



Peer-Based Intervention in Improving Social Interaction of Autistic Children

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Abstract: This study is a literature review of peer-based interventions in improving social interaction in children with Autism Spectrum Disorder (ASD). Using a literature review approach, we searched for relevant literature to identify the effect of peer-based interventions in overcoming difficulties in children with Autism Spectrum Disorder (ASD) in their social interactions. The literature search was conducted through credible search engines such as Google Scholar, PubMed, and others. The search includes keywords such as "autism spectrum disorder" "peer mediated intervention" "social skill" "interaction skill" and other variations with a period of 2019-2023. The results of this study indicate that peer-based interventions can improve social engagement in children with ASD. Factors such as similar interests, support and positive feedback from peer coaches, and adult monitoring play a role in the success of the intervention. Although there is variation between studies, these findings provide a strong basis for understanding the important role of interest-based interventions in supporting the development of social interactions in children with ASD. Practical implications include the need for individualized approaches and integration of interest-based interventions into special education programs. This study also identifies knowledge gaps and recommends future research directions to continue to enrich our understanding of effective intervention strategies to improve social interaction skills in children with Autism Spectrum Disorder (ASD).

Keywords: *autism spectrum disorder; peer-based intervention; social interaction*

I. Introduction

Autism Spectrum Disorder (ASD) is a condition in which there is a neurological and developmental disorder that affects the way people interact with others, communicate, learn and behave. Autism Spectrum Disorder (ASD) is characterized by "persistent difficulties with social interaction and communication" and "restricted and repetitive activities, patterns of behavior, and interests" (including sensory behaviors), which appear in childhood and "limit and interfere with daily life" (American Psychiatric Association, 2013). The term "autism spectrum disorder" has replaced individual labels in DSM VI and III such as "autistic disorder", "Asperger's disorder", "childhood disintegrative disorder", and "pervasive developmental disorder-not otherwise specified (PDD-NOS)" in DSM-5. This suggests that "autism spectrum disorder" (ASD) may overtake other diagnoses as the most commonly assigned condition.

People with Autism Spectrum Disorder (ASD) often have difficulties with social interactions, such as initiating interactions, reacting to others' speech and behavior, and maintaining engagement in social interactions (Dewantoro et al, 2022; Koegel et al. 2008; Volkmar et al. 1997). In particular, their conversations often show short responses, context-free speech, and a lack of knowledge-sharing communication, as well as few conversational exchanges (Jones & Schwartz, 2009). These deficiencies can result in problematic behaviors, academic challenges, and withdrawal and exclusion from peer groups. In addition, individuals with Autism Spectrum Disorder (ASD) can also experience difficulties in independence, challenges in building relationships with others, and difficulties in entering the world of work (Howlin et al., 2004). With this deficit, effective interventions are needed to support the lives of individuals with Autism Spectrum Disorder (ASD) from an early age. A method that is said to be effective for improving the development of social skills in ASD individuals by linking learning with peers from the same age group to apply techniques based on the principles of analytical behavior (McFadden et al., 2014 Oh-Young et al., 2018; Al Wahbi & Hua, 2021). Peer-mediated interventions involve educational strategies in which children receive training and assistance from educators to act as intervention agents. They help facilitate behavioral interventions and teaching programs, as well as engage in social interactions

with peers who may be socially incompetent (Chan et al., 2009). Specifically, peer-mediated intervention (PMI) refers to an intervention in which a researcher or practitioner systematically instructs a developing peer on how to actively engage children with ASD in positive social interactions. The goal is to assist children with ASD in acquiring new and appropriate social skills (Goldstein et al., 1992; Garrison-Harrell et al., 1997; Thiemann & Goldstein, 2004; Katz & Girolametto, 2013; Thiemann-Bourque, McGuff, & Goldstein, 2017). At the beginning of the intervention, children undergo training to become a source of teaching. They are explicitly taught strategies for interacting with peers, emphasizing the importance of maintaining eye contact, setting an example and reinforcing desired social behaviors, initiating play requests, and responding positively to play offers from their peers (Hughett et al., 2013).

Hughett et al., 2013 stated that the core of PMI involves giving leadership roles to developing peers, i.e. classmates, to help students with ASD and improve their social skills. As the name implies, peers in the classroom will take on various roles in the intervention, such as demonstrating appropriate behavior, initiating interactions, and encouraging and reinforcing prosocial behaviors. By using peer intervention there is an increase in proficiency in communication, conflict resolution, mutual cooperation, perspective taking, sharing, and emotional understanding skills towards children (Craig-Unkefer & Kaiser, 2002; Barbarin & Wasik, 2009; Chan et al., 2009). Findings from interventions focused on social skills show that Peer Mediation Interventions (PMIs) are successful in improving social skills (Reichow & Volkmar, 2010). PMI has shown effectiveness in other areas, including improving social networking, non-verbal social skills, and communication skills (Chang & Locke, 2016). With various studies from year to year that show that Peer Mediation Intervention (PMI) is effective in improving the development of children's social interaction with Autism Spectrum Disorder (ASD). Given the social competency challenges shown by children with ASD and the adverse effects associated with these challenges, the implementation of interventions is critical. PMI seems to be a promising intervention to meet the social needs of children with ASD. However, from the various studies that have been carried out in the past years, we therefore want to analyse how the effects of this peer intervention have been in the last five years. After searching the literature on peer interventions, especially to improve children's social interaction with ASD, it turns out that there is not much research on this in the 2019-2023 period.

There has been a systematic review of research published in the last five years, but the research reviewed was from the 1900s to the early 2000s. Therefore, this article aims to conduct a comprehensive systematic review of what the effects of interest-based interventions are in improving social interaction in children with Autism Spectrum Disorder (ASD).

II. Method

This study uses a literature review approach to investigate the effectiveness of interest-based interventions in improving peer social interaction in early childhood with Autism Spectrum Disorder (ASD). The included studies must meet the criteria, namely focusing on children with Autism Spectrum Disorder (ASD) who are in school and interest-based interventions. Studies that did not meet these criteria were excluded.

Literature searches are carried out through credible search engines such as google scholar, PubMed, and others. The search includes keywords such as "autism spectrum disorder", "peer mediated intervention", "social skill", "interaction skill" and other variations with a reading period of 2019-2023. The selection of the study was carried out by four independent researchers. The initial selection stage involves a review of the title and abstract, followed by a full evaluation of the text for studies that meet the criteria for interest-based interventions in autistic children.

III. Results And Discussion

A. Result

From the literature search conducted, a total of 2 studies met the inclusion criteria for this study. These studies spanned the time span from 2019 to 2023 and included child participants with a diagnosis of Autism Spectrum Disorder (ASD).

Table 1. Literature studied

No	Literature studied		
	<i>Referensi</i>	<i>Context of the implementation of the intervention</i>	<i>Result</i>
1	Effects of Multicomponent Peer Mediated Intervention on Social Communication of Preschoolers with Autism Spectrum Disorder (Ana D. Dueñas et.al, 2020)	The intervention focuses on self-management. During the intervention self-management procedure was delivered to the peer coach, 15 minutes before the first play session the peer coach and ASD were shown a video model before each play session.	A multicomponent PMI involving the use of self-management and video modeling showed that children with ASD can learn to start from their peers during play with minimal facilitation from adults. And peer coaches can also learn to respond reliably to their peers through self-management.
2	Effectiveness of a low-intensity Peer-Mediated Intervention for Middle School Students with Autism Spectrum Disorder (Thea Brain, Pat Mirenda, 2019)	The training lasted for a period of 3 months. Peer coaches were encouraged to interact with their classmates with ASD during lunch breaks at school, using the strategies they learned, for 40-50 years.	The results showed a functional relationship between the intervention and engagement and communicative actions with three examples of effects in all participants. Indicators of shared enjoyment were observed in most of the intergroup investigation observation sessions. There are some effects that are maintained in weeks 1-4.

B. Discussion

The research discussion section contains a discussion of the research results and comparison with theory and or Based on the analysis of 2 articles, it is known that the application of peer intervention has an influence on children's interaction with Autism Spectrum Disorder (ASD). This peer intervention involves the use of methods in providing peer intervention, how the influence of peer intervention on the interaction of children with autism,

1) *Methods or settings for peer intervention*

The method used is different in each article, the research in the first article is Early Intensive Behavioral Intervention (EIBI). With 3 participants of children with ASD who were in preschool inclusion were selected based on several criteria, who were paired with three peers who were decided by based on their observations of the children in the class with several criteria. The first ASD participant (W) can join his or her peers, but does not initiate interaction with his peers. (O) also joins his peers in activities he likes, but gives inconsistent responses to his peers' initiatives.

And the chair article uses a multiple-baseline design and then uses the IRD to see the change index. The implementation of the research was carried out by forming 3 groups of participants, with different class levels. Group 1 consisted of one teacher, 2 peer trainers and an ASD student. Group 2 consists of one teacher, 4 peer trainers, and an ASD student. Group 3 consisted of a teacher, 3 peer trainers and an ASD student. The three ASD students have limited communication skills which results in their lack of interaction with friends. Interventions were carried out during breaks covering school yard areas, libraries, and indoor common areas.

2) *Effect of the intervention on the interaction of children with ASD and peers*

There is an influence on peer intervention in children with ASD, both on social communication exchanges and social initiation and responses from children with ASD. The communication exchange of each child is different, in the exchange of social communication between W and M there is an increase but the impact of multicomponent intervention is not direct. The exchange of communication between O and O has decreased, but the impact of the multicomponent intervention is direct. With social exchanges varied, there were increases, decreases, and finally increased. The exchange of social communication between T and A has the impact of a direct multicomponent intervention, the occurrence of increase, decrease and increase at the end during the intervention. This is similar to the research report by Garfinkle and Schwartz (2002) that the level of interaction at follow-up is higher than the initial interaction. In the initiation and social response of W, there was no impact of change on social response, but there was an increase towards the end of the

intervention. The increase in O initiation was obvious and the social response to O was low at the beginning, but there was a change but it was minimal. Nevertheless, we saw changes in both the pattern and quantity of responses; however, this increase only reached an average of four responses per game session, ranging from 0 to 12 (Ana D. Dueñas et al, 2020).

There is an effect on children's social involvement with ASD after peer intervention carried out during the break period, in article 2. The results provided evidence of a functional relationship between the intervention and peer engagement, communicative actions (CAs), shared enjoyment, and social validity of teachers and peer trainers. There is an effect of peer intervention on children with ASD in line with the findings of Zhang and Wheeler (2011) who found that peer intervention is effective in improving social interaction. Results are maintained during the follow-up period with some level decreases and increased variability. The mutual enjoyment is obvious to all participants and the social validity rating is high for both peer trainers and class teachers. (Brain T & Mirenda P, 2019).

3) *Success factors of the Intervention*

In article 1, there are several contributions to peer training interventions that are found, among others, adult facilitation is still needed in the intervention. This is because, as Ana D. Dueñas et al (2020) put it, "specifically, two developing children changed their responses from positive at the beginning of the study to negative at the middle and end of the study. Children report that their friends with ASD don't always share toys." With that, it is necessary to facilitate adults in peer training interventions so that the course of intervention is more positive). Although adult involvement during play may be considered distracting, it is important for adults to monitor and ensure positive interactions between children with ASD and their peers. Stated that although peers play the role of intervening, the direct participation of adults in social interaction has the potential to hinder the process. Practitioners, such as teachers, speech pathologists, and doctors, are responsible for designing, implementing, and monitoring the impact of these interventions.

Some of the factors that contribute to the success of this peer training intervention or PMI are the existence of shared pleasure between peer trainers and children with ASD, in article 2, namely with shared fun, both peer training and children with ASD will enjoy their togetherness. Peer coaches will not feel overwhelmed or do it with a heavy heart. Then the feedback given by the authors to the peer trainer at each observation during the intervention proved to be an important element of the overall intervention. This feedback helped overcome the initial logistical challenges for Thomas and Alexander's group. The involvement of several peer coaches is likely to contribute to positive outcomes. One of Alexander's coaches argued that coaching more colleagues would prevent coaching from feeling like "work or duty". It seems that having additional friends increases confidence and fun for peer coaches when interacting with their classmates with ASD. In addition, it has a lot of peer coaches reduce individual responsibility for each coach (Brain T & Mirenda P, 2019).

IV. Conclusion

This systematic review supports the effectiveness of peer-based interventions, and variations in intervention design and evaluation methods highlight the challenges that still exist in achieving standardization. Some studies used different durations or intensities of interventions, and the context in which the interventions were implemented may also vary. Therefore, this article provides a basis for further research to detail specific elements in the intervention approach that can influence the results, consistently and convincingly regarding the effectiveness of peer-based interventions to improve social interaction in children with Autism Spectrum Disorder (ASD). These findings reinforce the positive contribution of peer-based interventions in stimulating children's social engagement with ASD, paving the way for a better understanding of this approach in the context of Education. The results of the analysis of the included studies provide a clear picture that peer-based interventions can help children with ASD develop their social skills. The importance of a standardized, focused approach to common interests, adult support and positive feeding to peer coaches, as well as adult monitoring. These conclusions provide impetus to develop peer-based interventions as an integral part of educational programs and early interventions for children with ASD. Continuing to apply these findings in clinical practice and educational contexts can have a

significant positive impact on the social development of children with ASD, opening the door to better inclusion and more active participation in their surrounding environment.

There needs to be more research in the future so that this peer intervention can increase the social interaction of autistic children more effectively and efficiently. And includes the development of more specific interventions and broader research to explore different aspects of interest-based interventions to improve their understanding and effectiveness in supporting children with ASD.

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