INDIVIDUALIZED SNOEZELEN ROOM INTERVENTION FOR ADULTS WITH AUTISTIC SPECTRUM DISORDER: PRELIMINARY EVIDENCE ON BEHAVIOURAL OUTCOMES AND QUALITY OF LIFE

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ABSTRACT

Promoting quality of life (QoL) is a key objective of interventions for individuals with Autism Spectrum Disorder (ASD). Snoezelen Rooms (SR) have been increasingly adopted to support sensory regulation, well-being, and adaptive functioning. This ongoing study examines the effects of a SR intervention on behavioural functioning and QoL in five adults with ASD. Assessments were conducted before and after the intervention using the Aberrant Behavior Checklist (ABC) and the Personal Outcomes Scale (POS). Preliminary findings indicate improvements in behavioural regulation, particularly reductions in hyperactivity, stereotyped behaviours, and inappropriate language. QoL outcomes were more heterogeneous, with most participants reporting modestly improved levels of well-being across selected domains. These preliminary results suggest that SR-based interventions may represent a promising person-centred approach for supporting adults with ASD.

KEYWORDS

Autism spectrum diisorder, snoezelen room, quality of life, behavioural regulation, multisensory environment.

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1. Introduction

Historically, research and clinical interventions for Autism Spectrum Disorder (ASD) have primarily focused on childhood and adolescence. However, autism is a lifelong neurodevelopmental condition, and the needs of autistic individuals extend well into adulthood (Howlin, 2021). Over the past two decades, services for autistic adults have undergone a substantial paradigm shift, moving away from a predominantly medical model—primarily oriented toward symptom reduction and the suppression of behaviours considered maladaptive—towards a biopsychosocial perspective that emphasizes overall functioning and well-being.

Within this framework, the promotion of Quality of Life (QoL) has emerged as a central outcome of disability services and supports (Schalock et al., 2010). Accordingly, intervention effectiveness can no longer be evaluated solely in terms of reductions in challenging behaviours, but should also consider improvements in emotional, social, physical, and material well-being, alongside the promotion of self-determination and meaningful participation in community life. This shift reflects a broader movement toward person-centred and rights-based approaches in disability research and practice.

1.1 Quality of Life in Adults with Autism Spectrum Disorder

The conceptualization and assessment of QoL in individuals with intellectual and developmental disabilities have been extensively informed by the theoretical model proposed by Schalock and Verdugo (2006). In this framework, QoL is defined as a multidimensional construct resulting from the interaction between personal characteristics and environmental conditions, and encompassing eight core domains: emotional well-being, interpersonal relationships, material well-being, personal development, physical well-being, self-determination, social inclusion, and rights. Consequently, the assessment of QoL in autistic adults requires measurement approaches capable of capturing both objective indicators of living conditions and individuals' subjective evaluations of their own life circumstances.

In autistic adults requiring Level 1 support, according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013), QoL can generally be assessed through self-report methodologies. In contrast, for individuals requiring higher levels of support (Levels 2 and 3), particularly in the presence of co-occurring intellectual disability or significant communication impairments, proxy-report measures

completed by caregivers or professionals are often required (Lombardi et al., 2016). This methodological distinction is particularly relevant in ASD research, where heterogeneity in cognitive and communicative functioning poses significant challenges for outcome measurement.

1.2 Sensory Processing Differences in ASD

Sensory processing differences represent one of the core features of ASD and are explicitly included among DSM-5 diagnostic criteria. It is estimated that between 70% and 90% of autistic individuals experience hyper- or hyporeactivity to sensory input across multiple modalities, including visual, auditory, tactile, olfactory, gustatory, vestibular, and proprioceptive systems (Tomchek & Dunn, 2007). Sensory hypersensitivity may render everyday environments—such as supermarkets, workplaces, or public transportation—overwhelming and distressing, contributing to heightened stress responses, anxiety, social withdrawal, and behavioural crises. Conversely, sensory hyposensitivity may be associated with sensory-seeking behaviours, including repetitive motor actions or prolonged visual and tactile stimulation, which may function as strategies for self-regulation of arousal.

Given this profile, interventions that do not consider individual sensory characteristics risk overlooking fundamental regulatory mechanisms underlying behaviour (Bogdashina, 2016). In this context, increasing attention has been directed toward Multisensory Environments (MSEs), particularly Snoezelen Rooms (SRs), as structured settings designed to address sensory modulation needs while promoting relaxation and emotional regulation.

1.3 Snoezelen Room and Multisensory Intervention

The term Snoezelen, coined in the Netherlands in the 1970s from the combination of the verbs snuffelen (“to explore”) and doezelen (“to doze” or “to relax”), refers to a purposefully designed environment that provides controlled, individualized, and non-threatening multisensory stimulation. A Snoezelen Room typically includes a range of sensory elements—such as bubble tubes, fibre-optic lighting, projected visual effects, calming auditory stimuli, aromatherapy, and tactile materials—that can be adjusted according

to the individual's sensory preferences, needs, and real-time responses (Hulsegge & Verheul, 2005).

Unlike directive or goal-oriented therapeutic approaches, the Snoezelen model is inherently person-centred and non-directive. Individuals are encouraged to explore the environment at their own pace and according to their preferences, while the therapist assumes the role of facilitator, dynamically adapting sensory input in response to the person's sensory profile and moment-to-moment behavioural or communicative cues. This individualized approach is intended to create a predictable and emotionally safe context that supports relaxation, self-regulation, engagement, and positive sensory experiences (Hulsegge & Verheul, 2005; Ashburner et al., 2013; Robertson & Baron-Cohen, 2017; Unwin et al., 2022; Leonardi et al., 2025).

1.4 Evidence and Research Gaps

Despite the increasing implementation of Snoezelen Rooms in clinical and educational settings, empirical evidence supporting their effectiveness in autistic populations remains limited. The systematic review by Leonardi et al. (2025) identified only a small number of eligible studies (n = 10), characterized by small sample sizes, heterogeneous intervention protocols, and methodological limitations, which collectively preclude firm conclusions regarding efficacy. Existing evidence suggests potential benefits of SR interventions in reducing stereotyped and challenging behaviours, improving sensory modulation, sustaining attention, and enhancing engagement, particularly when sensory stimulation is individualized and participants are granted active control over the environment (Fava & Strauss, 2010; Basadonne et al., 2021; Unwin et al., 2022; De Domenico et al., 2024; Leonardi et al., 2025).

However, most available studies have primarily focused on short-term behavioural outcomes, while broader person-centred indicators—such as perceived Quality of Life, emotional well-being, and participation in everyday contexts—remain underexplored, especially in autistic adults. This represents a significant gap in the literature, given the increasing emphasis on QoL as a primary outcome in contemporary disability research (Novakovic et al., 2019; Leonardi et al., 2025).

1.5 Study Aims

Against this background, the present paper reports preliminary findings from an ongoing intervention study examining the use of a Snoezelen Room with adults diagnosed with ASD. The study aims to explore potential changes in behavioural functioning and perceived Quality of Life following participation in a structured multisensory intervention, while also investigating the relationship between objectively observed behavioural changes and participants' subjective experiences of well-being. By adopting QoL as a primary outcome, the study contributes to addressing a relevant gap in the current literature and extends the evaluation of Snoezelen interventions beyond behavioural symptom reduction toward more comprehensive, person-centred indicators of well-being and participation.

2. Methodology

This study employed a pre–post intervention design (T0–T2), consistent with exploratory pilot research, to examine changes in behavioural functioning and Quality of Life (QoL) following a cycle of Snoezelen Room (SR) sessions. The design was chosen in consideration of the preliminary nature of the investigation, the limited sample size, and the primary aim of generating feasibility data and initial outcome trends.

Before the intervention, each participant underwent an individualized sensory assessment using standardized instruments (e.g., the *Adult Sensory Profile*) to identify patterns of sensory hyper- and hypo-reactivity. This assessment was complemented by clinical interviews with caregivers and professionals to obtain a functional description of sensory preferences and triggers in daily life contexts. The resulting sensory profiles were used to individualize the multisensory environment, ensuring that sensory stimuli were tailored to each participant's preferences and regulatory needs while minimizing the risk of sensory overload.

To support a comprehensive evaluation of the intervention, all SR sessions were video-recorded. This allowed for subsequent microanalytic coding of behavioural indicators, including frequency and duration of exploratory behaviours, affective facial expressions, body orientation toward or away from stimuli, and spontaneous interaction with the environment and therapist.

Video recordings were intended to support both qualitative behavioural analysis and potential future inter-rater reliability procedures.

In addition, each session was accompanied by structured observational records completed by the therapist immediately after the intervention. These records included standardized ratings of arousal level, engagement, relaxation, and distress, as well as narrative clinical notes regarding individual responses to specific sensory modalities (e.g., visual vs. tactile stimuli). Although these multi-layered data sources were collected systematically, they are not included in the present paper due to the ongoing nature of data processing and coding procedures. The current article therefore focuses exclusively on preliminary standardized behavioural outcome measures and Quality of Life collected at T0 and T2.

2.1 Participants

At the time of writing, five autistic adults had completed both the intervention and the baseline (T0) and post-intervention (T2) assessments. ASD diagnoses had previously been established by public healthcare services according to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association, 2013).

The preliminary sample comprised one participant with ASD requiring Level 2 support, co-occurring intellectual disability, and significant language impairment. This participant required substantial daily support and had a documented history of emotional dysregulation, hyperactivity, and challenging behaviours.

The remaining four participants were autistic adults requiring Level 1 support, without intellectual disability or significant language impairment. They demonstrated functional verbal communication but reported persistent difficulties related to social participation, chronic anxiety, and fatigue associated with the demands of sensory and social processing.

Written informed consent was obtained from all participants or, in the case of the participant requiring Level 2 support, from the legal guardian, in accordance with the ethical principles outlined in the Declaration of Helsinki.

2.2 Setting

The intervention was conducted in a certified Snoezelen Room located within a specialized neurodevelopmental service. The room was acoustically insulated from external noise and equipped with a range of multisensory devices designed to provide individualized sensory stimulation.

Visual stimulation included interactive bubble tubes with programmable colour changes, fibre-optic light strands, and slow-moving image projectors. Auditory stimulation was delivered through a surround-sound system playing calming music, nature sounds, or binaural rhythms selected according to participants' preferences. Tactile and proprioceptive stimulation was provided through a heated water mattress, beanbag seating, weighted blankets, and tactile wall panels with a variety of textures. Olfactory stimulation was available through aromatherapy diffusers using hypoallergenic essential oils (e.g., lavender for relaxation and citrus fragrances for gentle activation). Ambient lighting was maintained at a low, indirect level throughout each session.

2.3 Outcome Measures

Outcome measures were administered at baseline (T0) and immediately following completion of the intervention (T2).

Aberrant Behavior Checklist (ABC)

Behavioural outcomes for the participant requiring Level 2 support were assessed using the *Aberrant Behavior Checklist* (ABC; Aman et al., 1985), a widely used proxy-report instrument developed to assess behavioural problems in individuals with developmental disabilities. In the present study, the ABC was completed by a key educator who had known the participant for at least six months.

The ABC consists of 58 items organized into five subscales: Irritability, Lethargy/Social Withdrawal, Stereotypic Behaviour, Hyperactivity/Noncompliance, and Inappropriate Speech. Higher scores indicate greater behavioural severity. In this study, the scale was completed by a key professional with long-term knowledge of the participant's behavioural profile, ensuring ecological validity of ratings.

Personal Outcomes Scale (POS)

Quality of Life was assessed using the *Personal Outcomes Scale* (POS; van Loon et al., 2013), based on the multidimensional QoL model proposed by Schalock and Verdugo (2006). The POS evaluates eight domains including personal development, self-determination, interpersonal relationships, social inclusion, rights, emotional well-being, physical well-being, and material well-being.

Given differences in participants' support needs, different versions of the instrument were administered. The proxy-report version was used for the participant requiring Level 2 support and completed by professionals and family caregivers. The self-report version was administered to participants

requiring Level 1 support, allowing them to directly evaluate their own Quality of Life across the eight domains. Higher scores indicate better perceived Quality of Life.

2.4 Intervention Procedure

The intervention consisted of structured sessions conducted in the Snoezelen Room. Consistent with the principles of the Snoezelen approach, the primary objective was not skill training or behavioural rehabilitation but rather the provision of individualized multisensory experiences aimed at promoting relaxation, emotional regulation, and autonomous exploration (Leonardi et al., 2025).

To accommodate participants' different support needs, intervention dosage varied according to level of support. The participant requiring Level 2 support completed 20 sessions, whereas participants requiring Level 1 support each completed 10 sessions.

All sessions were conducted by trained healthcare professionals, including a psychologist and a psychiatric rehabilitation therapist, who had received formal certification in the Snoezelen approach according to ISNA-MSE standards. Throughout the intervention, therapists adhered to the core principles of person-centred practice by respecting participants' pace, avoiding directive interaction, supporting spontaneous exploration, and continuously adapting sensory stimulation according to participants' behavioural and verbal responses.

2.5 Data Analysis

Given the preliminary nature of the study and the very small sample size (N = 5), inferential statistical analyses were not conducted. Therefore, data were analysed descriptively by examining changes in raw scores between baseline (T0) and post-intervention (T2) for each individual participant.

3. Results

As this study is still ongoing, results should be considered preliminary and interpreted with caution. Overall, comparison between baseline (T0) and post-intervention (T2) assessments revealed heterogeneous response patterns across behavioural and Quality of Life (QoL) outcomes. While the participant requiring Level 2 support showed improvements in selected behavioural

domains, QoL outcomes across the sample were more variable, highlighting substantial inter-individual differences in response to the intervention.

3.1 Behavioural Outcomes

Behavioural outcomes were assessed in Participant 1 (ASD Level 2) using the *Aberrant Behavior Checklist* (ABC). As shown in Figure 1, scores decreased in three of the five ABC subscales from baseline (T0) to post-intervention (T2).

The most pronounced reduction was observed in the Hyperactivity/Noncompliance subscale, which decreased from 10 to 6. A further reduction was found for Inappropriate Speech (7 to 5). Stereotypic Behaviour, which was minimally present at baseline, was no longer observed at T2 (1 to 0).

By contrast, Irritability remained stable across the two measurement points (10 to 10), while Lethargy/Social Withdrawal showed only a marginal decrease (21 to 20), indicating relative stability in this domain over the study period.

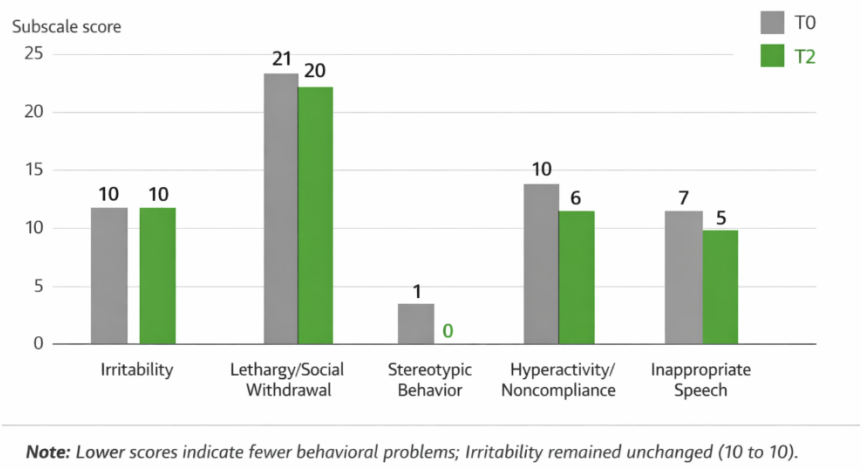


Figure 1: Aberrant Behavior Checklist (ABC) subscale scores at T0 and T2 (Participant 1; ASD Level 2)

Overall, behavioural data suggest that SR intervention effects may be more pronounced in externally observable regulatory behaviours (e.g., hyperactivity, stereotypy) than in affective or motivational domains.

3.2 Quality of Life Outcomes

Quality of Life outcomes, measured through the Personal Outcomes Scale (POS), showed more variable patterns across participants. For the Level 2 participant, proxy-reported data indicated overall stability across most domains, with a slight improvement in social inclusion, potentially reflecting increased engagement during structured sessions and improved perceived responsiveness to social-environmental stimuli.

For Participant 1 (ASD Level 2), the proxy-reported POS indicated overall stability across most domains between T0 and T2, including interpersonal relationships, physical well-being, and material well-being. The only observed change was a slight increase in social inclusion.

For the four participants with ASD Level 1, QoL was assessed via the POS self-report. As reported in Table 1, total QoL scores increased in three out of four participants, corresponding to a mean increase of 1.5 points within this subgroup. One participant (5) showed no change across measurement occasions.

Table 1: POS total scores, self-report (ASD Level 1 participants)

Participant	T0	T2	Δ
S2	39	40	+1
S3	42	43	+1
S4	39	43	+4
S5	44	44	0
Mean	41.0	42.5	+1.5

Domain-level patterns are summarized in Table 2. Physical well-being showed the largest mean increase within the subgroup (13.25 to 14.25). In contrast, emotional well-being exhibited only a minimal mean change (14.00 to 14.25), alongside marked within-group heterogeneity, with improvements observed in two participants, stability in one, and a decrease in one.

Material well-being remained largely stable (13.75 to 14.00), which is consistent with the expectation that this domain is less sensitive to change over a short intervention period.

Table 2: Mean changes in POS domains, self-report (N = 4)

POS domain	T0	T2	Mean Δ
Total QoL	41.00	42.50	+1.50
Physical well-being	13.25	14.25	+1.00
Emotional well-being	14.00	14.25	+0.25
Material well-being	13.75	14.00	+0.25

Figure 2 summarizes the pre- to post-intervention changes in mean Personal Outcomes Scale (POS) self-reported scores for the ASD Level 1 subgroup, providing an at-a-glance comparison of total QoL and domain-specific trajectories from T0 to T2.

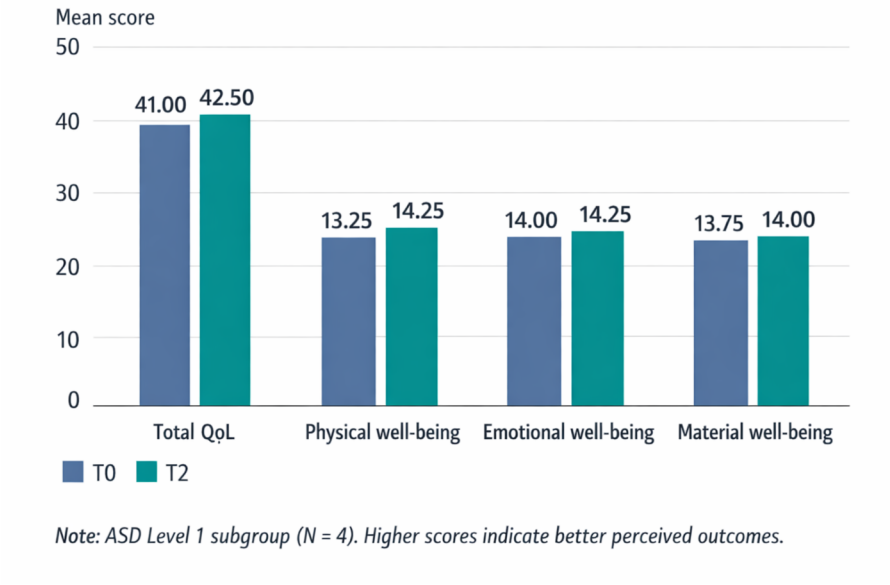


Figure 2: Mean Personal Outcomes Scale (POS) scores at T0 and T2 (self-report)

Overall, these preliminary findings indicate differentiated patterns across behavioural outcomes and Quality of Life domains, with indications of improvement primarily in behavioural regulation and physical well-being.

4. Discussion

The present preliminary findings contribute to the still limited but steadily expanding evidence base on the application of Snoezelen Rooms (SR) and multisensory environments in autistic adults. In doing so, they provide clinically relevant insights into the complex interplay between sensory processing, behavioural regulation, and subjective well-being. Taken together, the results highlight a non-uniform pattern of change across outcome domains, with comparatively more consistent effects observed in behavioural indices and a more heterogeneous and context-sensitive pattern emerging in Quality of Life (QoL) measures.

This pattern is theoretically coherent with current models of autism and sensory processing. SR interventions are primarily designed to modulate arousal levels, reduce sensory overstimulation, and support immediate self-

regulatory processes through controlled multisensory input. By contrast, QoL is a broad, multidimensional construct influenced by a wide range of contextual, interpersonal, and structural determinants, many of which extend far beyond the temporal and spatial boundaries of the intervention itself. As such, the expectation of parallel and synchronous changes across behavioural and QoL domains within a short intervention cycle may be conceptually unrealistic.

Despite the exploratory nature of the study design, the observed results appear broadly consistent with the functional aims of SR-based interventions. In particular, preliminary evidence suggests: reductions in hyperactivity and noncompliance; attenuation or extinction of stereotyped behaviours in the participant with higher support needs; improvements in perceived physical well-being; modest positive shifts in global QoL scores among several participants with ASD Level 1. Importantly, these findings should not be interpreted as uniform treatment effects but rather as indicative patterns emerging within a highly heterogeneous sample.

A key interpretative element concerns the pronounced inter-individual variability observed across QoL outcomes. Rather than representing measurement noise or methodological limitation alone, this variability may reflect a core feature of autism itself, consistent with contemporary dimensional and heterogeneity-informed conceptualisations of the condition. Autism is increasingly understood not as a homogeneous diagnostic category but as a spectrum of neurodevelopmental profiles characterised by diverse sensory, cognitive, emotional, and behavioural configurations. In this perspective, differential responsiveness to SR exposure may be shaped by a dynamic interaction between individual characteristics and contextual affordances, including baseline sensory thresholds, regulatory strategies, cognitive appraisal styles, and prior experiences with structured sensory environments.

With respect to behavioural outcomes, the findings observed in the participant with higher support needs are particularly informative. The reduction in hyperactivity/noncompliance and the disappearance of stereotyped behaviours suggest a potential beneficial effect of SR exposure on behavioural regulation in contexts characterised by significant sensory and emotional dysregulation. From a functional perspective, such behaviours may be conceptualised not merely as maladaptive manifestations, but as adaptive or compensatory regulatory strategies deployed in response to overwhelming environmental demands and limited access to alternative coping mechanisms.

Within this framework, the observed behavioural changes may be interpreted as indicative of improved arousal modulation. This interpretation aligns with theoretical accounts proposing that multisensory environments facilitate a shift toward parasympathetic activation, thereby supporting physiological downregulation and reducing the need for externally visible self-stimulatory behaviours. Although direct physiological measures were not included in the present study, the behavioural patterns observed are consistent with this proposed mechanism.

Importantly, the effectiveness of SR interventions is unlikely to be attributable solely to sensory stimulation in a generic sense. Rather, their potential impact appears to emerge from a combination of structured predictability, graded sensory intensity, environmental safety, and—crucially—individualised control over sensory input. The possibility for participants to modulate aspects of the environment (e.g., lighting, sound, tactile input, pacing of interaction) may enhance perceived agency and reduce uncertainty, two factors known to play a central role in stress regulation in autistic individuals. In this sense, SR environments may operate not simply as sensory modulators, but as contexts that actively support autonomy and co-regulation.

From a clinical standpoint, these considerations underscore the importance of fidelity to person-centred principles in SR implementation. Interventions that emphasise choice, responsiveness, and respect for individual sensory profiles are more likely to produce meaningful regulatory effects than standardized or externally imposed sensory protocols. This further supports the view that SR interventions should be conceptualised as flexible, adaptive systems rather than fixed therapeutic procedures.

The interpretation of QoL outcomes requires additional caution and theoretical nuance. The observed heterogeneity across participants and domains reflects the inherently multidimensional, dynamic, and context-dependent nature of QoL as conceptualised in contemporary frameworks (Schalock & Verdugo, 2006). QoL in autistic adults is unlikely to be directly or linearly modified by short-term interventions, even when such interventions produce measurable proximal benefits in behavioural or physiological regulation.

Instead, QoL is better understood as an emergent construct shaped by the interaction between individual capabilities and environmental opportunities. External determinants—including access to meaningful activities, social inclusion, employment conditions, and societal attitudes toward neurodiversity—play a crucial role in shaping perceived life quality. Internal determinants, such as emotional regulation capacity, anxiety levels, coping

styles, and comorbid psychiatric conditions, further contribute to this complexity (Mason et al., 2018). Consequently, short-term clinical interventions are likely to exert only partial and domain-specific effects on QoL.

Within the present findings, the most consistent improvement was observed in the physical well-being domain. This result is theoretically congruent with the primary aims of SR interventions, which are typically oriented toward bodily relaxation, reduction of physiological tension, and enhancement of sensorimotor comfort. The relatively stable pattern observed in material well-being was expected, given the structural nature of this domain and its limited sensitivity to short-term clinical interventions.

Emotional well-being, by contrast, displayed minimal average change but considerable intra-group variability. This pattern is particularly informative, as it suggests that physiological relaxation achieved during SR sessions may not automatically translate into conscious emotional appraisal of well-being. In some cases, individuals may experience bodily calm without explicitly reinterpreting their emotional state, while in others emotional evaluations may remain influenced by external stressors unrelated to the intervention context. This dissociation between physiological and subjective-emotional dimensions highlights the importance of distinguishing between state-level regulation and trait-level evaluations of well-being.

A particularly relevant implication emerging from this study concerns the partial divergence between behavioural improvements and QoL outcomes. This dissociation challenges simplified assumptions that reductions in challenging behaviours necessarily correspond to improvements in subjective well-being. While behavioural regulation may improve relatively rapidly in response to structured sensory environments, QoL dimensions such as autonomy, social participation, and rights are embedded within broader ecological systems that cannot be substantially modified through brief, clinic-based interventions alone.

From a temporal perspective, it is plausible that SR interventions primarily produce short-term regulatory effects, whereas changes in QoL may require longer exposure periods, repeated cycles of intervention, or integration with broader environmental and psychosocial supports. In this sense, SR interventions may be conceptualised as enabling conditions—facilitating immediate regulation and readiness for engagement—rather than as stand-alone interventions capable of producing sustained changes in global life outcomes.

4.1 Study Limitations

Methodological limitations must be carefully acknowledged when interpreting these findings. The very small sample size (N = 5) precludes statistical inference and limits external validity. The absence of a control condition restricts causal interpretation and leaves open the possibility that observed changes may reflect non-specific factors such as therapeutic attention, novelty effects, expectancy effects, or regression to the mean. Furthermore, differences in intervention dosage between participants (20 sessions vs. 10 sessions) introduce an additional source of variability that may have influenced responsiveness to the intervention.

An additional methodological consideration concerns the heterogeneity of informants in QoL assessment, with proxy-report used for the participant with higher support needs and self-report for participants with Level 1 support. While this approach is clinically appropriate and ethically necessary, it introduces potential measurement non-equivalence across subgroups, particularly for domains that are less directly observable or more subjective in nature.

Finally, the short-term nature of the assessment window (T0–T2) limits conclusions regarding durability and maintenance of effects. It remains unclear whether observed behavioural improvements represent transient state changes linked to immediate post-session regulation or more stable adaptations extending beyond the intervention context.

4.2 Future Directions

Future research should address these limitations through more rigorous and methodologically robust designs. The integration of sensory profiling data and systematic micro-analytic coding of video-recorded sessions may allow for a more fine-grained understanding of mechanisms of change, particularly with respect to the relationship between sensory preferences, engagement patterns, and behavioural outcomes. Longitudinal follow-up assessments at 3 and 6 months would be particularly valuable in determining whether short-term regulatory benefits translate into sustained improvements in daily functioning and subjective well-being.

From an intervention development perspective, future studies should also explore the integration of SR exposure within multicomponent intervention

frameworks. Combining multisensory environments with interventions targeting real-world participation, social communication, adaptive coping strategies, and environmental modifications may be particularly effective in addressing QoL domains that are structurally constrained and less sensitive to isolated clinical interventions.

Methodologically, the field would benefit from a diversification of research designs. While randomized controlled trials remain the gold standard for establishing efficacy, single-case experimental designs may offer a particularly appropriate and feasible alternative in contexts characterised by small, heterogeneous samples and high inter-individual variability. Such designs would allow for more precise identification of individual response patterns and contribute to a more nuanced understanding of SR intervention effects at both intra- and inter-individual levels.

5. Conclusion

Although based on a very small sample and collected within an ongoing exploratory study, the present findings provide preliminary support for the feasibility and potential utility of Snoezelen Room (SR) interventions in adults with Autism Spectrum Disorder (ASD). Across participants, SR exposure was associated with observable changes in behavioural regulation, particularly in domains linked to motor activity and repetitive or disorganised behaviours, suggesting that structured multisensory environments may represent a useful adjunctive strategy for supporting short-term self-regulation in clinical settings.

From a Quality of Life (QoL) perspective, results indicate a more differentiated pattern of change. Rather than producing uniform improvements across domains or participants, the intervention appeared to contribute mainly to the maintenance of stable QoL profiles, with limited but non-negligible positive variations in selected dimensions of subjective well-being. This pattern is consistent with the conceptualisation of QoL as a multidimensional construct that is only partially sensitive to short-term, context-bound clinical interventions, particularly when such interventions are not embedded within broader ecological changes.

A central outcome of this study is the clear evidence of marked inter-individual variability in response to SR exposure. This variability reinforces the notion that autistic adults constitute a highly heterogeneous population, in which sensory

processing profiles, regulatory strategies, cognitive styles, and levels of support needs interact in shaping responsiveness to environmental interventions. In this sense, SR-based approaches should not be interpreted as universally effective interventions, but rather as flexible clinical tools whose impact depends on individual-environment fit and on the degree of tailoring implemented in practice.

These considerations have direct implications for clinical practice. First, they highlight the importance of maintaining high fidelity to person-centred principles when implementing multisensory interventions, ensuring that sensory stimulation is continuously adapted to individual profiles rather than delivered according to standardized protocols. Second, they suggest that SR interventions may be most appropriately conceptualised as regulatory supports operating at the level of immediate experiential and physiological states, rather than as standalone interventions aimed at producing global or long-term changes in QoL.

At the same time, the findings underline a structural limitation of sensory-based interventions when considered in isolation. While they may facilitate transient improvements in behavioural regulation and perceived comfort, broader dimensions of QoL—such as autonomy, social participation, and community inclusion—are embedded within complex environmental and relational systems that extend beyond the therapeutic setting. As a result, meaningful and sustained improvements in QoL are likely to require integrated intervention models combining sensory regulation strategies with psychosocial, educational, and environmental supports.

From a methodological perspective, the present study confirms both the value and the constraints of small-scale, exploratory designs in emerging intervention fields. Although the limited sample size precludes generalisation, the study provides clinically relevant descriptive insights and supports the feasibility of combining standardized behavioural measures with QoL assessment in heterogeneous adult ASD populations. The ongoing nature of the research will allow for future integration of sensory profiling data and micro-analytic behavioural analyses, which are expected to enhance the understanding of mechanisms underlying individual responses to SR exposure.

Future research should prioritise longitudinal designs capable of capturing the stability of observed effects over time, as well as experimental or single-case methodologies that can better accommodate heterogeneity in ASD populations. In addition, the integration of multimodal outcome frameworks—including behavioural, physiological, and subjective indicators—may contribute

to a more comprehensive evaluation of multisensory interventions and their clinical relevance.

In conclusion, SR interventions appear to offer a promising but context-dependent support strategy for adults with ASD, with potential benefits primarily in the domain of short-term behavioural regulation and sensory comfort. Their contribution to broader QoL outcomes remains indirect and likely contingent on integration within more comprehensive and sustained intervention pathways. The present findings therefore support continued investigation of multisensory environments, while also emphasising the need for cautious interpretation and for a strong emphasis on individualisation, ecological validity, and long-term outcome evaluation.

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