.	16	22	38	21	97	19	126
27.	10	12	33	21	76	18	94
28.	19	23	39	12	93	17	110

29.	15	21	37	27	100	21	121
30.	16	23	39	28	106	22	128
31.	13	17	39	25	94	19	113
32.	15	22	43	19	99	23	122
33.	20	22	47	19	108	19	127
34.	15	19	39	28	100	29	129
35.	18	23	45	28	114	23	137

Awr – Social Awareness, Cog – Social Cognition, Com – Social Communication, Mot - Social Motivation, SCI – Social Communication and Interaction, RRB – Restricted Interests and Repetitive Behaviour, SRS – Social Responsiveness Scale