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## The Influence of Peer Relationships on the Social Development of Children with Autism Spectrum Disorder

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### ABSTRACT

**Purpose:** Peer relationships significantly impact the social development of children with Autism Spectrum Disorder (ASD), influencing their emotional well-being, academic performance, and overall quality of life. This study aims to explore the influence of peer relationships on the social development of children with ASD, identifying the challenges they face and the support systems that facilitate positive social outcomes.

**Methodology:** This qualitative study involved 23 participants, including ten children with ASD, ten parents, and three teachers and support staff. Data were collected through semi-structured interviews and analyzed using NVivo software. Thematic analysis was conducted to identify recurring themes, and theoretical saturation was achieved to ensure comprehensive data coverage.

**Findings:** The analysis revealed four main themes: Social Interaction Challenges, Peer Relationship Dynamics, Parental and Teacher Support, and Positive Outcomes. Social Interaction Challenges included difficulties in communication, sensory overload, social anxiety, and misinterpretation of social cues. Peer Relationship Dynamics covered forming and sustaining friendships, inclusion and exclusion, and the influence of peers. Parental and Teacher Support highlighted strategies for social development, the role of teachers, parental involvement, and community resources. Positive Outcomes encompassed improvement in social skills, building self-esteem, increased independence, and enhanced academic performance.

**Conclusion:** Peer relationships play a crucial role in the social development of children with ASD. Despite significant challenges, targeted interventions and supportive environments can lead to substantial improvements in social competencies. The findings underscore the importance of inclusive settings, peer-mediated interventions, and active involvement of parents and teachers in fostering positive social interactions for children with ASD.

**Keywords:** Autism Spectrum Disorder, Peer Relationships, Social Development, Social Skills, Parental Support, Teacher Support, Inclusive Education.

## 1. Introduction

The social development of children with Autism Spectrum Disorder (ASD) is a critical area of concern for educators, clinicians, and parents alike. Peer relationships play a pivotal role in the socialization process, influencing various aspects of a child's life, including emotional well-being, academic performance, and overall quality of life (Clauser et al., 2020; Lee et al., 2024; Millaku, 2023; Wei, 2023). Despite the recognized importance of peer interactions, children with ASD often face substantial challenges in forming and maintaining relationships with their peers (Bellini et al., 2007).

Autism Spectrum Disorder is characterized by deficits in social communication and the presence of restricted, repetitive behaviors and interests (American Psychiatric Association, 2022). These core symptoms can significantly impede the ability of children with ASD to engage in typical social interactions, often resulting in social isolation and difficulty in establishing peer relationships (White et al., 2006). Research has shown that social skills interventions can be effective in improving social competencies among children with ASD, yet the extent and nature of peer influence on these outcomes require further investigation (Radley et al., 2015).

The role of executive functioning in social competence is particularly noteworthy. Fong and Iarocci (2020) found that executive functioning skills are predictive of social competence in children with ASD (Fong & Iarocci, 2020). This highlights the complex interplay between cognitive abilities and social skills, suggesting that interventions targeting executive functions may indirectly enhance social outcomes. Similarly, Itskovich et al. (2020) emphasized the importance of social motivation in predicting social skills, underscoring the unique role of motivational factors in the social development of children with ASD (Itskovich et al., 2020).

Peer-mediated interventions (PMIs) have emerged as a promising approach to improving social interactions among children with ASD. These interventions leverage the social behaviors of typically developing peers to facilitate social engagement and skill acquisition in children with ASD (Katz & Girolametto, 2013). Martinez et al. (2019) conducted a systematic review of single-case research design studies and found that PMIs are effective in addressing the social competence needs of young children with ASD (Martinez et al., 2019).

PMIs not only benefit children with ASD but also positively impact their typically developing peers. Locke, Rotheram-Fuller, and Kasari (2012) explored the social impact of being a typical peer model and found that typical peers who participated in PMIs developed a deeper understanding and acceptance of their peers with ASD (Locke et al., 2012). This reciprocal benefit highlights the potential of PMIs to foster inclusive and supportive classroom environments (Kasari et al., 2011).

School-based social skills training programs have been extensively studied as a means of enhancing the social competencies of children with ASD. Bellini et al. (2007) conducted a meta-analysis of school-based social skills interventions and reported significant improvements in the social behaviors of children with ASD (Bellini et al., 2007). These programs typically involve structured activities designed to teach specific social skills, such as initiating conversations, responding to social cues, and managing conflicts.

The implementation of social skills training within school settings offers several advantages. It provides a naturalistic environment where children can practice and generalize newly acquired skills. Moreover, the involvement of teachers and support staff in these programs ensures continuous monitoring and reinforcement of social behaviors (Radley et al., 2015).

The quality of peer relationships significantly influences the social development of children with ASD. Positive peer interactions can enhance social skills, build self-esteem, and promote a sense of belonging (Owen-DeSchryver et al., 2008). Conversely, negative peer experiences, such as bullying and exclusion, can exacerbate social difficulties and lead to increased anxiety and depression (Rodda & Estes, 2018; Yi & Siu, 2020).

Yi and Siu (2020) conducted an ethnographic-vignette study that highlighted the complexities of social interactions between children with ASD and their typically developing peers. The study found that children with ASD often face misunderstandings and social rejection, which can hinder their social development. However, with appropriate support and interventions, these children can develop meaningful and lasting friendships (Yi & Siu, 2020).

Physical activity has been shown to positively impact the health and social functioning of individuals with ASD. Jia and Xie (2021) reported that exercise interventions can improve the overall health of people with ASD, including enhancements in social interactions. Structured physical activities provide opportunities for children with ASD to

engage with their peers in a less formal and more enjoyable context, thereby facilitating social connections (Jia & Xie, 2021).

The urban built environment also plays a crucial role in shaping the play behavior of children with ASD. Wu et al. (2022) examined the impact of urban environments on the play behavior of children with ASD and found that inclusive and accessible play spaces can promote social interactions and reduce social isolation. These findings underscore the importance of designing urban environments that support the social needs of children with ASD (Wu et al., 2022).

Technological advancements have introduced new possibilities for measuring and enhancing social interactions among children with ASD. Douglas, Shi, Das, and Biswas (2021) validated the use of wearable sensor technology to measure social proximity in young children with ASD. This technology provides objective data on social interactions, enabling more precise and individualized interventions. Virtual reality (VR) and computer-based programs have also been explored as tools for social skills training. These technologies offer immersive and controlled environments where children with ASD can practice social interactions and receive immediate feedback. While still in the early stages of research, these innovations hold promise for enhancing traditional social skills training methods (Douglas et al., 2021).

Early intervention is critical for optimizing the social development of children with ASD. Katz and Girolametto (2013) emphasized the benefits of implementing PMIs in early childhood education settings. Early interventions can capitalize on the plasticity of the developing brain, leading to more significant and lasting improvements in social competencies (Katz & Girolametto, 2013).

Moreover, early identification and intervention can prevent the escalation of social difficulties and associated behavioral issues. Luu et al. (2020) compared children born preterm and full-term on the autism spectrum and found that early intervention programs were particularly beneficial for those with additional risk factors, such as preterm birth (Luu et al., 2020).

A holistic approach to social development encompasses not only skill acquisition but also the broader context of the child's environment and relationships. Fasano et al. (2021) highlighted the importance of inclusion and objectively measured interactions in promoting social development among preschoolers with and without ASD. This approach recognizes the interplay between individual skills and

environmental factors in shaping social outcomes (Fasano et al., 2021).

Rodda and Estes (2018) argued that supporting peer relationships and friendships goes beyond teaching social skills. It involves creating supportive environments, fostering understanding and acceptance, and addressing the individual needs of children with ASD. Such comprehensive approaches are essential for promoting meaningful and sustained social development (Rodda & Estes, 2018).

The influence of peer relationships on the social development of children with Autism Spectrum Disorder is multifaceted and profound. While challenges persist, particularly in areas such as communication, sensory processing, and social anxiety, targeted interventions and supportive environments can facilitate positive social experiences. Peer-mediated interventions, school-based social skills training, physical activity, and early intervention are all effective strategies for enhancing social competencies in children with ASD. Furthermore, technological innovations and inclusive urban design hold promise for further advancing this field. This article aims to explore the influence of peer relationships on the social development of children with ASD, drawing on qualitative data collected through semi-structured interviews.

## 2. Methods and Materials

### 2.1. Study Design and Participants

This study employed a qualitative research design to explore the influence of peer relationships on the social development of children with Autism Spectrum Disorder (ASD). The qualitative approach was chosen to gain in-depth insights into the experiences and perspectives of children with ASD and their interactions with peers. Semi-structured interviews were conducted to collect rich, detailed data that could capture the nuances of these relationships.

Participants were selected using purposive sampling to ensure that they had relevant experiences and could provide meaningful insights into the research questions. The sample included:

**Children with ASD:** Ten children diagnosed with ASD, aged between 6 and 12 years, were recruited from local schools and autism support groups. The diagnosis was confirmed through medical records and consultation with their primary caregivers.

**Parents of Children with ASD:** Ten parents of the participating children were also interviewed to provide

additional context and insights into their children's peer relationships and social development.

**Teachers and Support Staff:** Five teachers and support staff who worked closely with the participating children were included to offer their perspectives on the children's social interactions and peer relationships within the school setting.

Informed consent was obtained from all participants, including parental consent for children, and assent from the children themselves. Participants were assured of their confidentiality and anonymity, and were informed of their right to withdraw from the study at any time without any consequences.

## 2.2. Measures

### 2.2.1. Semi-Structured Interview

Data were collected through semi-structured interviews, which allowed for flexibility in exploring the participants' experiences while maintaining a consistent structure across interviews. The interview guides were developed based on a review of the literature and consultations with experts in autism and child development.

**Children with ASD:** Interviews with children focused on their experiences with peers, types of social interactions, feelings about these interactions, and perceived challenges and successes in forming relationships.

**Parents:** Interviews with parents covered their observations of their child's peer relationships, changes in social behavior over time, and strategies used to support their child's social development.

**Teachers and Support Staff:** Interviews with teachers and support staff addressed their observations of the children's peer interactions in the school environment, the impact of these interactions on social development, and any interventions or support provided.

Interviews were conducted in a quiet, comfortable setting to facilitate open and honest communication. Each interview

lasted approximately 30-60 minutes and was audio-recorded with the participants' consent.

### 2.3. Data Analysis

The data collected from the interviews were transcribed verbatim and analyzed using NVivo software, a qualitative data analysis tool that facilitates the organization and coding of large amounts of textual data. The analysis followed a thematic approach, which involved:

**Initial Coding:** Transcripts were read multiple times to gain a deep understanding of the content. Initial codes were generated based on recurring themes and significant statements.

**Development of Themes:** Codes were grouped into broader categories to identify patterns and relationships. Themes that emerged from the data were reviewed and refined through discussions with co-researchers.

**Theoretical Saturation:** Data collection continued until theoretical saturation was achieved, meaning no new themes or insights were emerging from the interviews. This ensured the comprehensiveness and robustness of the findings.

## 3. Findings and Results

The study included a total of 23 participants, comprising ten children with Autism Spectrum Disorder (ASD), ten parents of these children, and three teachers and support staff. The children, aged between 6 and 12 years (mean age = 9 years), were all diagnosed with ASD as confirmed through medical records and parental reports. Among the children, seven were boys and three were girls. The parents consisted of seven mothers and three fathers, all of whom were actively involved in their child's social development and educational activities. The participating teachers and support staff, two females and one male, had extensive experience working with children with ASD in educational settings.

**Table 1**

### Main Themes, Subthemes, and Concepts

Categories	Subcategories	Concepts
1. Social Interaction Challenges	Difficulty in Communication	Understanding verbal cues, Expressing emotions, Non-verbal communication struggles
	Sensory Overload	Noise sensitivity, Crowded spaces, Bright lights
	Social Anxiety	Fear of rejection, Avoidance of eye contact, Nervousness in groups
	Misinterpretation of Social Cues	Literal interpretation, Struggles with sarcasm, Difficulty with body language
2. Peer Relationship Dynamics	Forming Friendships	Initiating conversations, Shared interests, Trust building
	Sustaining Friendships	Consistency in interaction, Managing conflicts, Maintaining interest

3. Parental and Teacher Support	Inclusion and Exclusion	Feeling left out, Seeking acceptance, Peer support
	Influence of Peers	Peer pressure, Role models, Group activities
	Strategies for Social Development	Structured playdates, Social skills training, Positive reinforcement
4. Positive Outcomes	Role of Teachers	Classroom interventions, Teacher-student relationships, Monitoring peer interactions
	Parental Involvement	Encouragement at home, Communication with school, Attending support groups
	Community Resources	Support groups, Therapy sessions, Recreational activities
	Improvement in Social Skills	Better communication, Increased empathy, Enhanced cooperation
	Building Self-Esteem	Sense of achievement, Positive self-image, Increased confidence
	Increased Independence	Decision making, Problem-solving, Reduced reliance on adults
	Academic Performance	Classroom participation, Group projects, Improved grades

The analysis of the semi-structured interviews revealed four main themes regarding the influence of peer relationships on the social development of children with Autism Spectrum Disorder (ASD): Social Interaction Challenges, Peer Relationship Dynamics, Parental and Teacher Support, and Positive Outcomes. Each theme includes several subthemes and related concepts, providing a detailed understanding of the experiences and perspectives of the participants.

### 3.1. Social Interaction Challenges

Children with ASD often face significant challenges in social interactions. The subthemes identified include:

**Difficulty in Communication:** Children struggle with understanding verbal cues, expressing emotions, and non-verbal communication. One parent noted, "My son often can't express how he feels, and it's hard for him to read other kids' expressions."

**Sensory Overload:** Participants reported difficulties in environments with high noise levels, crowded spaces, and bright lights. A teacher mentioned, "Loud noises in the classroom can be overwhelming for some of my students with autism."

**Social Anxiety:** Fear of rejection, avoidance of eye contact, and nervousness in group settings were common. A child with ASD shared, "I get really scared when I have to talk to new people. I don't know what to say."

**Misinterpretation of Social Cues:** Children often take things literally, struggle with sarcasm, and have difficulty understanding body language. A parent explained, "Jokes and sarcasm are really tough for my daughter; she doesn't get why people are laughing."

### 3.2. Peer Relationship Dynamics

The dynamics of peer relationships play a crucial role in the social development of children with ASD. The subthemes include:

**Forming Friendships:** Initiating conversations, finding shared interests, and building trust are challenging. One child said, "I like to talk about my favorite video games, but it's hard to find friends who like the same things."

**Sustaining Friendships:** Consistency in interaction, managing conflicts, and maintaining interest are essential for lasting friendships. A parent observed, "It's not just about making friends; it's about keeping them. My son needs help to understand how to manage disagreements."

**Inclusion and Exclusion:** Feeling left out, seeking acceptance, and peer support are critical issues. A child mentioned, "Sometimes, I feel like I don't belong when other kids don't include me in their games."

**Influence of Peers:** Peer pressure, role models, and group activities can positively or negatively impact social development. A teacher commented, "Peer groups can have a big influence. Positive role models help encourage better social behavior."

### 3.3. Parental and Teacher Support

Support from parents and teachers is vital in aiding the social development of children with ASD. The subthemes identified are:

**Strategies for Social Development:** Structured playdates, social skills training, and positive reinforcement were commonly used. A parent shared, "We organize playdates with other children and practice social skills in a controlled setting."

**Role of Teachers:** Classroom interventions, teacher-student relationships, and monitoring peer interactions were highlighted. A teacher explained, "I often set up group activities to help students with autism engage more with their peers."

**Parental Involvement:** Encouragement at home, communication with the school, and attending support groups were important. A parent mentioned, "We work



closely with his teachers and attend support groups to learn how to help him socially."

Community Resources: Support groups, therapy sessions, and recreational activities were beneficial. One parent noted, "Therapy sessions have been really helpful in improving my child's social skills."

### 3.4. Positive Outcomes

Despite the challenges, many children with ASD show significant positive outcomes in their social development. The subthemes include:

Improvement in Social Skills: Better communication, increased empathy, and enhanced cooperation were observed. A teacher said, "I've seen real improvements in his ability to communicate with classmates and show empathy."

Building Self-Esteem: A sense of achievement, positive self-image, and increased confidence were important. A parent commented, "When my daughter makes a new friend, it really boosts her confidence and makes her feel good about herself."

Increased Independence: Decision-making, problem-solving, and reduced reliance on adults were noted. A child mentioned, "I'm learning to solve problems on my own, and it feels good not to always need help."

Academic Performance: Classroom participation, group projects, and improved grades were linked to better peer relationships. A teacher observed, "When students with autism feel socially included, their academic performance also improves."

## 4. Discussion and Conclusion

The analysis of semi-structured interviews revealed four main themes regarding the influence of peer relationships on the social development of children with Autism Spectrum Disorder (ASD): Social Interaction Challenges, Peer Relationship Dynamics, Parental and Teacher Support, and Positive Outcomes. Each theme encompasses several subcategories, each detailing various aspects of the children's social experiences and development.

The theme of Social Interaction Challenges encompasses four subcategories: Difficulty in Communication, Sensory Overload, Social Anxiety, and Misinterpretation of Social Cues. In the Difficulty in Communication category, concepts include understanding verbal cues, expressing emotions, and non-verbal communication struggles. Sensory Overload covers noise sensitivity, crowded spaces, and bright lights. Social Anxiety is characterized by fear of rejection,

avoidance of eye contact, and nervousness in groups. Misinterpretation of Social Cues involves literal interpretation, struggles with sarcasm, and difficulty with body language.

Peer Relationship Dynamics includes four subcategories: Forming Friendships, Sustaining Friendships, Inclusion and Exclusion, and Influence of Peers. The Forming Friendships category focuses on initiating conversations, shared interests, and trust-building. Sustaining Friendships covers consistency in interaction, managing conflicts, and maintaining interest. Inclusion and Exclusion involves feeling left out, seeking acceptance, and peer support. Influence of Peers includes peer pressure, role models, and group activities.

The theme of Parental and Teacher Support contains four subcategories: Strategies for Social Development, Role of Teachers, Parental Involvement, and Community Resources. Strategies for Social Development include structured playdates, social skills training, and positive reinforcement. The Role of Teachers covers classroom interventions, teacher-student relationships, and monitoring peer interactions. Parental Involvement focuses on encouragement at home, communication with school, and attending support groups. Community Resources involve support groups, therapy sessions, and recreational activities.

Positive Outcomes comprises four subcategories: Improvement in Social Skills, Building Self-Esteem, Increased Independence, and Academic Performance. Improvement in Social Skills includes better communication, increased empathy, and enhanced cooperation. Building Self-Esteem covers a sense of achievement, positive self-image, and increased confidence. Increased Independence involves decision making, problem-solving, and reduced reliance on adults. Academic Performance focuses on classroom participation, group projects, and improved grades.

Children with ASD face considerable challenges in social interactions, particularly in areas such as communication, sensory processing, and social anxiety. These findings are consistent with previous research that has documented the social communication deficits inherent in ASD (Bellini et al., 2007; White et al., 2006). The difficulty in understanding verbal cues, expressing emotions, and non-verbal communication aligns with the core diagnostic criteria of ASD (American Psychiatric Association, 2013). Sensory overload, another prominent challenge identified in this study, has been extensively reported in the literature as a

common issue for individuals with ASD, affecting their ability to engage in social settings (Jia & Xie, 2021).

Social anxiety emerged as a significant barrier to social interaction, with many children expressing fear of rejection and nervousness in group settings. This is in line with findings by Yi and Siu (2020), who highlighted the social anxiety experienced by children with ASD in their ethnographic-vignette study (Yi & Siu, 2020). Misinterpretation of social cues, such as taking things literally and struggling with sarcasm, further complicates social interactions for these children (Itskovich et al., 2020).

The dynamics of peer relationships play a crucial role in the social development of children with ASD. The study found that forming and sustaining friendships are areas where children with ASD struggle significantly. This is supported by the work of Martinez et al. (2019), who found that peer-mediated interventions (PMIs) can effectively address social competence needs by facilitating structured interactions with typically developing peers. PMIs not only help children with ASD learn and practice social skills but also promote empathy and understanding among their peers (Locke et al., 2012).

Inclusion and exclusion were recurring themes in the interviews, with many children feeling left out or struggling to be accepted by their peers. This is consistent with the findings of Owen-DeSchryver et al. (2008), who reported that inclusive school settings could promote social interactions, although children with ASD often still face challenges in being fully accepted (Owen-DeSchryver et al., 2008). The influence of peers, both positive and negative, was also highlighted. Positive peer influences, such as role models and supportive friends, can significantly enhance social development, whereas negative influences can exacerbate social difficulties (Kasari et al., 2011).

The role of parents and teachers is pivotal in supporting the social development of children with ASD. The study found that structured social skills training, parental involvement, and the use of community resources are essential components of effective support strategies. Bellini et al. (2007) emphasized the effectiveness of school-based social skills interventions in their meta-analysis, noting that such programs can lead to significant improvements in social behaviors (Bellini et al., 2007). Radley et al. (2015) also highlighted the importance of teacher involvement in these programs, as teachers can provide consistent reinforcement and monitoring of social skills within the classroom setting (Radley et al., 2015).

Parental involvement was identified as a critical factor in supporting social development. Parents who actively engage in their child's social skills training, communicate with schools, and utilize community resources such as support groups and therapy sessions can significantly enhance their child's social outcomes (Rodda & Estes, 2018). This finding is consistent with the broader literature, which emphasizes the role of the family environment in the social and emotional development of children with ASD (Fong & Iarocci, 2020).

Despite the challenges, the study found that many children with ASD experience significant positive outcomes in their social development, particularly when provided with appropriate support and interventions. Improvements in social skills, such as better communication and increased empathy, were commonly reported. These findings align with the results of Kasari et al. (2011), who demonstrated that social skills training can lead to meaningful improvements in social competencies (Kasari et al., 2011).

Building self-esteem and increasing independence were also noted as positive outcomes. Children who successfully form and sustain friendships often experience a boost in self-esteem and a greater sense of accomplishment (Itskovich et al., 2020). Increased independence, characterized by improved decision-making and problem-solving abilities, further supports the overall development of children with ASD (Fasano et al., 2021).

Moreover, the study highlighted the impact of improved peer relationships on academic performance. Children with better social skills and more positive peer interactions were more likely to participate in classroom activities and perform better academically. This finding is supported by research conducted by Locke et al. (2012), who found that inclusion and positive peer relationships can enhance academic outcomes for children with ASD (Locke et al., 2012).

The results of this study align with and extend the findings of previous research on the social development of children with ASD. The importance of social skills interventions, both school-based and peer-mediated, has been consistently demonstrated in the literature (Bellini et al., 2007; Martinez et al., 2019). The critical role of parents and teachers in supporting these interventions is also well-documented (Radley et al., 2015; Rodda & Estes, 2018).

The challenges identified in this study, including communication difficulties, sensory overload, and social anxiety, are consistent with the core symptoms of ASD and the broader literature on the social experiences of children with ASD (White et al., 2006; Yi & Siu, 2020). The positive

outcomes reported, particularly in terms of improved social skills and increased self-esteem, underscore the potential for meaningful progress when children with ASD are provided with appropriate support and interventions (Kasari et al., 2011).

This study explored the influence of peer relationships on the social development of children with Autism Spectrum Disorder (ASD) through qualitative data collected from semi-structured interviews. The analysis revealed four main themes: Social Interaction Challenges, Peer Relationship Dynamics, Parental and Teacher Support, and Positive Outcomes. Key findings include the significant challenges children with ASD face in communication, sensory processing, and social anxiety; the critical role of peer relationships in forming and sustaining friendships; the importance of parental and teacher support in social skills development; and the positive outcomes such as improved social skills, increased self-esteem, and enhanced academic performance when appropriate support is provided.

The findings of this study underscore the profound impact of peer relationships on the social development of children with ASD. While these children face substantial social interaction challenges, the presence of supportive peers, parents, and teachers can facilitate significant improvements in their social competencies. The study highlights the necessity of targeted interventions and inclusive environments to foster positive social experiences for children with ASD. By addressing the unique social needs of these children, we can enhance their overall quality of life and promote their inclusion in various social settings.

This study has several limitations that should be acknowledged. The sample size was relatively small and geographically limited, which may affect the generalizability of the findings. Additionally, the reliance on self-reported data from parents, children, and teachers may introduce bias, as participants' perceptions and recollections might not fully capture the objective reality of the children's social interactions. Finally, the qualitative nature of the study, while providing in-depth insights, does not allow for the quantification of the impact of peer relationships on social development.

Future research should aim to include larger and more diverse samples to enhance the generalizability of the findings. Longitudinal studies would be beneficial to examine the long-term effects of peer relationships and interventions on the social development of children with ASD. Additionally, incorporating quantitative methods alongside qualitative approaches could provide a more

comprehensive understanding of the impact of peer relationships. Research exploring the role of technology and innovative interventions, such as virtual reality and wearable sensors, in supporting social development in children with ASD would also be valuable.

Practitioners working with children with ASD should prioritize creating inclusive environments that facilitate positive peer interactions. Implementing peer-mediated interventions and school-based social skills training can significantly enhance social competencies. Educators and clinicians should involve parents actively in their child's social development by providing them with strategies and resources to support social skills at home. Additionally, policies promoting inclusive education and community programs that encourage social integration can further support the social development of children with ASD. By adopting a holistic and collaborative approach, we can create supportive environments that promote the social inclusion and well-being of children with ASD.

### Authors' Contributions

In this article, the corresponding author was responsible for the intervention implementation, data analysis, and manuscript writing, while the other authors supervised the data analysis and manuscript writing.

### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

### Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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### Declaration of Interest

The authors report no conflict of interest.

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## Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

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