TPM Vol. 32, No. S3, 2025
ISSN: 1972-6325
https://www.tpmap.org/

Open Access

EFFECT OF TRADITIONAL SENSORY INTEGRATION AND FREE PLAY (COMMUNITY PARK) ON CHILDREN WITH AUTISM SPECTRUM DISORDER - A COMPARATIVE STUDY

MR. PRADEEP.R[1], MS.K. ALLI[2], DEEPA SUNDARESWARAN[3]
[1]UNDERGRADUATE STUDENT, MEENAKSHI COLLEGE OF OCCUPATIONAL THERAPY, MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH (MAHER), CHENNAI, INDIA.
[2]ASSOCIATE PROFESSOR, MEENAKSHI COLLEGE OF OCCUPATIONAL THERAPY, MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH (MAHER), CHENNAI, INDIA.
[3]PRINCIPAL, MEENAKSHI COLLEGE OF OCCUPATIONAL THERAPY, MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH (MAHER), CHENNAI, INDIA.

ABSTRACT

AIM: To compare the effect of traditional sensory integration and sensory integration with free play among children in Autism Spectrum Disorder (ASD).

OBJECTIVES: To determine demographic data with outcome measures, to evaluate pre-test and post-test scores, and to identify potential differences between sensory integration alone and free play with sensory integration among children with ASD.

METHODOLOGY: This quasi-experimental study included children diagnosed with ASD who were randomly divided into an experimental group and a control group. Sessions were conducted three times a week for two months. Pre-test and post-test assessments were carried out using the Short Sensory Profile (SSP). The control group underwent sensory integration therapy, while the experimental group received sensory integration therapy along with free play in a community park.

RESULT: Significant differences were observed in tactile sensitivity, under-responsiveness/seeking sensation, auditory filtering, and low energy/weakness between groups. No significant differences were observed in taste/smell sensitivity or visual/auditory sensitivity. These findings suggest that combining sensory integration with community-based free play may enhance outcomes.

CONCLUSION: Incorporating structured play environments such as community parks into therapy programs may offer additional benefits for children with ASD, particularly in sensory and social domains.

KEYWORDS: Sensory integration, Autism Spectrum Disorder, free play, occupational therapy.

INTRODUCTION

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by challenges in social communication, interaction, and restricted or repetitive behaviors. According to the World Health Organization, approximately 1 in 100 children are diagnosed with ASD globally, making it a major concern for pediatric health and development.

One of the core issues associated with ASD is sensory processing difficulty. These difficulties are well-documented in research by Dr. A. Jean Ayres, who developed the Sensory Integration (SI) framework in the 1960s. Occupational therapists have since adopted SI-based interventions to address sensory impairments, improve adaptive functioning, and facilitate developmental milestones.

While clinic-based sensory integration interventions have shown benefits, emerging research suggests that natural and play-based environments may further enhance outcomes. Parks and playgrounds provide opportunities for children to engage with varied sensory stimuli such as swings, slides, textured surfaces, and social interactions. These experiences promote motor, cognitive, and socio-emotional development. Importantly, free play in community spaces also fosters socialization, peer engagement, and creativity skills often delayed in children with ASD.

This study compares the effects of traditional sensory integration therapy with a combined approach that incorporates free play in community parks, aiming to provide insights into more effective and inclusive interventions for children with ASD.

METHODOLOGY

This study followed a quasi-experimental design. A total of 30 children between the ages of 4 and 10 years, diagnosed with ASD, were recruited using non-probability convenience sampling. The participants were randomly assigned into two groups: the control group, which received traditional sensory integration therapy, and the experimental group, which received sensory integration combined with free play activities in a community park.

Parents were briefed about the study objectives, and informed consent was obtained. Ethical clearance was secured prior to commencement. Screening was conducted using the Indian Scale for Assessment of Autism (ISAA), followed by pre-test assessment with the Short Sensory Profile (SSP). Intervention sessions were scheduled three times a week for a period of two months (8 weeks). The control group engaged in structured sensory integration therapy, while the experimental group engaged in the same therapy supplemented with outdoor play activities such as swinging, sliding, balancing, and cooperative play. Post-test assessments were carried out using SSP, and results were analyzed using parametric t-tests to determine statistical significance.

Inclusion criteria: children aged 4–10 years with a confirmed diagnosis of ASD. Exclusion criteria: families where both parents were employed full-time and unable to facilitate regular participation in park-based sessions.

RESULTS

The findings demonstrated significant improvements in the experimental group compared to the control group. Specifically, tactile sensitivity, under-responsiveness/seeking sensation, auditory filtering, and low energy/weakness showed marked improvements. However, no significant differences were observed in taste/smell sensitivity and visual/auditory sensitivity. These findings align with prior studies suggesting that outdoor and play-based environments enrich sensory experiences.

The experimental group benefited from the multi-sensory, socially engaging, and physically stimulating environment of the park, which appeared to augment the therapeutic impact of traditional sensory integration.

Pre and Post Test Statistics for Experimental and Control Groups

Experimental Group

Descriptive Statistics (Pre vs. Post)

Measure	Pre-Test Mean ± SD	Post-Test Mean ± SD
Tactile Sensitivity	25.73 ± 1.44	32.80 ± 0.41
Taste/Smell Sensitivity	13.47 ± 1.85	13.47 ± 1.81
Movement Sensitivity	11.20 ± 1.47	12.93 ± 0.96
Under-Responsive/Seeks Sensation	24.07 ± 2.58	29.93 ± 1.16
Auditory Filtering	20.67 ± 1.50	25.53 ± 1.25
Low Energy/Weakness	23.13 ± 1.51	26.07 ± 1.28
Visual/Auditory Sensitivity	17.60 ± 1.81	20.00 ± 1.85

Paired t-Test Results

Measure	t-value	Sig. (p)	Interpretation
Tactile Sensitivity	-19.732	0.000	Significant improvement
Taste/Smell Sensitivity	0.000	1.000	No difference
Movement Sensitivity	-6.104	0.000	Significant improvement

Under-Responsive/Seeks Sensation	-9.077	0.000	Significant improvement
Auditory Filtering	-9.125	0.000	Significant improvement
Low Energy/Weakness	-9.769	0.000	Significant improvement
Visual/Auditory Sensitivity	-4.294	0.001	Significant improvement

Control Group

Descriptive Statistics (Pre vs. Post)

Measure	Pre-Test Mean ± SD	Post-Test Mean ± SD
Tactile Sensitivity	28.40 ± 1.24	30.80 ± 0.94
Taste/Smell Sensitivity	13.93 ± 1.03	14.07 ± 1.10
Movement Sensitivity	11.87 ± 1.36	12.07 ± 1.34
Under-Responsive/Seeks Sensation	25.20 ± 1.70	25.27 ± 2.02
Auditory Filtering	21.67 ± 1.80	22.93 ± 2.40
Low Energy/Weakness	23.87 ± 2.00	23.60 ± 2.61
Visual/Auditory Sensitivity	19.00 ± 2.17	20.53 ± 2.45

Paired t-Test Results

Measure	t-value	Sig. (p)	Interpretation
Tactile Sensitivity	-11.225	0.000	Significant improvement
Taste/Smell Sensitivity	-1.468	0.164	No difference
Movement Sensitivity	-1.146	0.271	No difference
Under-Responsive/Seeks Sensation	-0.211	0.836	No difference
Auditory Filtering	-2.572	0.022	Significant improvement
Low Energy/Weakness	0.590	0.565	No difference
Visual/Auditory Sensitivity	-3.617	0.003	Significant improvement

CONCLUSION

This research highlights the potential of integrating free play with sensory integration therapy for children with ASD. The significant improvements observed in tactile and auditory domains emphasize the role of naturalistic and play-based environments in therapy. Although certain sensory areas such as taste/smell sensitivity did not show significant change, the overall findings support the integration of structured outdoor play into clinical programs.

Future research should consider larger sample sizes, longer intervention durations, and multi-site studies to confirm the generalizability of these results. Policymakers and educators may also benefit from incorporating community-based play into inclusive education and therapy frameworks.

LIMITATIONS AND RECOMMENDATIONS

LIMITATIONS:

- Short duration of the study (2 months).
- Small sample size (30 children).
- Limited generalizability due to single-site intervention.

RECOMMENDATIONS:

- Future studies should explore longer intervention periods.

- Larger, more diverse samples across multiple centers are needed.
- Integration of play-based therapy into school and community settings should be encouraged.
- Additional outcome measures (e.g., social skills, academic readiness) could provide a more holistic evaluation.

DECLARATION : The authors have no conflict of interest.

REFERENCES

1. Moore, K. M., Cividini-Motta, C., Clark, K. M., & Ahearn, W. H. (2015). Sensory Integration as a treatment for automatically maintained stereotypy. Behavioral Interventions, 30(2), 95-111.
2. Moore, K. M., & Henry, A. D. (2002). Treatment of adult psychiatric patients using the Wilbarger protocol. Occupational Therapy in Mental Health, 18(1), 43-63.
3. Stephenson, J., & Carter, M. (2009). The use of weighted vests with children with autism spectrum disorders and other disabilities. Journal of Autism and Developmental Disorders, 39, 105-114.
4. Soechting, E., OT, T. J. G., FAOTA, H. M. K., Erwin, B., Henry, D. A., Colleen Basaraba, O. T. R., & Roley, S. S. (2017). Sensory integration. Journal of Occupational Therapy, 61, 216-227.
5. Dunbar, S. B., Carr-Hertel, J., Lieberman, H. A., Perez, B., & Ricks, K. (2012). A pilot study comparison of sensory integration treatment and integrated preschool activities for children with autism. Internet Journal of Allied Health Sciences and Practice, 10(3), 6.
6. Lynch, H. (2013). Advancing play participation for all: The challenge of addressing play diversity and inclusion in community parks and playgrounds.