

“Parental Perception of Quality-of-Life in Children with Autism Undergoing Snoezelen Therapy”

Priyadarsini.A^{1*}, Prof. Dr. Nidhi Sharma², Dr. Bhuvaneshwari.G³

^{1*}Assistant Professor, Department of Child Health Nursing, Saveetha College of Nursing, SIMATS, Thandalam, Chennai, Tamil Nadu, India.

Email ID : priyadharsini.scon@saveetha.com

² Professor, Saveetha Medical College and Hospital, SIMATS, Chennai, India

³ Professor, Department of Community Health Nursing, Saveetha College of Nursing, SIMATS, Thandalam, Chennai, Tamil Nadu, India

Corresponding Author*

Priyadarsini. A

Email Id: priyadharsini.scon@saveetha.com

Orchid ID: 0000-0001-8417-1875

Received: 23th Oct, 2025; Revised: 22th Dec, 2025; Accepted: 18th Jan, 2026; Available Online: 15th Feb, 2026

ABSTRACT

Children with autism spectrum disorder (ASD) frequently struggle with sensory processing, which has an effect on their behaviour, emotional health, and social engagement, all of which have an effect on their quality of life (QoL). The goal of the multisensory intervention known as Snoezelen therapy is to establish a relaxing atmosphere that encourages participation and regulation. The purpose of this study is to assess how parents perceive their autistic children's quality of life has improved as a result of regular Snoezelen therapy sessions.

Methods: Fifty parents of children with ASD children participated in a quasi-experimental study. Over the course of four weeks, children received eight sessions of Snoezelen therapy. The Quality of Life in Autism Questionnaire (QoLA), Part A (parental QoL) and Part B (parental perception of autism-related difficulties), were used to measure parental perceptions both before and after the intervention.

Findings: After the intervention, Part A scores improved statistically significantly (mean rise of 12.4 points), while Part B perceived obstacles decreased. Children's mental state, sleep patterns and family relationships all showed noticeable changes according to parents.

Conclusion: In conclusion, Snoezelen therapy improved emotional stability and decreased behavioural distress, which in turn improved parents' perceptions of their child's quality of life. Snoezelen therapy should be included in comprehensive autism intervention programs, according to the research. Children with ASD had much lower quality of life, especially in social and school functioning. This highlights the need for specific interventions that focus on core symptoms, as well as environmental and family factors, to improve outcomes.

Keywords: Autism Spectrum Disorder, Quality of Life, Snoezelen therapy, parental perception

How to cite this article: Priyadarsini A, Sharma N, Bhuvaneshwari G., “Parental Perception of Quality-of-Life in Children with Autism Undergoing Snoezelen Therapy”. *Int J Drug Deliv Technol.* 2026; 16(2): 169-174; DOI: 10.25258/ijddt.16.2.20

Source of support: Nil.

Conflict of interest: None

INTRODUCTION

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition that involves challenges in social communication, interaction, and limited behaviors or interests (1). In India, around 3% of the population has ASD. In the U.S., the CDC reported a prevalence of one in 44 children in 2018(4). The prevalence of autism in the United States has risen from 1 in 125 children in 2010 to 1 in 54 in 2020, and it is the same all over the world. (2). The growing prevalence of ASD raises important concerns for those impacted and their families (3). The causes of the disorder involve various genetic and environmental factors (3), resulting in different symptoms that greatly affect quality of life (QoL). Many children with ASD also face sensory integration issues,

which can hinder their daily activities and relationships (5). Over the last ten years, research has increasingly focused on understanding and assessing the QoL of autistic individuals (6).

According to the **Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)**, autism was formerly categorized into four subtypes: Childhood Disintegrative Disorder, Autistic Disorder, Pervasive Developmental Disorder Not Otherwise Specified, and Asperger syndrome (7). Furthermore, children with Autism Spectrum Disorder (ASD) frequently face dietary difficulties such as food selectivity and sensory sensitivities, which may contribute to inadequate nutrient intake and potential nutritional deficiencies (8). In contrast, children with severe symptoms usually encounter major challenges in communication,

*Author for Correspondence: priyadharsini.scon@saveetha.com

social interaction, and behaviour. These issues can increase their reliance on caregivers and limit their opportunities for social engagement (9). Research shows that more severe autism symptoms are linked to lower QoL, especially in social functioning and adaptive behaviors (9). This connection underscores the need for customized interventions that address the specific needs of children based on the severity of their symptoms (9).

Quality of life (QoL) is a complex idea that includes different aspects of well-being, such as physical, psychological, emotional, and social health. For children with autism, we mainly evaluate QoL through reports from parents. These children often have difficulty expressing their own experiences. We use assessment tools like the Quality of Life in Autism Questionnaire (QoLA). This tool allows caregivers to assess their own well-being in Part A and to share their views on their child's autism-related challenges in Part B. These evaluations provide a complete picture of how autism affects both the child's daily life and family relationships (10).

Snoezelen therapy helps induce relaxation. This can lead to positive outcomes like reduced problematic behaviors and improved adaptive behaviors (11,13). The therapy serves as a useful tool for managing emotional and behavioural responses by improving stress regulation and lowering arousal levels. Research from Cameron et al., (14) Haig and Hallett, (15) and Ismail et al. (16) shows that Snoezelen environments have a calming effect on the sympathetic nerve-adrenal medulla (SAM) system and the hypothalamus-anterior pituitary-adrenal cortex (HPA) system. Additionally, studies by Thomas et al. (18) and Speranza et al. (17) emphasize the important role of auditory stimulation, especially music, in promoting emotional health and reducing stress during Snoezelen therapy. Listening to music in these settings can trigger the release of neurotransmitters like dopamine and endorphins, enhancing the therapy by fostering feelings of pleasure and well-being. The calming effects of music are especially helpful for those facing stress or anxiety. Recent research highlights that current quality of life measures for children with autism spectrum disorder (ASD) have significant limitations.

The study examines how parents view the effectiveness and relevance of therapy for children with autism spectrum disorder (ASD). It notes that there is not enough research in India on this topic, showing that many caregivers and healthcare professionals do not recognize the therapeutic benefits of different interventions. As a result, the study seeks to address this gap by assessing how Snoezelen therapy improves the quality of life for children with autism.

MATERIALS AND METHODS

The study evaluated the effectiveness of Snoezelen therapy on quality of life among children with autism using a quantitative interventional approach and a quasi-experimental pre-test–post-test control group design. The Institutional Ethics Committee (IEC), Government Medical College and Hospital, Tiruvallur, granted ethical approval (Ethics Committee Registration No: IEC/4/2022). The

study was carried out in accordance with the Declaration of Helsinki's (2013 revision) ethical guidelines, guaranteeing participant autonomy, confidentiality, and informed consent.

The study protocol was prospectively filed with the Clinical Trials Registry of India (CTRI) with registration number REF/2025/10/115655 and registered with the Institutional Research Protocol Registration No: GMPH/AI-TEL/2025/07.

PARTICIPANT

The target population for this study included parents of young children diagnosed with Autism Spectrum Disorder (ASD). To qualify, participants had to meet these criteria: (1) they must have a child with a confirmed ASD diagnosis, (2) the child must have received treatment or intervention services in the last 12 months, and (3) the parent must have lived with the child during that time.

Instruments and Data Collection

Data were collected through semi structured questionnaires completed by mothers of children with autism. The questionnaires had three sections: (1) the participants' baseline and demographic information, including maternal age, marital status, job status, nationality, education level, number of children, family income, and region of residence; clinical variables and a Quality of Life in Autism questionnaire (QOLA) score. To support the clinical use of the tool and provide specificity for ASD, the QoLA was designed with two subscales, Parts A and B, which are described below. Part A includes some items that are reverse scored. Parents rate each item based on their experiences over the last four weeks. Part A (QoL subscale) consists of 28 items intended to measure parents' overall view of their quality of life. Items include “I feel happy and content,” “I am satisfied with my social life,” and “I am satisfied with my close relationships.” Each item uses a five-point Likert scale ranging from one (not very much) to five (very much). Scores on Part A can range from 28 to 140, with higher scores indicating a greater perceived quality of life. Items in Part A reflect each of Schallock et al.'s eight domains, focusing particularly on emotional well-being, social inclusion, and interpersonal relationships

Part B (Impact of ASD symptoms subscale) assesses parents' views on how challenging their child's autism-related difficulties are for them. It includes a list of 20 challenges that children with ASD may face, such as “socialising with people,” “needing to stick to a routine,” and “destructive behaviours including anger and aggression.” Parents rate how problematic these challenges are on a five-point Likert scale from five (not much of a problem for me) to one (very much of a problem for me). Therefore, scores on Part B can range from 20 to 100, with higher scores indicating fewer problems for parents with regard to their child's ASD-related behaviours. (19). The possible range for the total QoLA score is 48 to 240. A total score can be calculated for overall comparisons; however, Parts A and B are meant to be scored separately and represent distinct subscales within the tool.

RESULTS

A total of 100 children with autism took part in the study. They were divided into two groups: an experimental group (n = 50) that received Snoezelen therapy and a control group (n = 50) that received routine care. Parents filled out the Quality of Life in Autism Questionnaire (QoLA) & Impact of ASD Symptoms before and after the 8-week intervention.

Children with Autism Spectrum Disorder (ASD) exhibit notable differences in several demographic and clinical characteristics compared to typically developing (TD) children (Table 1). The age distribution between the two groups is comparable; however, a higher proportion of children with ASD are male (approximately 67%) compared to TD children (64%). Socioeconomic status and parental education levels are similar across groups.

A marked distinction emerges in comorbidities and educational needs: about two-thirds of children with ASD (33 out of 50) present with one or more comorbid conditions, and 30 (60%) require special education, whereas most TD children (43 out of 50, 86%) attend mainstream schools. In addition, children with ASD demonstrate lower proficiency in daily living, social, and

communication skills, with 37 (74%) requiring assistance for daily living activities and 20 (40%) being nonverbal.

Parental Perception of Quality of Life (QoLA Part A):

Parents of children in the experimental group saw a significant improvement in overall quality of life scores after Snoezelen therapy (Mean pre = 65.4 ± 8.2; Mean post = 74.1 ± 7.5; p < 0.001). In contrast, the control group showed no significant change (Mean pre = 66.1 ± 7.9; Mean post = 66.8 ± 8.1; p = 0.48).

Impact of ASD Symptoms (QoLA Part B):

Parents in the experimental group also reported a notable reduction in the impact of ASD symptoms on daily life (Mean pre = 82.7 ± 9.0; Mean post = 70.3 ± 8.5; p < 0.001). In the control group, no significant change was recorded (Mean pre = 83.5 ± 8.7; Mean post = 82.9 ± 8.3; p = 0.62). (see table1)

Post-intervention QoLA scores were significantly higher in the experimental group compared to the control group for both Part A (quality of life) and Part B (impact of symptoms) subscales (p < 0.001). This indicates that parents perceived better improvements in children receiving Snoezelen therapy.

Table 1: Comparison of QoLA Scores Between Experimental and Control Groups

Group	Measure	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Significance (p-value)
Experimental (n=50)	QoLA Part A (Quality of Life)	65.4	8.2	74.1	7.5	< 0.001
	QoLA Part B (Impact of ASD Symptoms)	82.7	9.0	70.3	8.5	< 0.001
Control (n=50)	QoLA Part A (Quality of Life)	66.1	7.9	66.8	8.1	0.47
	QoLA Part B (Impact of ASD Symptoms)	83.5	8.7	82.9	8.3	0.62

Children receiving Snoezelen therapy showed significant improvement in quality of life and reduction in ASD symptom impact, whereas the control group has no impact in quality of life

Table 2: Descriptive statistics and internal consistency coefficients

Variable	Mean	Range	SD	Cronbach's α	Statistical Significance
QoLA Part A: ASD group	87.0	46 – 138	21.5	0.94	Likely significant*
QoLA Part A: Control group	110.0	65 – 138	17.6	0.96	NS
QoLA Part B: ASD group	68.5	30 – 99	17.6	0.92	Likely significant*
QoLA Part B: Control group	94.3	78 – 100	6.1	0.86	NS

***-significant, NS- Non significant**

The table 2 shows the descriptive statistics and reliability scores for the Quality of Life in Autism (QoLA) questionnaire from two groups: children with ASD and a control group. The mean scores for both Part A (overall quality of life) and Part B (autism-related impact) are lower in the ASD group when compared to the control group. This indicates that children with ASD have a lower quality of life than their typically developing peers.

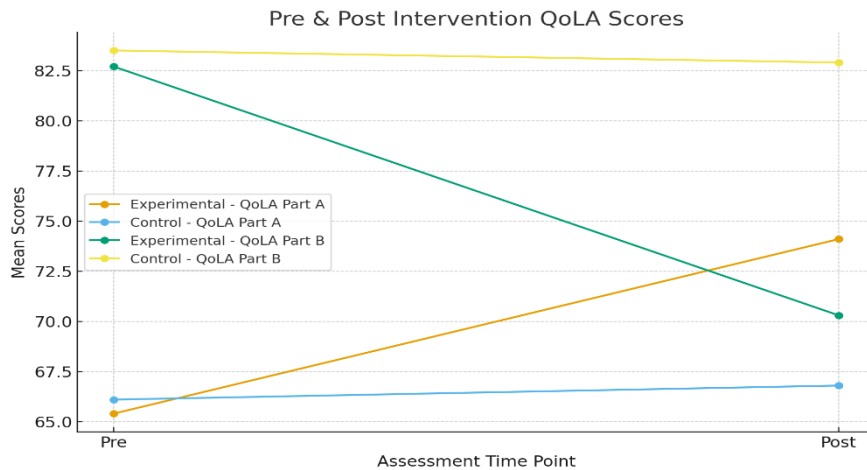


Figure 1: Pre- and Post-Test Mean Scores of QoLA Part-A and Part-B in Experimental and Control Groups

Figure 1 represents The line graph shows a clear upward trend in QoLA Part-A scores and a downward trend in QoLA Part-B scores in the experimental group after Snoezelen therapy, indicating improved quality of life and reduced impact of autism symptoms. In contrast, the control group lines remain nearly flat, demonstrating minimal change and highlighting the effectiveness of the intervention. The ranges and standard deviations reveal variability within each group. The ASD group displays a wider range and greater variability, which reflects the different quality of life experiences among these children. The Cronbach’s alpha values for all subscales are above 0.85, showing strong internal consistency and confirming that the QoLA questionnaire is a reliable tool for measuring quality of life in both groups. Overall, the data highlights significant differences in quality of life between children with ASD and controls. This points to the necessity for specialized support and interventions to tackle the unique challenges faced by children with ASD.

DISCUSSION

The goal of our study was to explore how parents of children with ASD assess their child's quality of life (QOL). It allowed parents to rate their child's QOL in all areas, using four levels from poor to excellent. Parents reported that their children's satisfaction was highest in self-determination, followed by emotional well-being, and then interpersonal relationships. Although the differences between these areas were not statistically significant, the results show that there are more challenges in interpersonal relationships than in self-determination and emotional well-being. This supports previous findings that children with ASD often struggle socially and have few friendships (21). The study's results suggest that professionals and family members can improve overall QOL by setting effective program goals during early life stages that focus on enhancing relationship skills. Teaching children with ASD

to build interpersonal relationships at a young age is crucial, especially since difficulties in forming these relationships often become more pronounced as they enter adolescence and adulthood, where social situations become more complex (22).

This study highlights the urgent need for targeted interventions to address the significantly lower QoL observed in children with ASD (25) compared to their typically developing peers. Future research should include community-based recruitment, more comprehensive assessments, and broader population diversity to enhance representativeness and understanding. Behavioral interventions, especially **Behavior Analysis** and **parent-implemented routines**, have been shown to be effective in improving mealtime behaviors, decreasing food refusal among children with **Autism Spectrum Disorder (ASD)**. (26)

CONCLUSION:

In conclusion, this study shows that children with ASD have a notably lower quality of life. Snoezelen Therapy can be a good therapeutic approach. Additionally, using Snoezelen Therapy as part of an integrated treatment may help children develop and learn to better handle their sensitivities and reactions to certain sensory stimuli. These initial results could lead to more in-depth treatment options for managing sensory sensitivities in autism. This may provide significant insights to improve children's quality of life. However, it is important to highlight that further studies with larger sample sizes are necessary to evaluate the effectiveness of treatment methods for addressing sensory sensitivities. Also, we need to consider how these behavioral changes might generalize over time and whether they lead to lasting improvements in quality of life.

Source of funding

We did not receive any funds from any organization for this work.

REFERENCE

1. Joon P, Kumar A, Parle M. What is autism? *Pharmacol Rep.* 2021 Oct;73(5):1255-1264. doi: 10.1007/s43440-021-00244-0. Epub 2021 Mar 10. PMID: 33694100.
2. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*; American Psychiatric Association Publishing: Washington, DC, USA, 2022.
3. Salari N., Rasoulpoor S., Shohaimi S., Jafarpour S., Abdoli N., Khaledi-Paveh B., Mohammadi M. The global prevalence of autism spectrum disorder: A comprehensive systematic review and meta-analysis. *Ital. J. Pediatr.* 2022;48:112.
4. Popow C, Ohmann S, Plener P. Practitioner's review: Medication for children and adolescents with autism spectrum disorder (ASD) and comorbid conditions. *Neuropsychiatrie.* (2021) 35:113–34. doi: 10.1007/s40211-021-00395-9
5. Baj J, Fliieger W, Fliieger M, Forma A, Sitarz E, Skórzyńska-Dziduszko K, et al. Autism spectrum disorder: Trace elements imbalances and the pathogenesis and severity of autistic symptoms. *Neurosci Biobehav Rev.* (2021) 129:117–32. doi: 10.1016/j.neubiorev.2021.07.029
6. Kanchana, A., & Khilar, R. (2024). A Survey on Genetic Disease– Autism Spectrum Disorder Prediction and Classification in Machine Learning. *International Journal of Nutrition, Pharmacology, Neurological Diseases,* 14(4), 437-453.
7. Ashinie, C., & Ramesh, R. (2025). Dietary challenges and nutritional awareness among parents of children with autism spectrum disorders: A survey-based study. *Journal of Neonatal Surgery,* 14(4s).
8. Samadi H, Samadi SA. Understanding different aspects of caregiving for individuals with autism spectrum disorders (ASDs): a narrative review of the literature. *Brain Sci.* (2020) 10:557. doi: 10.3390/brainsci10080557
9. Hong J, Bishop-Fitzpatrick L, Smith LE, Greenberg JS, Mailick MR. Factors Associated with Subjective Quality of Life of Adults with Autism Spectrum Disorder: Self-Report Versus Maternal Reports. *J Autism Dev Disord.* 2016 Apr;46(4):1368-78. doi: 10.1007/s10803-015-2678-0. PMID: 26707626; PMCID: PMC4788526.
10. Chan SW, Thompson DR, Chau JP, Tam WW, Chiu IW, Lo SH. The effect of multisensory therapy on behaviour of adult clients with developmental disabilities—a systematic review. *Int J Nurs Stud.* 2010;47(1):108-22. Available from: <https://doi.org/10.1016/j.nurstu.2009.08.004>
11. Lancioni G.E., Cuvo A.J., O'Reilly M.F. Snoezelen: An overview of research with people with developmental disabilities and dementia. *Disabil. Rehabil.* 2002;24:175–184. doi: 10.1080/09638280110074911.
12. Chan S., Fung M.Y., Tong C.W., Thompson D. The clinical effectiveness of a multisensory therapy on clients with developmental disability. *Res. Dev. Disabil.* 2005;26:131–142. doi: 10.1016/j.ridd.2004.02.002.
13. Cameron A, Burns P, Garner A, Lau S, Dixon R, Pascoe C, Szafraniec M. Making sense of multi-sensory environments: a scoping review. *Int J Disabil Dev Educ.* 2020;67(6):630-656. Available from: <https://eric.ed.gov/?id=EJ1271879>
14. Haig S, Hallett N. Use of sensory rooms in adult psychiatric inpatient settings: a systematic review and narrative synthesis. *Int J Ment Health Nurs.* 2023;32(1):54-75. Available from: <https://doi.org/10.1111/inm.13065>
15. Ismail AF, Tengku Azmi TMA, Malek WMSWA, Mallineni SK. The effect of multisensory-adapted dental environment on children's behavior toward dental treatment: A systematic review. *J Indian Soc Pedod Prev Dent.* 2021;39(1):2-8. Available from: https://doi.org/10.4103/jisppd.jisppd_36_21 Hayes, S. A., & Watson, S. L. (2013). The impact of parenting stress: A meta-analysis of studies comparing the experience of parenting stress in parents of children with and without autism spectrum disorder. *Journal of Autism and Developmental Disorders,* 43(3), 629-642.
16. Young H, Oreve MJ, Speranza M. Clinical characteristics and problems diagnosing autism spectrum disorder in girls. *Arch Pediatr.* 2018 Aug;25(6):399-403. doi: 10.1016/j.arcped.2018.06.008. Epub 2018 Aug 22. PMID: 30143373.
17. Rolland T, Cliquet F, Anney RJL, Moreau C, Traut N, Mathieu A, Huguet G, Duan J, Warriier V, Portalier S, Dry L, Leblond CS, Douard E, Amsellem F, Malesys S, Maruani A, Toro R, Børglum AD, Grove J, Baron-Cohen S, Packer A, Chung WK, Jacquemont S, Delorme R, Bourgeron T. Phenotypic effects of genetic variants associated with autism. *Nat Med.* 2023 Jul;29(7):1671-1680. doi: 10.1038/s41591-023-02408-2. Epub 2023 Jun 26. PMID: 37365347; PMCID: PMC10353945.
18. Kuhn, J., & Carter, A. S. (2006). Maternal self-efficacy and associated parenting cognitions among mothers of children with autism, Down syndrome, and typical development. *Journal of Autism and Developmental Disorders,* 36(1), 1-12.
19. Estes, A., et al. (2013). Parenting stress and psychological functioning among mothers of preschool children with autism and developmental delay. *Autism,* 17(4), 377-387.
20. Fava L, Strauss K. Multi-sensory rooms: comparing effects of the Snoezelen and the Stimulus Preference environment on the behavior of adults with profound mental retardation. *Res Dev Disabil.* 2010 Jan-Feb;31(1):160-71.
21. Howlin P, Goode S, Hutton J, Rutter M. Adult outcome for children with autism. *J Child Psychol Psychiatry.* 2014 Feb;45(2):212-29.
22. Leekam S. R., Nieto C., Libby S. J., Wing L., Gould J. (2007). Describing the sensory abnormalities of children and adults with autism. *Journal of Autism and Developmental Disorders,* 37, 894–910.
23. Alenazi, D.S.; Hammad, S.M.; Mohamed, A.E. Effect of autism on parental quality of life in Arar city, Saudi Arabia. *J. Fam. Community Med.* 2020, 27, 15–22

24. Al-Jabri, B.A.; Abualhamael, R.M.; Al Hazza, M.T.; Bahabri, S.A.; Alamri, Y.M.; Alghamdi, B.M. Quality of life among caregivers of children with autism in KSA: A cross-sectional study. *Neurosciences* 2022, 27, 150–155.
25. Indu, P. C., Gowrishankar, A., Riaz, K. M., Kunjavara, J., Nair, L. I., Jayalatha, K. T., Jose, T., Vijayaraghavan, R., Rahmath, K., & Joice, S. V. (2025). Exploring the effectiveness of behavioral interventions on mealtime behavior of children with autism spectrum disorder: A systematic review. *Asian Journal of Pharmaceutical and Clinical Research*, 18(3), 20–24. <https://doi.org/10.22159/ajpcr.2025v18i3.53576>