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# Effect of Group Therapy through Relationship based Interactive Intervention on Social Participation in Children with Autism Spectrum Disorder

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**Abstract:** ***Aim: To find out effect of group therapy through Relationship Based Interactive Intervention (RBII)on Social Participation (SP) in children with Autism Spectrum Disorder (ASD). Methods: The study included 40 children with ASD in the age group between 3- 5 years. 20 number of children in each control and experimental group. Furthermore, the experimental group were sub-divided into 4 groups consisting of 5 numbers of participants in each group. SP subscale of Sensory Processing Measure (SPM-Home) was used to find out Social Participation skill in ASD children. The results were then subjected to statistical analysis. Results: The statistical results of this study, reveals that both the group have shown significant improvement in SP sub-scale of SPM-Home score. However, the subjects in the experimental group have shown evidently better improvement as compare to the compare group. Conclusion: The study concluded that Group Therapy through RBII would be an effective practice rather than individualistic RBII for children with ASD for enhancing Social Participation.***

**Keywords:** Group Therapy, Social Participation, Autism Spectrum Disorder, Sensory Processing Measure, Relationship Based Interactive Intervention

## 1. Introduction

Autism Spectrum Disorder (ASD) is defined as persistent deficits in (a) social communication and social interaction across multiple context, (b) restricted, repetitive patterns of behavior, interest or activity, (c) symptoms must be present in early developmental period, (d) symptoms together limit and impair social, occupational or other important areas of functioning (DSM-V, APA-2003). (Anurupa &Anju, 2021)

Children meeting criteria for ASD, the true male to female ratio is not 4:1; as if often assumed; rather it is closed to 3:1. There appears to be a diagnostic gender bias, meaning that girls who meet criteria for ASD are at disproportionate risk of not receiving a clinical diagnosis (Loomes R, Hull L, Mandy WPL. et.al., 2017)

Individuals with autism spectrum disorder (ASD) experience lifelong barriers to full participation in social, play and leisure activities and contexts. Many of these barriers can be attributed to core difficulties in social communication and restricted and repetitive behaviors, including sensory features (Tanner, K., Hand, B. N., O'Toole, G., &Lane., et.al., 2015)

Participation in social, play and leisure pursuits is clearly within the domain of occupational therapy (American Occupational Therapy Association [AOTA], 2014) & is a specific issue for people with ASD. (Tanner, K., Hand, B. N., O'Toole, G., &Lane., et.al., 2015)

Group-based social skill training is an appealing intervention approach for use with children with ASD because it provides the opportunity to practice newly learned skills in a relatively naturalistic format that may promote interaction with other children (Susan. Kathleen. Lawrence. et.al., 2006).

Strong evidence supports the use of group-based social skills training programs in both clinic-based and contextual settings to improve social skills in people with ASD. Group-based social skills training programs are those in which a therapist leads a group of people with ASD through a curriculum or training program to improve social skills. (Tanner, K., Hand, B. N., O'Toole, G., & Lane., et.al., 2015)

Group social skills training is a logical step for social intervention. It explicitly teaches social skills in a group setting (i.e., with peers), and has been established as an effective way to teach these skills to children who are socially at risk due to factors such as social anxiety, socially odd behaviors, victimization by peers, or bullying behaviors (Meilsa, E.Danielle C., K. Janey., Rebecca et.al., 2010).

## 2. Literature Survey

Anurupa. Anju.et.al.,2021 had done a study **"STUDY TO FIND OUT THE CORRELATION BETWEEN PRAXIS PATTERNS AND SOCIAL PARTICIPATION AMONG CHILDREN WITH AUTISM SPECTRUM DISORDER"** 100 ASD children between age 5 to 8 years participated inthis correlational study. They collected the data using Sensory Profile, Social Participation subscale of Sensory Processing Measure, Praxis subscales of Sensory Integration Praxis Test. They found positive correlation confirming to the existing scientific view with ASD.

Tanner, K., Hand, B. N., O'Toole, G., &Lane., et.al., 2015 had done a study to find out "**Effectiveness of interventions to improve social participation, play, leisure, and restricted and repetitive behaviors in people with autism spectrum disorder": A Systematic Review**, their objective was to evaluate the current evidence for interventions within the occupational therapy scope of practice. They included 66 articles (48 Level I, 6 Level II, and 12 Level III) from a 2006 to 2013 with ASD participants and found strong evidence that social skills groups, the Picture Exchange Communication System, joint attention interventions, and parent-mediated strategies can improve social participation. Their findings for the interventions were less conclusive to improve play and leisure performance and to decrease restricted and repetitive behaviors, but several other strategies showed promising supporting evidence. Occupational therapists should be guided by evidence when considering interventions to improve social participation, play, leisure, and restricted and repetitive behaviors in people with ASD.

Elen McConachie, leanor McLaughlin et.al., 2013 had done a study on **" Group Therapy for anxiety in children with autism spectrum disorder"** performed a pilot randomised controlled trial to investigate the acceptability and feasibility of group therapy for anxiety in children with autism spectrum disorder. 32 children ages 9-13 years were randomised into two groups. Intervention was given for seven (two hourly) weekly sessions were given. Their result concluded that the children in the group therapy were more likely to report reduction in anxiety symptom.

Meilsa, E.Danielle C., et al.2010 had done a study to find out **"THE EFFICACY OF A SOCIAL SKILLS GROUP INTERVENTION FOR IMPROVING SOCIAL BEHAVIOR IN CHILDREN WITH HIGH FUNCTIONING AUTISM SPECTRUM DIRORDER"**. two groups were randomly assigned treatment (n=27), control (n=28), under the age range of 8 to 12 years. Pre and post data collection were done testing the efficacy of (SSGRIN-HFA). They found (SSGRIN-HFA) as effective interventional tool in teaching social skills for ASD.

Jane Case-Smith, Marian Arbesmanet.al., 2008, had done a study on**, "Evidenced-Based Review of Interventions for Autism Used in or of Relevance to Occupational Therapy"**accumulated research literature in context of the interventions in occupational therapy for ASD. This systematic review paper was directed towards a large spectrum of characteristic found in ASD and the different interventional approaches undertaken by occupational therapists. They found out six interventional strategies which are sensory integration and sensory based intervention, Relationship based interactive intervention, developmental skill-based programs,social cognitive skill training, parent-directed or parent mediated approaches and intensive behavioral intervention.

## 3. Problem Definition

There are evidence which suggest Relationship Based, Interactive Intervention focus on improving social-emotional growth in children with ASD. (Hwang & Huges,2000).There are studies which investigated the effects of Relationship Based Interactive Intervention. These studies included parents, peers and therapist in interactive play-based activities and examined social competence and social engagement outcomes.Effect of these intervention were positive. However, the programme was set individually.Therefore, in this study attempt will be made to find out the effect of group therapy through Relationship Based Interactive Intervention on ASD children to increase social participation.

## 4. Methodology

**a) Inclusion Criteria:**

- Children diagnosed with mild Autism Spectrum Disorder.
- Children with Autism Spectrum Disorder without apraxia.
- Children should be between 3 to 5 years of age group

**b) Exclusion Criteria:**

- Children undergoing medication (sedatives)
- Attention Deficit Hyperactive Disorder children
- Mentally retarded child
- Auditory and visual impairments
- Other associated orthopaedics and neurologic condition

**Type of study design:** A cross-sectional experimental design was adopted for this study.

**Sampling Methods:** The sample selected for this study was done using convenient sampling

**Asessment Tools:** SENSORY PROCESSING MEASURE-The SPM is a questionnaire completed by parents or teachers that provides standard scores based on a normative sample of 1051 typically developing children ages 5 – 12 years (Parham & Ecker, 2007). SPM scores provide information about the child's sensory reactive, praxis and social participation. The total sensory scale score is a composite measure of the visual, hearing (auditory processing), touch, body awareness (proprioception )and balance and motion (vestibular processing) scale scores, which primarily measure sensory reactivity within specific sensory systems. The total sensory score also includes items measuring reactivity to taste and smell. The ideas and planning score is a measure of praxis. The social participation score is a measure of child participation. A higher SPM score indicates greater difficulty. Content and construct validity has been established with strong test – retest reliability ($r > 0.93$). Scores from the social participation subscale of SPM Home form were analyzed in the study.

**CARS (The Childhood Autism Rating Scale):** The CARS is a 15-item behavioral rating scale developed to identify autism as well as to quantitatively describe the severity of the disorder (Schopler et al., 1994). The items are as follows: I. Relating to People, II. Imitation; III. Emotional Response, IV. Body Use; V. Object Use; VI. Adaptation to Change; VII. Visual Response, VIII. Listening Response, IX.Taste, Smell, and Touch Response and Use, X. Fear or Nervousness, XI. Verbal Communication, XII. Nonverbal

Communication, XIII. Activity Level, XIV. Level and Consistency of Intellectual Response, and XV.General Impressions. Each item is scored from 1 (no pathology) to 4 (severe pathology) in 0.5 intervals. A total score of 15–29.5 is considered non-autistic; a score of 30–36.5 is considered mild to moderate autism; a score of 37–60 is considered moderate to severe autism (these are based on raw scores).

**Approaches: Relationship based Interactive Intervention Approach**

**Relationship- based interventions** (Hwang & Hughes,2000) that use adult imitation of the child's actions, implemented high levels of positive responsiveness, establish environments that support social interaction, and demonstrate positive effects on social engagement in children with Autism Spectrum Disorder.Structured play activities, such as block construction or games that include cueing, prompting, and reinforcement, are effective interventions to enhance turn-taking, sharing, communication, and social interaction in children with Autism Spectrum Disorder (Legoff,2004).Interventions emphasizing responsiveness, supportive relationships, and social-emotional developmentin young children can facilitate the child's social-emotional growth and promote development of pivotal behaviors essential for learning ( Greenspan& Wieder, 1997; Mahoney & Perales, 2005; Wieder & Greenspan, 2005).

**Package of social interactive strategies:** Naturalistic, Interactive Teaching Techniques.

**Statistical Analysis**

The present study included 40 subjects with Autism Spectrum Disorder between the age group 3-5 years. The data was collected from the parents by using, Social Participation sub-scale of Sensory Processing Measure. The score of Social Participation sub-scale of Sensory Processing Measure were taken for statistical analysis by using the software Statistical Package for Social Sciences (SPSS) version 20. Paired t test was used to find out the changes in the social participation score within the groups. Mann-Whitney U test was used to compare the changes that occurred in the Social Participation score, between the two groups. The null hypothesis was tested with level of significance at $p < 0.05$.

## 5. Results

**Table I:** Descriptive Data

| Group | No. of Subjects | Mean age | Gender | SD |
|---|---|---|---|---|
| Experimental | 20 | 3.79 | Male: 75.0% | 0.553 |
| | | | Female: 25.0% | |
| Control | 20 | 3.72 | Male: 65.0% | 0.576 |
| | | | Female: 35.0% | |

The descriptive statistics (as shown in TABLE- I) of experimental group and control group are numerically recorded and graphically represented Fig. 1.1 and 1.2. In experimental group there were 20 children's with ASD between age group of 3-5 years with the mean age of 3.79 years. In that population 75% were males and 25% were females. In control group there were 20 children's with ASD between age group of 3-5 years with the mean age of 3.72 years. In that population 65% were males and 35% were females.

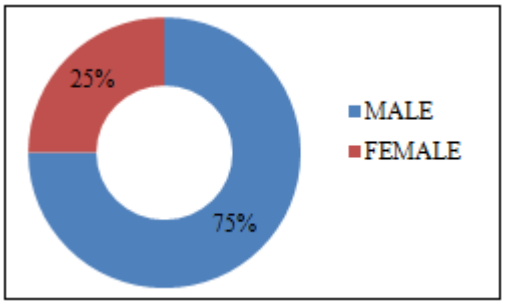


**Figure 1.1**

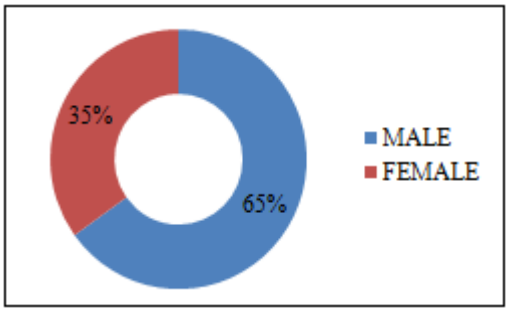


**Figure 1.2**

**Table II:** Shows the results of Paired 't' test within the group

| Group | Pre Mean SP Score | Post Mean SP Score | Mean Difference of SP Score | 't' value | 'p' value | Effect Size |
|---|---|---|---|---|---|---|
| Experimental | 77.9 | 61.0 | 16.9 | 22.2 | <.001 | 4.97 |
| Control | 77.7 | 72.2 | 5.50 | 12.2 | <.001 | 2.73 |

The within group analysis was done by using paired 't' test is (shown in TABLE- II) and graphically represented in Fig. 2.1 and Fig. 2.2. The above result show that 't' value is 22.2 and 'p' is <.001 in experimental group. In control group 't' value is 12.2 and 'p' is <.001, that reveals there is significant improvement of Social Participation in experimental group as well as in control group. The effect size of experimental

group is 4.97 and control group is 2.73, which represents that there is better improvement in experimental group than control group.

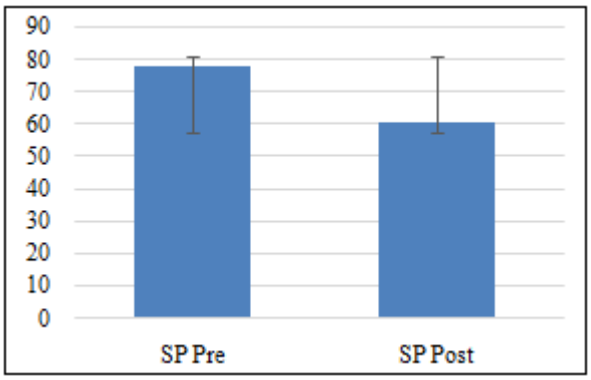


**Figure 2.1**

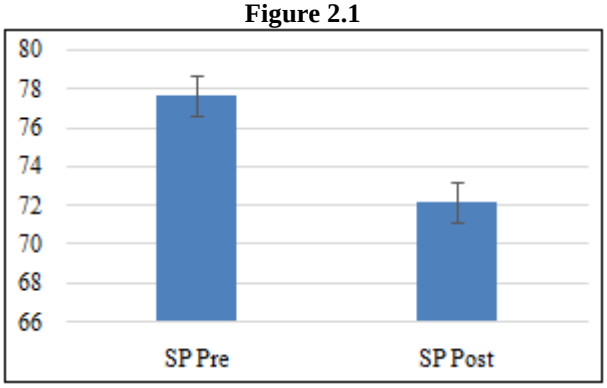


**Figure 2.2**

**Table III:** shows result of Mann-Whitney U test, between the groups

| Group | Post Mean SP Score | Mean Difference | 'U' value | 'p' value |
|---|---|---|---|---|
| Experimental | 61.0 | (-)11.0 | 1.50 | <.001 |
| Control | 72.2 | | | |

The between group analysis is shown in TABLE- III and represented in Fig. 3.0 which uses "Mann-Whitney U" test. There is significant difference in the improvement of Social Participation between the groups. Higher score in Sensory Processing Measure indicates more dysfunction in Social Participation.

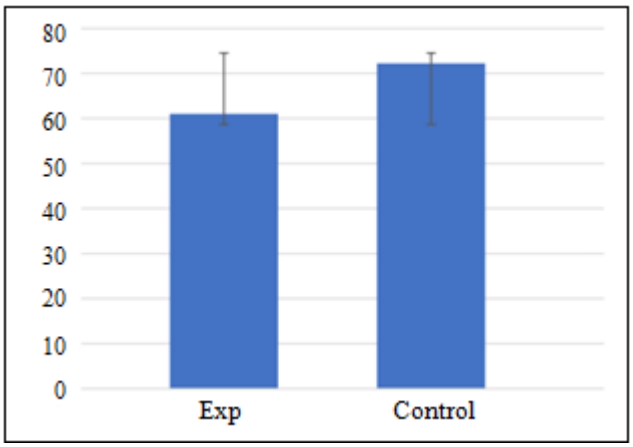


**Figure 3**

**Hypotehsis Testing:** From TABLE II, the effect size of experimental group is 4.97 and control group is 2.73, and represents that there is better improvement in experimental group, then in control group. The level of significance was set at 0.05, the 'p' value calculated was found to be <0.001 in social participation score of subscale of sensory processing measure scale. Hence, the null hypothesis was rejected. Alternatively the proposed hypothesis is accepted. Thereby, suggesting a greater improvement in social participation skills among children with ASD using group therapy through Relationship Based Interactive Intervention.

## 6. Discussion

The present study was conducted to find out the effect of Group Therapy through Relationship Based Interactive Intervention on Social Participation in children with Autism Spectrum Disorder (ASD). The study was conducted in Department of Occupational Therapy, SVNIRTAR. The present study included 40 ASD children between the ages of 3–5 year. The data was collected by using Social Participation subscales of Sensory Processing Measure. The primary aim of this study was to find out the effect of group therapy through relationship based interactive intervention on social participation in children with ASD. The Social Participation subscale of Sensory Processing Measure (Home) was to measure social participation skills in children with ASD. Parents were asked to recall children's social behavior over recent weeks. The Social Participation subscale consists of 8 items. Rating on each item summed to generate a single total score; higher scores indicate more dysfunction in social participation. The result within group paired 't' test shows improvement in social participation skills as measured by Social Participation subscales of Sensory Processing Measure (Home). The improvements were significant in experimental group as well as in control group in Social Participation skill. The result shows the positive influence of both individualized and in group Relationship Based Interactive Intervention. We found that there is a significant improvement in the social participation skill score in experimental group in comparison to the control group. Thus, the Effect of Group Therapy based on Relationship Based Interactive Intervention in enhancing Social Participation skill becomes evident. In our study both the experimental and control group had received similar Relationship Based Interactive Intervention, which may have predispose significant improvement in the said groups, which is largely supported by (Case-Smith &Arbesman, 2008) who stated that Relationship Based Interactive Intervention focuses on improving social-emotional growth in children with ASD. We had given LEGO© Therapy to both the groups, which may be the reason behind significant improvement in both the groups, which is substantiated with the study of (Daniel B. Legoff, 2004), who stated that LEGO© play appears to be effective medium for social skills intervention in children with ASD. The experimental group to whom Group Therapy through Relationship Based Interactive Intervention were given, had shown significant improvement in social participation skill which may be substantially supported by (Kelly, Tanner., et.al., 2015), who stated that, the use of group-based social skills training programs in both clinic-based and contextual settings by using techniques, such as imitation training, developmental, naturalistic behavioral and parent-mediated appeared to be effective. Thus, in this study activity was structured on the

basis of Group Therapy through Relationship Based Interactive Intervention which is according to this article supported by (Tanner.K., Hand, B.N., O'Toole, et.al., 2015) who stated that Occupational Therapy practitioners should consider using group-based social skills training programs to address limitations in social skills in children with ASD.

## 7. Conclusion

The statistical results of this study, reveals that both the group have shown significant improvement in Social Participation sub-scale of Sensory Processing Measure Home) score. However, the subjects in the experimental group have shown evidently better improvement as compare to the control group. Therefore, the experimental hypothesis is accepted and null hypothesis is rejected. Since, improvement in the Social Participation skill are significant and consistent in the experimental group, it is well understood that group therapy through Relationship Based Interactive Intervention is effective in enhancing Social Participation in children with Autism Spectrum Disorder. Therefore, it can be concluded that Group Therapy through Relationship Based Interactive Intervention would be an effective practice rather than individualistic Relationship Based Interactive Intervention for children with Autism Spectrum Disorder for enhancing Social Participation.

## 8. Limitations of Study

Although the research has reached its aim, there were some unavoidable limitations. They are as follows: A small sample size of 40 makes it difficult for us to generalize the results for the larger population. Irregularities of the subjects in the group due to personal reasons. The participating age group (3-5 years) is very short span which in turns limit the scope of this study. The subjective scale used in the present study although validated is not completely reliable.

## 9. Future Scope

We recommend a thorough and elaborated research on this topic. There should be an increased number of participants in the future studies on this topic. Future study should try to include objective measurement tool for ASD children. Future study should compare and correlate the findings of this study with different age group of adult population. The number of participants in each group can be increased or decreased and its effect can be seen in future studies.

## References

[1] Anurupa, Anju, et al. A Study to Findout the Correlation between Praxis Patterns and Social Participation among Children with Autism Spectrum Disorder *International Journal of Trend in Scientific Research and Development*. 2021; 5(2): 1143-1158.
[2] Loomes R, Hull L, Mandy WPL. et al. What Is the Male-to-Female Ratio in Autism Spectrum Disorder? A Systematic Review and Meta-Analysis. *J Am Acad Child Adolesc Psychiatry*. 2017; 56(6):466-474.
[3] Roley, S. S. Mailloux, Z. Parham, L. D., Schaaf. R. C. Lane, C. J. Cermak S., et al. Sensory integration and praxis patterns in children with autism. *American Journal of Occupational Therapy*. 2015; 690-699.
[4] Lisa Ruble. Heather Willis. et al. Social Skills Group Therapy for Autism Spectrum Disorders**.** *Sage Publications, Clinical Case Studies.* 2008; 7(4).
[5] Susan. Kathleen. Lawrence. et al. SOCIAL SKILLS DEVELOPMENT IN CHILDREN WITH ASD: A Review of Intervention Research *J. Autism DevDisord.* 2008; 37:1858–1868.
[6] Tanner, K. Hand, B. N. O'Toole, G. & Lane. et al., Effectiveness of interventions to improve social participation, play, leisure, and restricted and repetitive behaviors in people with autism spectrum disorder.A systematic review. *American Journal of Occupational Therapy.* 2015; 69 (5):1-11.
[7] Kathleen. Marie Epp. et al. Outcome-Based Evaluation of a Social Skills Program Using Art Therapy and Group Therapy for Children on the Autism SpectrumChildren &School. © *National Association of Social Worker*. 2008; 30(I):27-36.
[8] WILLARD & SPACKMAN'S, Occupational Therapy, 11th Edition: 437-439.
[9] Catherine A. Trombley Latham. Mary Vining Radomski. Occupational Therapy for Physical Dysfunction, 7th Edition: 57-59.
[10] Meilsa, E.Danielle C. JaneySturtzMcMillen. Rebecca Matthewset. et al. THE EFFICACY OF A SOCIAL SKILLS GROUP INTERVENTION FOR IMPROVING SOCIAL BEHAVIOR IN CHILDREN WITH HIGH FUNCTIONING AUTISM SPECTRUM DIRORDER. *Journal Of Autism Developmental Disorder*. 2010; 7(3): 21-35.
[11] Vijay. Sagar KJ. et al. Research on autism spectrum disorders in India. *AP J Psychol Med*. 2011; 12 (1):69–72.
[12] Ganaie S.A. Bashir. A. et al. Global Autism: Autism, Autism Etiology, Perceptions, Epistemology, Prevalence and Action. *Int J ClinTherDiagn.* 2014; 2(2):39-47.
[13] American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-IV-TR, (5thed.). Washington DC: American Psychiatric Association. 2013; 50-57.
[14] Anne Cronin Mosey. Psychosocial Components of Occupational Therapy, 247-259.
[15] Sheila Christopher. CresentaShakila. et al. Social Skills in Children With Autism. *Indian Journal Of Applied Research.* 2015; (1):139-141.
[16] Rosello B. Berenguer C. Baixauli I. Garcia R and Miranda A. et al. Theory of Mind Profiles in Children With Autism Spectrum Disorder: Adaptive/Social Skills and Pragmatic Competence. *Front. Psychol.* 2020; 11:55-59.
[17] Kylliainen. A. Akkinen. S. Anen. S. Rantanen, K. Ebeling. et al. Social competence group intervention (SOCO) for children with Autism Spectrum Disorder: A pilot study. *Scandinavian Journal of Psychology.* 2020.
[18] Case-Smith, J., &Arbesman, M. Evidence-based review of interventions for autism used in or of relevance to occupational therapy. *American Journal of Occupational Therapy.* 2008; 62: 416–429

[19] Vinod K Paul. ArvindBagga. GHAI Essential Pediatrics, 8th Edition:63-69.
[20] Adam T. Eggebrecht. Jed T. Elison. Eric Feczko et al. Joint Attention and Brain Functional Connectivity in Infants nd Toddlers. Cerebral Cortex. 2017; 27:1709–1720.

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