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## A REVIEW ON SOCIAL INTERACTION INTERVENTION AMONG AUTISM SPECTRUM DISORDER CHILDREN: THE BENEFITS AND PARENTS INVOLVEMENT

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### **ABSTRACT:**

One of the key features of children or individuals with Autism Spectrum Disorder (ASD) is inadequate social skills in which it is necessary for an individual to lead a normal and healthy life. The reason for the inadequate social interaction or skills is a lack of social cognition. Various interventions have been used to improve their condition, such as social story, structured physical activity program, peer-mediated intervention, and many more. Interventions are usually done by professionals, such as occupational therapists in a clinical setting. However, studies have shown that parents can also be involved in the interventions to help improve children's social interactions and skills with ASD. Thus, this study aims to highlight intervention used for social interaction, its benefit and parents' involvement in social interaction intervention among children with ASD. Based on the review, it is found that with an adequate social interaction intervention from an early age, children might be able to alter their early experience involving learning experience and improving their developmental progress. Other than that, with the involvement of parents in the intervention, children's behavior might improve as well as it can reduced parenting stress due to the improved behavior.

### **INTRODUCTION**

Most children with Autism Spectrum Disorder (ASD) have a problem with social interaction, in which they usually show inadequate social skills when interacted with peers (DiSalvo & Oswald, 2002). This is a critical feature for an individual with ASD. Social skills are necessary for children or an individual to lead a normal and healthy life. However, this ability is not present in children with ASD. The deficit of social interaction and communication stems from a lack of social cognition (Keifer et al., 2020). According to Hunt, Borgida, Lavine (2012, p. 456), social cognition is a scientific approach to social psychology devoted to studying how people process and react to social information. When individuals with Autism have a vast difference in terms of social communications, goals, and expectations with an average individual, this will lead to a poor interpersonal

experience, thus causing normal individuals to have difficulties understanding and communicating with them. Therefore, intervention to help improve their social interaction and skills is needed to help them communicate and develop a better personal relationship with others while growing up.

There is various intervention to fix social interaction problems among children or individual with ASD. Some of the interventions include a social story (Kara & Wolfe, 2018), Group Cognitive Behaviour Therapy (CBT) (Spain, Blainey & Vaillancourt, 2017), structured physical activity program (Zhao & Chen, 2017), peer-mediated intervention (Rodríguez-Medina et al., 2016) and many more. Interventions and programs to help improve these conditions are proven to increase their skills and knowledge. However, little study has been done to identify the extent of the effects of social interaction and skills interventions and programs on children and individuals with ASD (Morrison et al., 2020). There is also a lack of studies that focus on parents' involvement in the intervention of social interaction among children or individuals with ASD and what kind of interaction that parents can do to improve their child's social interaction and skills. Thus, this study highlights these components by reviewing the studies focusing on social interaction and skills intervention among children and individuals with ASD.

### **AUTISM SPECTRUM DISORDER**

Global statistics shown 1 out of 54 children have been diagnosed with Autism Spectrum Disorder (ASD) worldwide, which shows that the number of children diagnosed with ASD is increasing consistently since the year 2002. According to the Centers for Disease Control and Prevention (2020), ASD is more common among boys (3.0%) than girls (0.7%), and it is reported to affect all racial and ethnic groups worldwide. Based on the statistics, it would mean that approximately around 9000 children in Malaysia are born with Autism every year.

As stated by Lord et al. (2018), ASD refers to a category of complex neurodevelopment disorders marked by repeated and repetitive forms of actions and issues with social communication and interaction. It is a condition that can be characterized based on some problems among children, such as social communication problems, lack of social interactions, and an unusual pattern of repetitive actions or behavior (American Psychiatric Association, 2013). For ASD individuals, they are most comfortable being in a predictable environment while they might show forms of stress and anxiety when an unpredictable or complex situation occurs (Qureshi et al. 2020). Thus, these individuals are particularly at risk and vulnerable to the changes of environment or situation due to their characteristics in which they are unable to deal with the unexpected (Colizzi et al., 2020).

Although ASD individuals' symptoms are identified based on their lack of social communication and repetitive behavior, the social communication aspect becomes the most concerning thing. This is because social communication is closely related to their developmental changes, academic performance, behavioral problems, and the ability to form relationships with others (Fuller & Kaiser, 2019). Due to the lack of social communication or interaction, ASD individuals might have problems in all the areas mentioned before, making it difficult for them to adapt to other normal individuals and excel in their adult lives. This is the reason why intervention should take place at the earliest age possible.

Intervention is more effective when started early because therapists might be able to alter their early experience involving learning experience and improving their developmental progress (Bradshaw et al., 2015). When given intervention at an early age, impairments associated with ASD might even be prevented (Dawson, 2008). There are various empirical studies investigating the benefits of early intervention which shows a critical need on developing an effective early intervention methods or approach to increase the chances of preventing serious impairments among ASD children. In contrast, if they did not receive interventions at the right time or failed to receive any interventions, they will be most likely to show more intense behaviour problems, which will hinder their daily lives. It is reported that most families with ASD children experience more stress than families without any ASD children or disabilities (Seltzer & Krauss, 2001). Social interaction or communication skills specifically need to be addressed early to avoid ASD children showing behavioral problems while growing up and eases the interaction between them and other normal individuals.

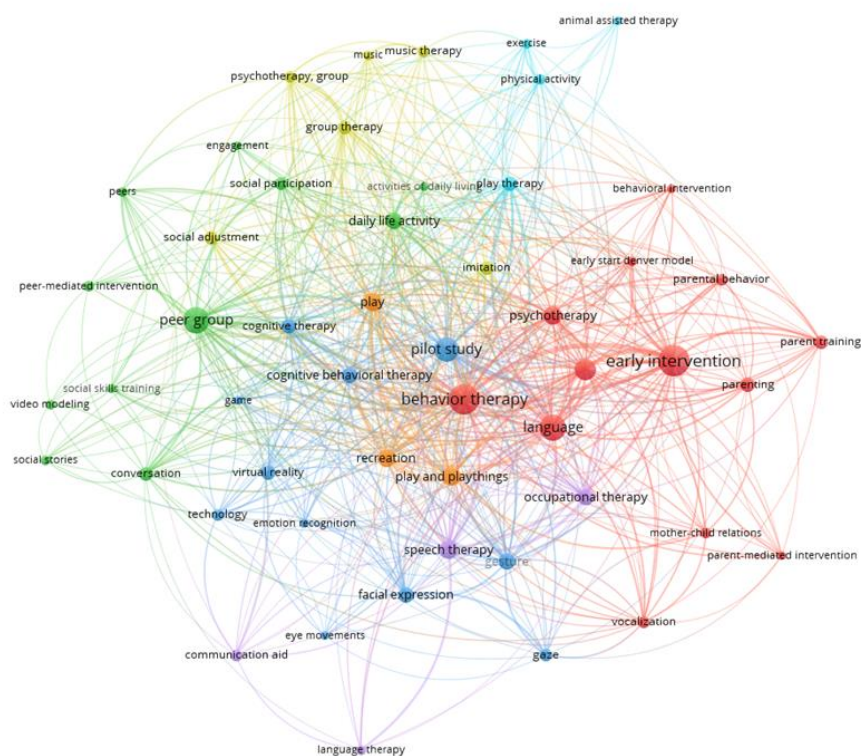
**INTERVENTION FOR SOCIAL INTERACTION**

Social interaction skills are the most concerning symptoms among ASD children. There is various intervention used to address this issue as it can be a problem for the child while growing up if it is not improved since early age. Table 1 shows the example of some intervention used for social interaction based on articles published since 2010 identified from Scopus database.

**Table 1.** Example of some intervention used for social interaction based on articles published since 2010

<b>Types of Intervention</b>	<b>Intervention Provider</b>
Behaviour Therapy	Behavioural Therapist
Behavioral Intervention	
Early Start Denver Model	
Early Intervention	Occupational Therapist
Language	Speech Therapist
Vocalization	
Parent Training	Parents and Occupational Therapist
Parent Mediated Intervention	
Parental Behaviour	
Psychotherapy	Psychiatrists, Psychologists

Table 1 shows the example of some intervention used for social interaction skills based on articles published since 2010. There are also some other articles which uses technology based intervention such as games (Whyte, Smyth & Scherf, 2015 ), robots (van Otterdijk et al., 2020; De Korte et al., 2020), Virtual Technology (Ke & Im, 2013; Ke, Moon & Sokolikj, 2020) and many more.



**Figure 1** Network visualization map of author keywords based on intervention used for social interaction among ASD individuals

**Source:** processed data

Analysis of author keywords in intervention used for social interaction among ASD individuals indicated that early intervention (175 occurrences), behaviour therapy (164 occurrences), and peer group (126 occurrences) were the most frequent intervention used for social interaction among ASD individuals (Fig. 1). The literature on social interaction among ASD individuals included 1,979 documents that discussed all types and approaches of intervention used to improve social interaction skills.

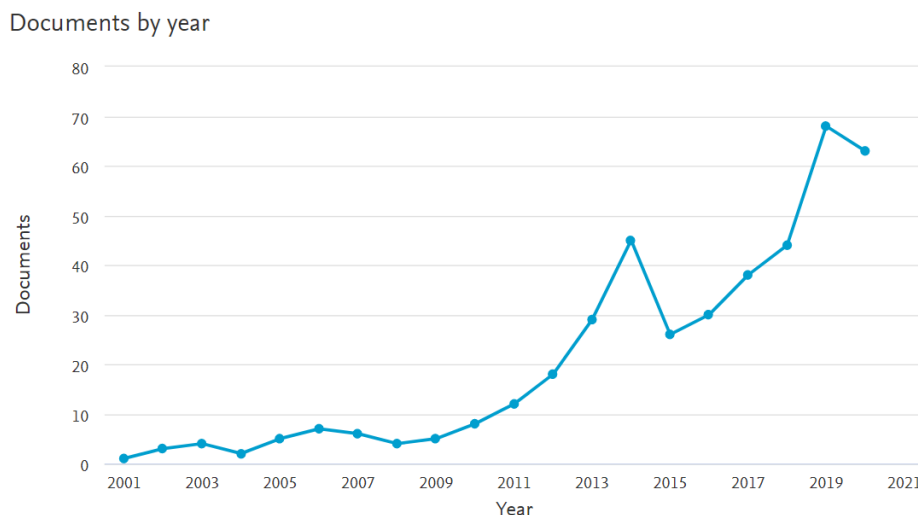
A various study has investigated the effect of social interaction intervention in improving the condition of ASD children or individuals. A study by Schiltz et al. (2018) identifies that by undergoing the PEERS® social skills intervention, adolescents with ASD have shown a positive change in terms of depressive symptoms after a few series of interventions. This is since almost 54% of those who have ASD have depressive symptoms, which stems from their inability to communicate and interact socially. Another empirical study conducted by Healy et al. (2018), which investigates the effects of physical activity interventions on social functioning skills between experimental and control groups, found that the experimental group outperformed the control group in terms of their social functioning skills. The experimental group shows an improved social interaction after the intervention. Thus, confirming that with intervention, social interaction skills can be improved. However, the intervention should be continuously provided to them from an early age.

Some studies identified that a parent-child interaction during the intervention might help prevent the child from developing a more disruptive severe behavior (Colizzi et al., 2020). Parents' involvement in the intervention of their Autistic

children has long been accepted and proven to be helpful. A study by Mahoney and Perales (2003) indicates that there is a significant improvement in children's social interaction through the mother's interaction with their children. Due to the upgrades of children's social interaction, their behavior also can be improved, and their autistic symptoms might also be reduced. These improvements will lead to less parenting stress, which is supported by Tarver et al. (2019), which indicates that improved behavior and decreased autistic symptoms are the reason why parenting stress can be reduced. However, more research should be done to further identify the effect of parent involvement during intervention especially in social interaction intervention.

**RESEARCH TRENDS ON PARENTS INVOLVEMENT IN SOCIAL INTERACTION INTERVENTION**

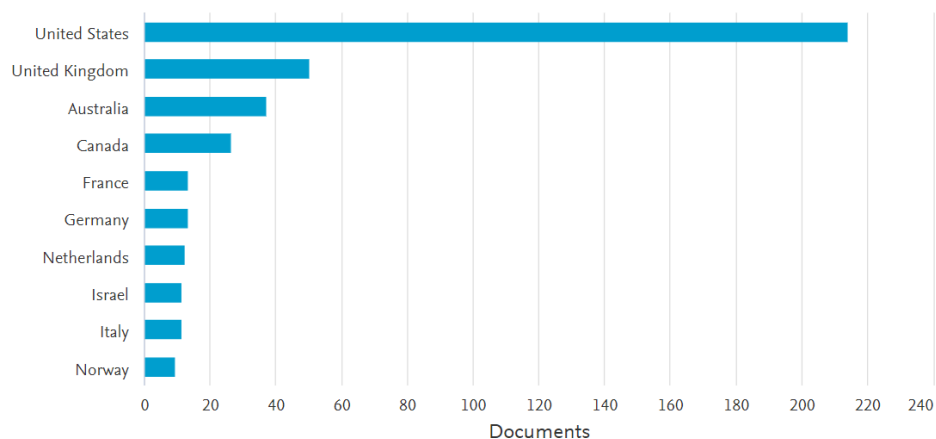
Parents' involvement in the intervention program for ASD children and individuals are receiving more interest due to its effectiveness to improve the condition of ASD children as well as reducing parenting stress. This section highlights the research trends on parents' involvement in social interaction intervention throughout the year since 2001 until recent. Figure 2 shows the publication trends as identified on Scopus database.



**Figure 2** Publication trends as identified on Scopus database  
**Source:** Scopus Database

Figure 1 shows the publication trends as identified on Scopus database based on the keywords search; (Social Interaction) AND (Intervention) AND (Parents Involvement) AND (Autism OR Autism Spectrum Disorder). The trends as illustrated shows an increasing trend where the publication increased from 2008 onwards. This shows that researcher gained more interest on studying the effectiveness of parent-mediated intervention towards social interaction skills of ASD individuals. Figure 3 shows the number of publications based on country or territory.

Documents by country or territory  
Compare the document counts for up to 15 countries/territories.



**Figure 3** Number of publications based on country or territory  
**Source:** Scopus Database

Based on the graph illustrated in figure 3, it is shown that the majority of the publication related to this field are conducted in the United States, followed by the United Kingdom and Australia. However, the differences are enormous between the United States and the United Kingdom. This finding might be due to the high Autism rates in the United States, which are said to spark “fears” of an Autism epidemic among the citizens (Wright, 2017). Due to the increase of Autism rates, awareness of autism is increasing, and routine health assessments are conducted early for the children there, where there will be an assessment conducted by the trained clinicians every two years. The percentage of awareness among young adults in the United States also indicates a moderately high rate (63%), which might be the reason for the findings in figure 3.

Another study by Yu, Stronach, and Harrison (2020) compares Autism awareness between the United States and China. According to the study, “Autism spectrum disorder in China differs considerably from autism spectrum disorder in the West in terms of prevalence estimates, education opportunities, and life outcomes of autistic people” (Yu, Stronach & Harrison, 2020). The authors indicate that this is why their study's findings showed a considerable difference in Autism awareness between both countries. Another reason for the differences might be the differences in Autism prevalence in the United States and China, where 1 out of 59 children in the United States are affected by ASD, while 1 out of 225 children in China is affected by ASD (Baio et al., 2018). Due to a high autism prevalence, individuals especially parents will be more likely to enhance their knowledge on Autism Spectrum Disorder compared to the country with low Autism prevalence. The results on figure 3 might indicate a vast knowledge gap between the countries, which should be addressed and overcome.

A keyword search was done on the Scopus database on the following search string to find the most cited articles related to this study. The search string used to get the most cited papers are; TITLE-ABS-KEY ( ( parents ) AND ( intervention ) AND ( social AND interaction ) AND ( autism ) AND ( autism AND spectrum AND disorder ) ). Table 2 shows the five most cited articles on the Scopus database in this field based on the keywords search results.

**Table 1.** Example of some intervention used for social interaction based on articles published since 2010

No.	Title	Year	No. of Citation
1	Evidence-based social skills training for adolescents with autism spectrum disorders: The UCLA PEERS program	2012	170
2	Parent-mediated social communication therapy for young children with autism (PACT): long-term follow-up of a randomised controlled trial	2016	151
3	Parent-implemented social intervention for toddlers with autism: An RCT	2003	140
4	Using relationship-focused intervention to enhance the social-emotional functioning of young children with autism spectrum disorders	2003	129
5	The effects of a parent-focused intervention for children with a recent diagnosis of autism spectrum disorder on parenting stress and competence	2010	127

According to table 2, the top-cited articles are from the year 2012 with a citation count of 170. The articles discussed the efficacy and durability of the PEERS Program, a parent-assisted social skills group intervention for high-functioning adolescents with ASD (Laugeson et al., 2012). Based on the result of the study, the teacher recorded improvements, which indicates a positive effect on parents' involvement during the intervention. An increase in peer interaction frequency was observed among the participants, while the autistic features decreased. Other than that, the second most cited articles (151 citation count) identified in this study discussed the effect of the Parent-mediated social communication therapy for young children with autism (PACT) whether or not it had a long term effect on the parent – child social interaction (Pickles et al., 2016). This finding for this study indicates that the intervention showed a long-term reduction in the Autistic symptoms, which implicates the intervention's positive results.

The third most cited article identified in this study is an article by Wetherby et al. (2014), which discussed the effects of two 9-month parent-implemented interventions within the Early Social Interaction (ESI) Project. It is then followed by an article by Mahoney and Perales (2003) that studies the relationship-focused intervention's effectiveness. This approach encourages parents to do routine interactions with their children towards children's social and emotional well-being with autism spectrum disorders. The fifth most cited articles are a study by Keen et al. (2010), which identified the effects of a parent-focused intervention towards parenting stress and competency. The findings of this study indicate reduced parenting stress as well as increased parenting competency after the intervention. The children also showed positive adaptive behavior as a result of the approach.

## CONCLUSION

Children affected by Autism Spectrum Disorder are usually identified by their inadequate social interaction and communication skills and repetitive behavior. However, the most concerning aspects among them that have a considerable contribution towards their growing up experience are social interaction skills. Learning to communicate and interact effectively with normal individuals could improve academic performance, behavior, and ability to have a good relationship

with others. By implementing intervention at an early age, they will be most likely to live an everyday life when they become adults and reduce their autistic symptoms. Involving parents in the intervention is also one of the options to improve their social interaction skills and improve the emotional well-being of the parents themselves. This is because autistic children are not good with unexpected environment or situation. When parents who are familiar with them are involved during the intervention, a comfortable environment can be provided, enhancing the effectiveness of the intervention itself. There is also an increasing trend towards investigating the effectiveness of parents' involvement during the intervention for social interaction skills among ASD children or individuals. In the future, researcher should investigate on the most effective approach to involve parents in the social interaction intervention for ASD children or individuals as well as develop a framework to help clinicians or therapist to create an effective intervention program to improve social interaction skills. This is to ensure that the future of ASD children can be improved and to help them live a normal life as an adult.

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