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ENHANCING EYE CONTACT FOR CHILDREN WITH AUTISM SPECTRUM DISORDER USING PUPPETS

Mr. Gokul Raj¹, Dr. Shankar², Dr. Punniya Moorthy³, Mr. Raja⁴

¹Occupational Therapist

²Lecture in Occupational Therapy

³principal of Occupational Therapy

⁴Rehabilitation Occupational Therapists

ABSTRACT

AIM:

The aim of the study is enhancing eye contact for children with autism spectrum disorder using puppets.

METHOD:

A quasi-experimental single-group pre-post study was conducted among 20 children with Autism Spectrum Disorder (ASD) aged 5–10 years attending Sumathy Occupational Therapy Centre, Cuddalore. Participants were selected based on predefined inclusion and exclusion criteria. Baseline eye contact was assessed using the Eye Contact Avoidance Scale (ECAS). A puppet-based occupational therapy intervention focusing on improving eye contact and social interaction was provided for 20 minutes per session, three times per week for 12 weeks (36 sessions). Following the intervention, eye contact was reassessed using the ECAS, and pre- and post-intervention scores were statistically analysed to determine the effectiveness of the intervention.

RESULT:

The study was conducted to improve eye contact in children with autism spectrum disorder. The pre-test and post test scores have been calculated and performed paired 't' tests for the collected data. The bar graph represents the mean value of pre and post. Paired 't' test was used to compare the pre-test and post - test values of participants with eye contact avoidance according to the score in 'EYE CONTACT AVOIDANCE SCALE' This showed that there was a significant improvement in post score compared to pre score resulting in improvement in eye contact (P value<0.005).

CONCLUSION:

From this study, it is concluded that using puppets as a therapeutic tool, has significantly enhanced eye contact in children with autism spectrum disorder. This method combines the appeal of play with the therapeutic goals of improving social skills and communication skills, offering a creative and effective approach to supporting children in their developmental journey.

KEY WORDS: AUTISM SPECTRUM DISORDER, EYE CONTACT AVOIDANCE SCALE, PUPPETS, EYE CONTACT

1.INTRODUCTION

Autism spectrum disorder (ASD) is a complex Developmental disorder involving persistent challenges with social communication, restricted interests, eye contact with humans, and repetitive behaviour while autism is considered a lifelong disorder and the degree of impairment in functioning. These challenges varies between individuals with autism spectrum disorder. Autism Spectrum Disorder (ASD) is a complex developmental condition characterized by social interaction problems and restricted behaviour patterns or interests (American Psychiatric Association [APA],2013). The symptoms are present early in life. Although autism spectrum disorder (ASD) begins in early development. It can last throughout a person's lifetime. Eye contact problems are also common in autism spectrum disorder(ASD).

India is a populous country of nearly 1.3 billion people with children ≤ 15 years constituting nearly one- third of the population. It has been estimated that more than 2 million people might be affected with autism spectrum disorder in India.

An occupational therapist is trained to conduct complete analysis and promote activities to help the child interact with the immediate environment and learn skills to communicate and engage. The main role of an Occupational Therapist in Autism is to inculcate daily life skills which include day-to-day tasks such as self-care, work or leisure.

CAUSES OF AUTISM SPECTRUM DISORDER

The exact cause of autism is unknown, but it clearly has genetic factors in its origins. Both genetics and environmental factors play a major role in the cause of autism. Several factors could play a role in the development of autism. They include:

- ✓ Having a twin or older sibling with autism.
- ✓ Older parental age at the time of conception.
- ✓ Brain growth disruptions in early development
- ✓ Pre-term birth.

GENETIC FACTORS

Over the last few decades, there has been a significant increase in autism genetics research. Scientists have found the autism spectrum disorder as highly heritable. Researchers have also found that specific gene variants can contribute to autism risk. A gene variant is a permanent change in the DNA sequence that makes up a gene. Some gene variants come from a person's parents, while others can occur during a person's lifetime.

ENVIRONMENTAL FACTORS

Researchers have identified several environmental factors that may play a number of roles in developing autism:

- ✓ Bacterial and viral infections while pregnant.
- ✓ Maternal autoimmunity.
- ✓ The use of certain medications during pregnancy.
- ✓ Environmental toxicants, including air pollution, heavy metals and pesticides.
- ✓ Maternal obesity or diabetes.
- ✓ Older parental age at the time of conception.
- ✓ Extremely preterm birth and low birth weight

EYE CONTACT

Eye contact (i.e., eye-to-eye contact between people) is an essential component of many social interactions. In typically developing people, eye contact is used to infer mental states, convey emotions, initiate social interactions and regulate communication. Unusual eye contact behaviour (e.g., prolonged contact at another person's mouth as opposed to their eyes) is among the earliest identifiable symptoms of autism spectrum disorder (ASD). Eye contact is crucial in achieving social communication. Deviant patterns of eye contact are found in individuals with autism, therefore suffer from severe social and communicative deficits. As children with autism spectrum disorder develop, atypical eye contact may exacerbate the pervasive communication and social deficits inherent to autism spectrum disorder (ASD). In fact, one of the diagnostic criteria for autism challenges with nonverbal communication.

In one major study from 2022, researchers found differences in the brain activity of autistic people and Neurotypical people during periods of eye contact. According to the study results, the dorsal parietal region of the brain was less active during eye contact in autistic folks.

PUPPETS ACTIVITY

A puppet is an object, often resembling a human, animal or mythical figure, that is animated or manipulated by a person called a puppeteer.

Two simple types of puppets are the finger puppet, which is a tiny puppet that fits onto a single finger, and the sock puppet, which is formed and operated by inserting one's hand inside a sock.

Puppet activity improves eye contact and face to face interaction, communication skills, social skills, and facial expressions. Puppet play contributes sound, speech, movement and colour to language activities. puppet first allows them to fully understand what is being communicated and gives them time to become comfortable with the language before using it themselves.

Puppetry is a form of entertainment which has always appealed to audiences across the spectrum of age, education, status, gender, and culture.

USES OF PUPPETS

Puppets can be used in a variety of ways to support learning and development, particularly for children with autism. Here are some key uses:

1. Enhancing Communication Skills:

Puppets can serve as intermediaries, making it easier for children to express themselves and engage in conversations.

2. Improving Social Skills:

Through puppet role-play, children can practice social interactions, turn-taking, and understanding social cues in a safe and controlled environment.

3. Teaching Emotional Recognition:

Puppets can help children learn to identify and express emotions by demonstrating different facial expressions and emotional scenarios.

4. Encouraging Imaginative Play:

Puppets stimulate creativity and imagination, allowing children to create stories, scenarios, and characters, which enhances cognitive and language skills.

5. Reducing Anxiety:

Puppets can provide comfort and reduce anxiety by acting as a non-threatening companion during stressful situations or transitions.

6. Developing Motor Skills:

Manipulating puppets requires fine motor skills, which can be beneficial for developing hand-eye coordination and dexterity.

7. Facilitating Group Activities:

Puppets can be used in group settings to promote cooperative play, shared storytelling, and teamwork among children.

8. Teaching Academic Concepts:

Puppets can be incorporated into lessons to make learning more engaging, such as using a puppet to teach numbers, letters, or other academic content.

9. Building Confidence:

Performing with puppets can help children build self-confidence and self-esteem as they take on roles and express themselves through their puppet characters.

10. Supporting Therapeutic Goals:

Therapists often use puppets to work on specific therapeutic goals, such as improving language skills, addressing behavioral issues, or processing emotions.

These uses of puppets provide a versatile tool for educators, therapists, and parents to support the development and well-being of children, especially those with autism.

PUPPETRY IN THERAPY AND COUNSELLING

Puppets are often used by therapists for adults and children with learning disabilities, Behavioural problems and communication failure. Being involved in a puppetry project allows people who have low self-esteem or who think they have nothing of worth to offer, to be good at something that people around them value. Puppets allow them to contribute to society and thus regain some self-respect.

Maladjusted people can inflict violence on puppets and express their feelings against Society without remorse or repercussions. It gives them the opportunity to say what they are afraid to say, cannot say, or have said, but feel has not been understood. Sometimes the act of saying or doing something with a puppet is therapy in itself. Puppets inspire people to respond spontaneously. People are able to touch and be touched by puppets, and allow them to say and do things that might be unacceptable from a person.

Puppets are often used in hospitals where physically disabled children can come to terms with their disabilities or act out any character with any physical ability. They (as with unimpaired people) can also develop coordination and motor skills and improve verbal communication skills through puppetry.

2. REVIEW OF LITERATURE

- **Trimingham Melissa (2010)** conducted a study on objects in transition: the puppet and the autistic child''. Which was published by the Bauhaus theatre and the methodology of practical research. For this study, 20 autism children were selected. In this study concluded to the puppets using to improve the communication skills, social skills, grips.
- **Macari Suzanne et al., (2021)** conducted a study on puppets that facilitates attention to social cues in children with ASD''. Which was published by international society for autism research and wiley periodicals (LC in 2021). For this study, 16 ASD children were selected. Using the autism diagnostic observation scale (ADOS-2). In this study the puppets are used to improve communication skills.
- **Luen loy chee (2021)** conducted a study on puppetry activities in early childhood programs''. Which was published by Southeast Asia early childhood journal. For this purpose, studying puppetry activity improves the children's development through puppet art and craft story telling with puppet role playing and story reading with puppet.
- **Tamar, remer et all., (2022)** conducted a study on the effect of using puppets in elementary communication with kindergarten children with autism spectrum disorder''. Which was published by mifgash: journal of social educational work. For this study, 11 children and 11 adults were selected. using the eye contact avoidance scale. In this study concluded that the puppets used to produce primary communication, puppet created interest and enjoyment.
- **Tehrani Khoddami Mohammad et al., (2023)** conducted a study on comparing the effectiveness of puppets psychodrama and pantomime on social interaction in children with high functioning autism''. For this study two groups, a control group and an experimental group per group 15 children were selected. Using the Autism social skills profile. In this study concluded it can be used as an alternative method along with other family – oriented interventions and prevent the consequences of social interaction problems.
- **Moosapoor Maryam (2023)** has conducted a study on the effectiveness of puppets play therapy on increasing communication skills through social stories for children with autism in Rasht''. Which was published in an international journal of innovation in management economics and social skills. In this study the purpose of this research is to determine the effectiveness of puppet play therapy on increasing communication skills through social stories for children with autism in Rasht.
- **White Williams Susan et al., (2006)** conducted a study on the social skills development in children with autism spectrum disorder: a review of the intervention research. This review summarizes the state of research in group-based social Skills training programs for school-age children and Adolescents with ASD. The initial literature search resulted in over 200 Citations. Ten of the studies met the stated inclusion criteria (direct SST intervention delivered in group Format to school-age youth with ASD), three of which were unpublished dissertations. Many of the unselected studies from the initial pool involved samples Outside the targeted age range (e.g., preschoolers) or Without clear ASD diagnoses. The second phase, in which identified study references were searched. Resulted in four additional published articles for a total Of 14 empirical studies of group-based SST program For children and adolescents diagnosed with autism spectrum disorder.
- **Koegel Hurley et al., (2007)** conducted a study on, social skills intervention for children with autism. which was published on Wiley Interscience. The aim of the research on social skills remediation that follows includes a variety of interventions developed over the last 15 years, suggestions for implementing these techniques, and Relevant list of references. These interventions include video modelling, priming, self-management Written scripts, Social Stories, and pivotal response training.

- **Reichow brain et al., (2012)** conducted a study on the social skills group for people aged 6 to 21 with autism spectrum disorder (ASD). Which one published on Campbell systematic reviews. The aim of study is to improve social competence, social communication, and quality of life for people with ASD 6 to 21 years of age. There is some evidence that social skills groups can improve social competence for some children and adolescents with ASD. More research is needed to draw more robust conclusions, especially with respect to improvements in quality of life.
- **Ulf Jonsson, et al. (2018)**, have conducted a study on, “Long-term social skills group training for children and adolescents with autism spectrum disorder: a randomized controlled trial”. Social skills group training is widely used for intellectually able children and adolescents with autism spectrum disorder (ASD). This randomized trial compared an extended 24-week version of the SSG Program with standard care. The weekly sessions gradually shifted in content from acquisition of new skills to real- world application of the acquired skills. A total of 50 participants with ASD aged 8-17 years were included. The primary outcome was the Social Responsiveness Scale and the secondary outcome included parent and teacher-rated adaptive behaviors, trained-rated global functioning and clinical severity and self-reported child and caregiver stress. The assessments were made at baseline, post treatment, and at 3-months follow-up. The study suggested that a long-term SSGT program could result in larger gains in social skills than shorter SSG.
- **NINCI JENNIFER, et al., (2013)** conducted a study on an analysis of the generalization and maintenance of eye contact taught during play. The purpose of this study was to differentiate reinforcement and most-to-last prompting were implemented within the context of developmentally appropriate play activities in an effort to improve eye contact. The therapist was used to examine the eye contact of a 4- year – old boy with PDD- NOS. Maintenance data were collected at 1-, 2- and 3-months post intervention. The intervention was effective and improvements in eye contact were maintained for at least 3 months post intervention. Results are discussed in terms of implications for practitioners and directions for future research.
- **Bockler Anne, et al., (2014)**, conducted a study on Effects of Observing Eye Contact on Gaze Following in High – Functioning Autism. The present study investigated effects of observed eye contact in high – functioning autism. Twenty-seven persons who underwent an autism screening and were diagnosed with HFA (9 female; age range from 20 to 62 years, mean age 41 years). Participated in the experiment. Their performance was compared to 25 control participants (10 females, age range from 21 to 63 years, mean age 41 years) who were matched with respect to age, gender, and years of education. The results showed that based on the reduced tendency of individuals with HFA to engage in social gaze behaviour and some of the characteristic deficiencies in social communicative behavior in autism.
- **Hall S Scoot and Venema M Kaitlin (2017)** conducted a study on A Screening Tool to Measure Eye Contact Avoidance in Boys with Fragile X Syndrome. We examined the reliability, validity and factor structure of the Eye Contact Avoidance Scale (ECAS), a new 15- item screening tool designed to measure eye contact avoidance in individuals with fragile X Syndrome. Conducting a study to evaluate and teach eye contact and social skills to male children ages 8 to 16 years with fragile X Syndrome. The ECAS was divided into two sections. In the first section, caregivers completed basic demographic information. The second part of the ECAS contained questions specifically designed to measure eye contact avoidance in FXS. The results showed that in each case, planned comparison indicated that individuals with lower level of communication ability obtained significantly higher scores.
- **Rothkirch Marcus, et al., (2017)**, conducted a study on Unconscious avoidance of eye contact in autism spectrum disorder. Verbal communication is the predominant means to deliver messages in social context, nonverbal signals play an essential role in paving the way for social interaction. We recorded eye movements from 14 participants with ASD and 20 TD individuals that were matched in age and sex to the patient group while they searched for faces with different gaze directions that were not consciously perceived. The results showed that a deeper understanding of the degree of the automaticity of gaze avoidance in autism is not only relevant for a refinement of the psychopathological model of autism but could also aid the development of effective treatment.

- **Elbeltagi R, et al. (2023)**, conducted a study on, “Play therapy in children with autism”. Play is a pleasurable physical or mental activity that enhances the child’s skills involving negotiation abilities, problem solving, manual dexterity, sharing, decision making, and working in a group. This review explores the different applications of play therapy in helping children with autism disorder. The main aim of the play therapy is to prevent or solve psychosocial difficulties and achieve optimal child-healthy growth and development. This review revised the different types of play therapy that could fit children with autism in an evidence-based way. Despite weak evidence, play therapy still has potential benefits for patients and their families.

3. AIM & OBJECTIVES

3.1 Aim:

The aim of the study is enhancing eye contact for children with autism spectrum disorder using puppets.

3.2 OBJECTIVES

- To assess the level of eye contact among autism spectrum disorder (ASD) children.
- To use Animal Puppets for play activity for children with autism spectrum disorder (ASD) to improve eye contact.
- To determine the effect of animal puppets activity for enhancing social skill development and better eye contact.
- To provide statistical analyses of pre-test score and post test score followed by puppet activity.

4. METHODOLOGY

4.1 STUDY TYPE - Quasi experimental study.

4.2 STUDY DESIGN - single group study.

4.3 STUDY SETTING - Sumathy occupational therapy center, Cuddalore.

4.4 SAMPLE SIZE - 20

4.5 STUDY DURATION - Thrice a week for 12 weeks.

4.6 SELECTION CRITERIA:

4.6.1 INCLUSION CRITERIA:

- ✓ Children with Autism Spectrum Disorder (ASD) Diagnosed by paediatrician, psychiatrist
- ✓ Age 5-10 years
- ✓ Both male and female children

4.6.2 EXCLUSION CRITERIA:

- ✓ Normal children
- ✓ Age below 5 and above 10 years.
- ✓ Children with other conditions like Visual impairment, Hearing impairment, Attention deficit hyperactive disorder, Intellectual disability, learning disability, epilepsy.

4.7 OUTCOME MEASURES:

- ✓ Eye contact avoidance scale (ECAS) for evaluation.
- ✓ Puppets for intervention.

4.8 STUDY PROCEDURE:

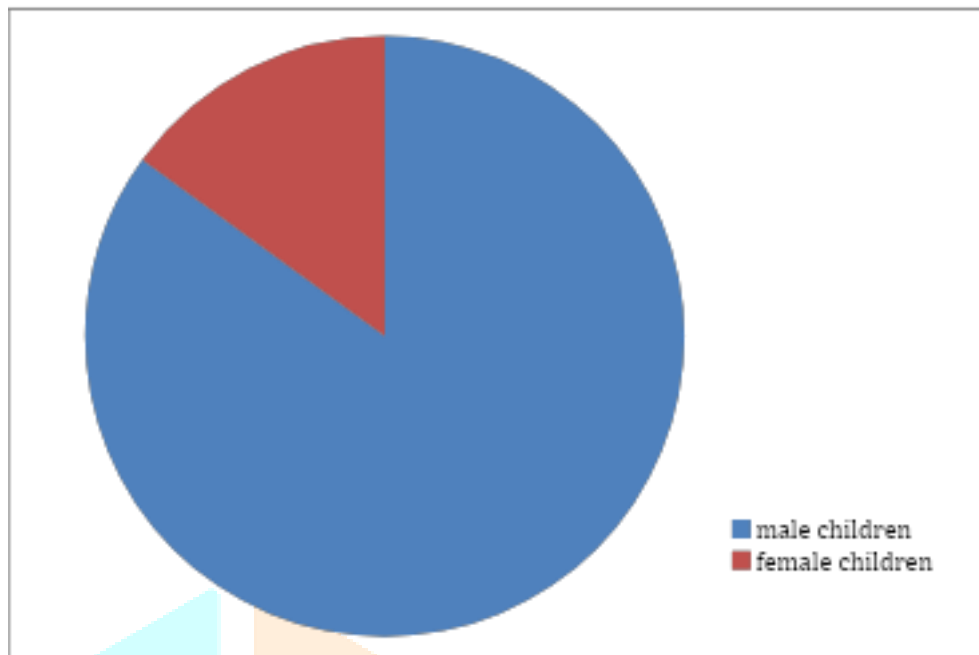
The purpose of the study is to improve eye contact in Autism Spectrum Disorder (ASD) children. 20 autism spectrum disorder children were selected for the study based on selection criteria. All of them are receiving autism spectrum disorder treatment at Sumathy occupational therapy centre, Cuddalore. Eye contact avoidance scale (ECAS) will be used to assess the level of eye contact for Autism Spectrum Disorder. Puppet's activity was given as part of an intervention programme to improve contact (social skill) training. This activity is conducted for 20 minutes to each child, over a period of 12 weeks (36 sessions). After 12 weeks of intervention programme, eye contact was reassessed using **eye contact avoidance scale (ECAS)**. Pre and post level score of eye contact was recorded and statistically analysed

5. RESULT & ANALYSIS

20 Autism Spectrum Disorder Children were included in the study and proforma were recorded; Name, Age, Gender through the structured proforma. To assess the level of eye contact by eye contact avoidance Scale (ECAS). Pre and post eye contact level score is recorded and statistically analysed.

TABLE 1: Shows Name, Age and gender of the children participated in this.

S.NO	NAME	GENDER	AGE
1	A. D	MALE CHILD	5
2	S. R	MALE CHILD	6
3	S. K	MALE CHILD	5
4	F. A	MALE CHILD	6
5	M. K	MALE CHILD	7
6	N.K	MALE CHILD	5
7	S.S	MALE CHILD	6
8	K.K	MALE CHILD	9
9	A.V	MALE CHILD	10
10	H.S	MALE CHILD	6
11	D.S	MALE CHILD	5
12	S.P	MALE CHILD	7
13	A.V	MALE CHILD	8
14	M.K	MALE CHILD	9
15	P.V	MALE CHILD	10
16	L.V	MALE CHILD	6
17	N.S	MALE CHILD	7
18	C.S	FEMALE CHILD	5
19	J.S	FEMALE CHILD	9
20	R.D	FEMALE CHILD	7

FIGURE 1: THIS CHART REPRESENTS GENDER**TABLE 2: Shows Pre and post therapy values of ECAS domain scale for autism spectrum disorder.**

S.NO	SPEAKING		LISTENING		INABILITY		DIFFICULTY		ANXIETY	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
1	7	4	8	5	7	9	9	3	10	5
2	7	3	7	4	9	10	9	2	6	6
3	6	5	6	3	3	8	9	4	8	4
4	11	3	11	6	3	9	11	5	8	3
5	6	2	5	2	2	8	8	3	8	4
6	7	4	8	3	2	10	11	2	9	5
7	8	5	8	4	7	9	10	3	9	4
8	9	3	11	3	4	8	10	2	9	3
9	8	2	8	3	6	7	9	4	10	4
10	8	3	7	4	0	9	8	5	11	2
11	11	2	9	3	5	10	9	4	8	5
12	8	3	13	4	0	7	10	3	11	2
13	9	4	8	2	7	9	7	3	8	4
14	10	3	8	2	4	8	11	4	9	5

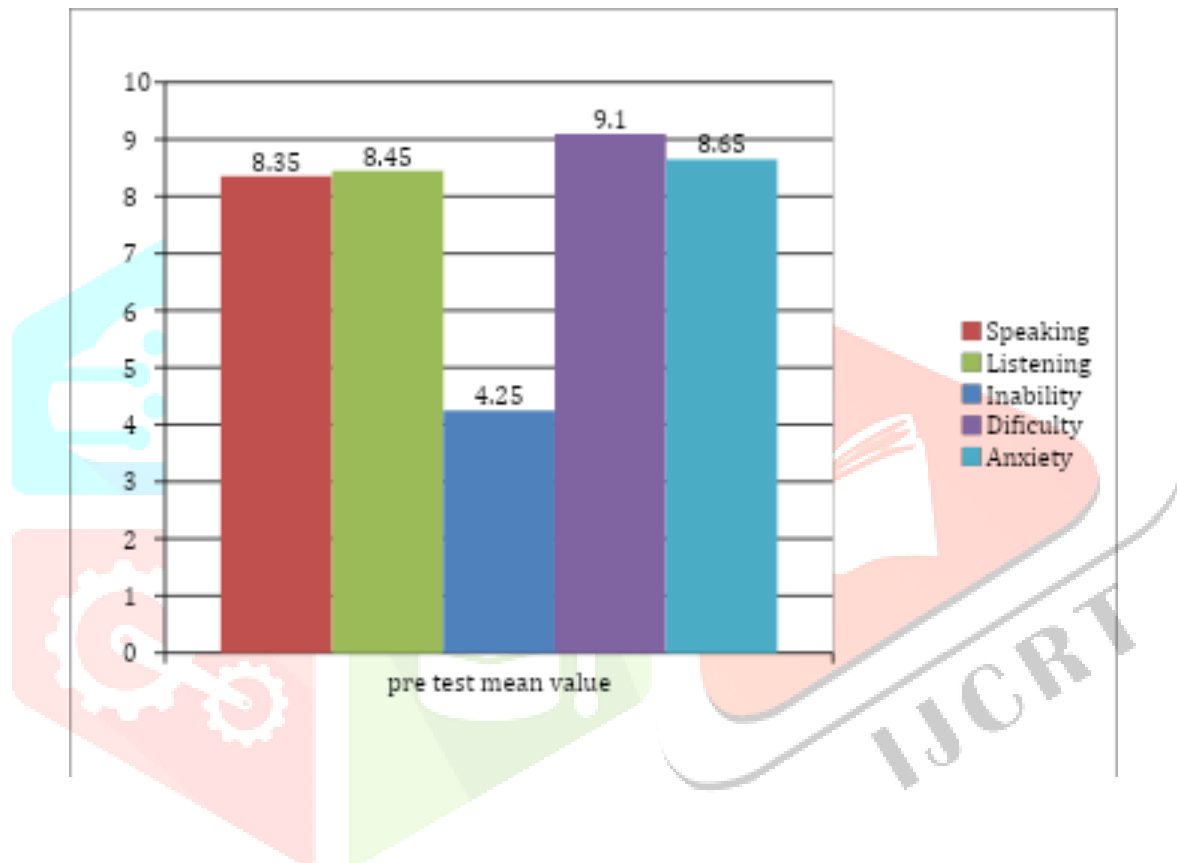
15	10	2	9	3	5	7	9	3	7	2
16	8	2	9	3	6	8	9	2	10	4
17	8	3	10	2	3	8	8	2	8	4
18	9	2	8	3	3	10	9	4	7	2
19	10	3	8	4	6	9	9	3	8	4
20	7	4	8	2	3	8	7	2	9	2

TABLE 3: Shows Pre and post therapy values of ECAS subscale for autism spectrum disorder

S.NO	INFORMANT		FRIENDS & FAMILY		UNFAMILIAR PEOPLE	
	PRE	POST	PRE	POST	PRE	POST
1	13	7	14	7	14	9
2	15	8	11	8	12	9
3	12	8	11	7	9	9
4	18	7	11	7	15	10
5	9	7	12	8	8	5
6	15	8	14	7	13	8
7	16	8	13	8	13	11
8	12	7	15	6	16	6
9	15	5	12	6	14	8
10	10	8	10	7	14	8
11	15	8	16	7	11	9
12	14	5	14	7	13	7
13	15	8	11	7	9	7
14	13	6	14	9	15	7
15	12	6	14	3	14	8
16	17	6	13	6	12	7
17	12	5	13	6	12	6
18	11	8	14	5	11	8
19	16	8	13	7	13	8
20	14	6	10	6	10	7

TABLE 4: Shows Mean and SD of pre therapy values of ECAS domain for children with autism spectrum disorder

	SPEAKING	LISTENING	INABILITY	DIFFICULTY	ANXIETY
MEAN	8.35	8.45	4.25	9.1	8.65
SD	1.49648711	1.791059669	2.40339672	1.16528741	1.308876577

FIGURE 2: This graph represents mean value of pre-test ECAS domain for children with autism spectrum disorder**TABLE 5. Shows Mean and SD of post therapy values of ECAS domain for children with autism spectrum disorder**

	SPEAKING	LISTENING	INABILITY	DIFFICULTY	ANXIETY
MEAN	3.1	3.25	8.55	3.15	3.7
SD	0.9679066042	1.06992376	0.99868334	0.98808693	1.21828179

FIGURE 3. This bar graph represents Mean value for post therapy of ECAS domain for children with autism spectrum disorder.

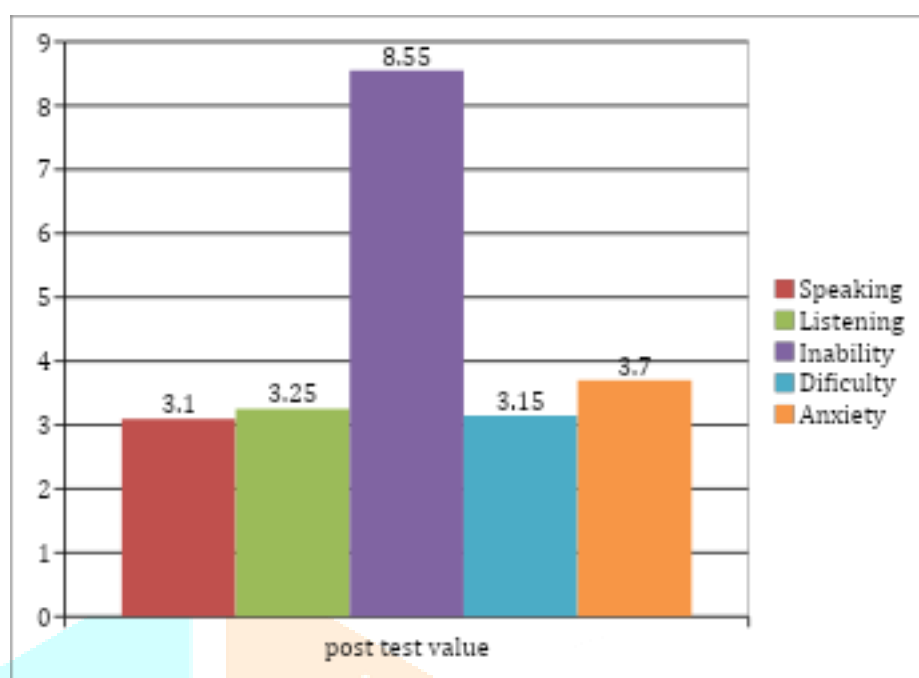


TABLE 6. Shows T test and p value of pre and post therapy values of ECAS domain for children with autism spectrum disorder

	SPEAKING	LISTENING	INABILITY	DIFFICULTY	ANXIETY
T test	9.61334E-16	1.53611E-13	7.37037E-09	1.04448E-19	6.59744E-15
P value	<0.005	<0.005	<0.005	<0.005	<0.005

TABLE 7. Shows Mean and SD of pretherapy values of ECAS subscale for children with autism spectrum disorder.

	Informant	Friends& family	Unfamiliar people
Mean	13.7	12.75	12.4
SD	2.341839	1.681947	2.18608

FIGURE 4: This bar graph represents Mean value for pre therapy of ECAS subscale for children with autism spectrum disorder.

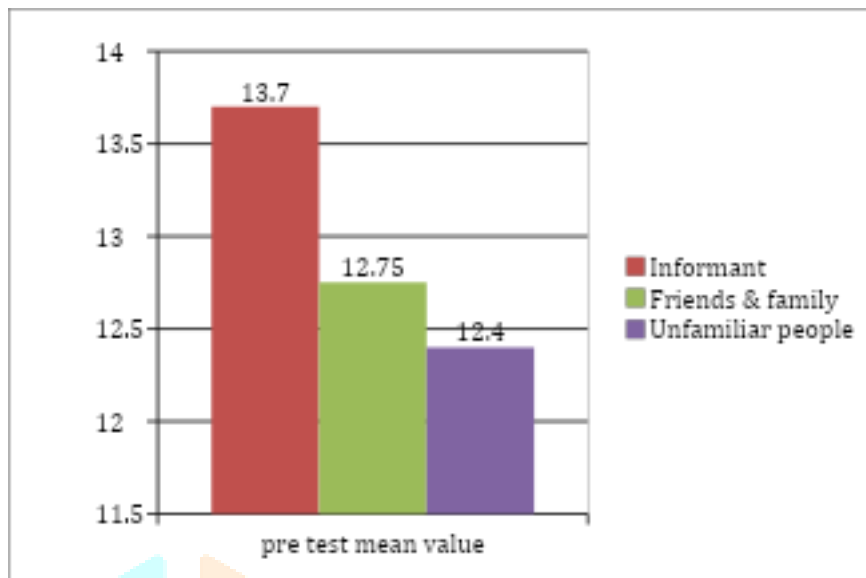


TABLE 8. shows Mean and SD of post therapy values of ECAS subscale for children with autism spectrum disorder.

	INFORMANT	FRIENDS & FAMILY	UNFAMILIAR PEOPLE
MEAN	6.85	6.7	7.85
SD	1.22581874	1.26074331	1.42441124

FIGURE 5: This bar graph represents Mean value for post therapy of ECAS subscale for children with autism spectrum disorder.

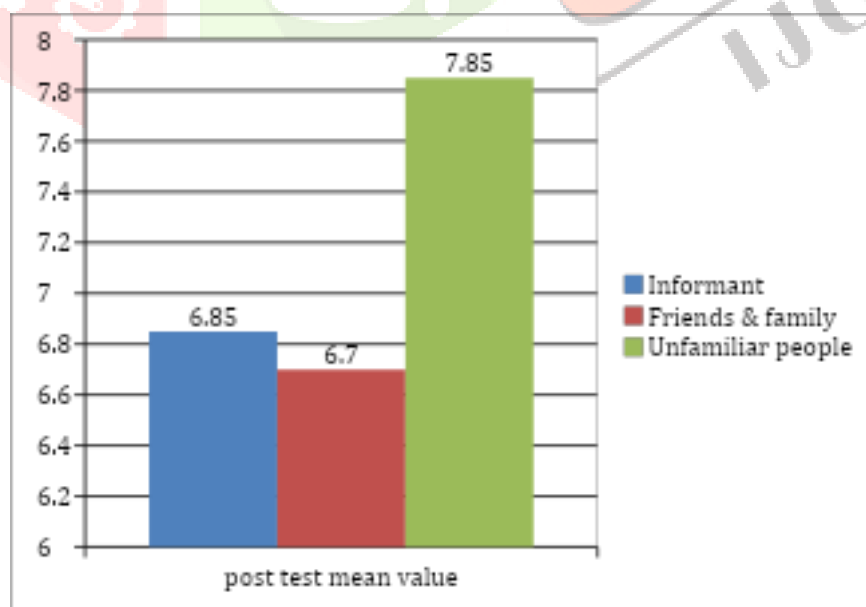


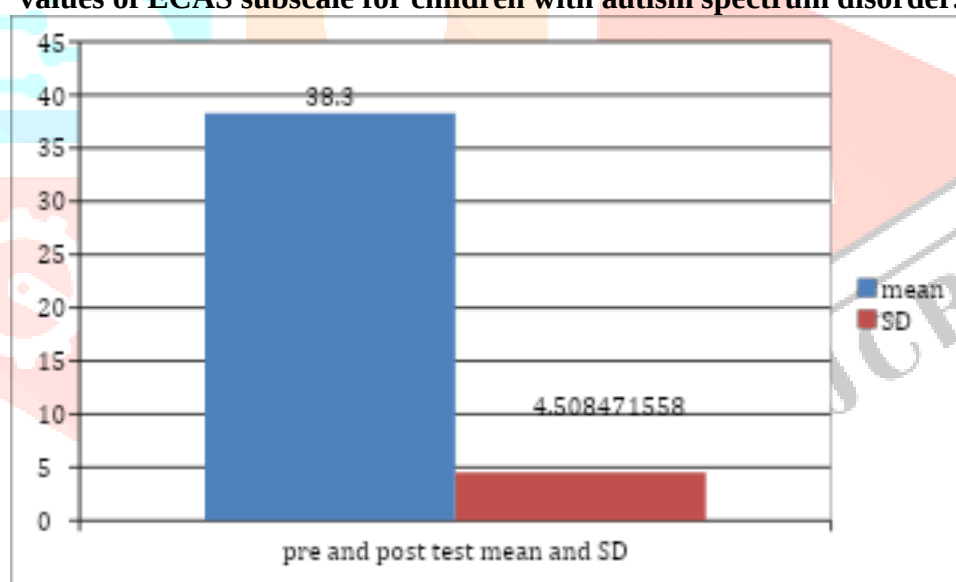
TABLE 9. shows T value and p value of pre and post therapy values of ECAS subscale for children with autism spectrum disorder.

	INFORMANT	FRIENDS&FAMILY	UNFAMILIAR PEOPLE
T TEST	4.85214E-14	1.98329E-15	2.09872E-09
P VALUE	<0.005	<0.005	<0.005

TABLE 10. shows Mean and SD, t value and value of pre and post therapy values of ECAS subscale for children with autism spectrum disorder.

	Mean	SD	T Values	P values
Pre	38.3	22	3.14516E-14	p<0.005
Post	4.508472	4.255028		

FIGURE 6: This bar graph represents Mean and SD, t value and value of pre and post therapy values of ECAS subscale for children with autism spectrum disorder.



RESULT

The study was conducted to improve eye contact in children with autism spectrum disorder. The pre-test and post test scores have been calculated and performed paired 't' tests for the collected data. The bar graph represents the mean value of pre and post. Paired 't' test was used to compare the pre-test and post - test values of participants with eye contact avoidance according to the score in 'EYE CONTACT AVOIDANCE SCALE' This showed that there was a significant improvement in post score compared to pre score resulting in improvement in eye contact (P value<0.005).

6. DISCUSSION & CONCLUSION

6.1 Discussion:

The purpose of this study was to enhance eye contact for children with ASD. Totally, 20 children have participated in this study which included 16 male children and 4 female children. Proper permission was obtained from the research supervisor and Director of Sumathy occupational therapy center (Cuddalore). So, all the children were assessed with eye contact avoidance scale, the outcome measure to assess the children's eye contact.

The study was started on April 15 in which the initial assessment was done on the same day. The intervention was carried out for 3 days per week for 12 weeks. During this therapy program, we had several difficulties such as, few children have not co-operated and showed aggressive behaviour, and were emotionally disturbed. Therefore, based on the exclusion criteria, the children with violent and aggressive behaviour, children with visual disability were excluded. Final assessment was taken after the intervention for 12 weeks. Based on play therapy intervention, animal puppet activity was administered on the children with Autism Spectrum Disorder. Puppet activity enhances eye contact, social skill, communication skills, and promotes facial expressions, this study is found useful for children with Autism Spectrum Disorder.

6.2 Conclusion:

From this study, it is concluded that using puppets as a therapeutic tool, has significantly enhanced eye contact in children with autism spectrum disorder. This method combines the appeal of play with the therapeutic goals of improving social skills and communication skills, offering a creative and effective approach to supporting children in their developmental journey.

7. LIMITATIONS AND RECOMMENDATIONS

LIMITATIONS

- ✓ This study was conducted on a limited sample size.
- ✓ This study was conducted in a limited duration.
- ✓ This study was only included Autism Spectrum Disorder children

RECOMMENDATIONS

- ✓ Study can be done on a larger sample size.
- ✓ Study can be done for a longer duration.
- ✓ puppet activity can study attention deficit hyperactive disorder, intellectual disability conditions.
- ✓ Other puppets activity like hand puppet, storytelling, educational puppet activity, puppet role playing also applicable for Autism Spectrum Disorder children.

ACKNOWLEDGMENT

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