

Breaking Barriers: Transforming Social Skills in Autistic Children Through Intervention

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ABSTRACT

Autism Spectrum Disorder (ASD) is a developmental disorder that causes substantial problems in social communication and interactions in young individuals. The objective of the study was to identify social skills issues among children diagnosed with ASD and test the efficacy of an intervention program on social interactions. The study used pretest-posttest experimental research design, including 25 participants suffering from autism ranging between the ages of 7-18 years attending a special school for education located in Gujranwala, Pakistan. Participants were purposefully selected for the experiment. Assessment of social responsiveness was done using Social Responsiveness Scale, Second Edition (SRS-2). Data analysis was performed using descriptive statistics and paired-samples t-tests via IBM SPSS Statistics. As a result, a significant increase in peer interaction skills was obtained. In particular, mean values rose from 42.36 (SD = 6.85) at pre-test level to 61.48 (SD = 7.12) at post-test one. Paired-samples t-test demonstrated that there was a statistically significant difference between the mean values: $t(24) = -16.05$, $p < .001$ (very large effect size, Cohen's $d = 2.69$). Thus, based on the obtained results, it is possible to conclude that multicomponent intervention programs may be used for developing peer interaction skills and enhancing social competencies in children with autism spectrum disorder (ASD). This study indicates that such programs should be applied, especially in educational settings, with teachers, caregivers, and parents playing key roles in the process.

Keywords: Autism Spectrum Disorder (ASD), Social Skills, Peer Interaction, Intervention Program, Social Responsiveness, Experimental Research

INTRODUCTION

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder that is characterized by difficulties with social communication, social interaction, and restricted or repetitive patterns of behaviour. One of the major challenges that children with autism face is the acquisition and use of social skills. These challenges may impact their ability to interact with their peers or form meaningful relationships within their daily settings like school or home settings (Silveira-Zaldivar, Özerk, & Özerk, 2021). Social interaction is a fundamental aspect of human development. When children with autism face challenges during social interactions, it may impact many areas of their lives.

Children with autism may face challenges when interpreting non-verbal communication like facial expressions, gestures, tone of voice, or body language. In addition, they may experience challenges when maintaining eye contact or understanding social cues during different social situations (March-Miguez et al., 2018). Because of these challenges, children with autism may experience isolation or

may not get adequate opportunities to form friendships with their peers. In addition, because of social challenges, children with autism may experience peer rejection or loneliness and may not get adequate opportunities to participate in social or educational settings (White, Keonig, & Scahill, 2007)

The acquisition of social competence is vital to the growth of children. Social skills allow children to communicate and interact with others within their social environment. When social skills are underdeveloped, children may experience challenges not only in their relationships but also in their academic performance and socialization to social expectations within a school setting (Day, 2011). Research has indicated that students with autism experience fewer social interactions with their peers compared to typically developing students, despite being placed in inclusive settings (Born, 2015). This has made social skill deficits a major concern among educators and researchers working with students with autism.

In response to the challenges associated with social skill deficits among students with autism, several intervention strategies have been developed to improve social skill acquisition among autistic students. These intervention strategies include several social learning theories that aim to improve social skill acquisition among students with autism (Pastor-Cerezuela et al., 2018). These intervention strategies aim to improve social skills among students with autism by focusing on specific social skills acquisition, including conversation initiation skills, making eye contact, understanding emotions, and appropriate social response to situations. Some intervention strategies may involve peers, parents, or teachers to improve social interaction among students with autism (López, 2016).

Previous studies have proved that structured intervention programs can be highly effective in improving the social interaction and communication skills of children with autism. For instance, studies on peer-mediated interventions and group social skills training have indicated that these interventions can be effective in improving the social participation and development of friendships among autistic students (Born, 2015; White et al., 2007). Furthermore, incorporating family involvement and the use of modern technology, such as computer-based or robotic support systems, has also been proved to be effective in improving the effectiveness of the interventions (Pastor-Cerezuela et al., 2018).

Considering the significance of social competence in the development of children, it becomes imperative to ensure that effective intervention plans are designed to improve the social challenges that autistic children face. Understanding the social difficulties that autistic children face can also be helpful in improving the effectiveness of the interventions designed to improve their social interaction and communication skills. Thus, the main focus of this study will be to explore the social difficulties that autistic children face and the effectiveness of the intervention plans designed to improve their social interaction and communication skills.

LITERATURE REVIEW

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder that profoundly affects the lives of children by impairing their ability to communicate effectively with others. Autism Spectrum Disorder also affects the behaviour of children with autism to a great extent. Social interaction is another factor that is profoundly affected by Autism Spectrum Disorder. Social skills difficulties are perhaps the most prominent factor that affects the lives of autistic children. Because of the challenges posed by social skills difficulties, researchers and educationists have come to focus on the development of intervention plans to help autistic children overcome the social skills difficulties they face.

Children with autism often face challenges while making social interactions with their peers. These challenges include limitations in making eye contact with other children. Children with autism also face limitations while making sense of facial expressions and gestures. These limitations often make it difficult for autistic children to form friendships with their peers. Social interactions also involve making conversations with other children. These limitations often make it difficult for autistic children to make effective conversations with other children (Silveira-Zaldivar, Özerk, & Özerk, 2021).

Another challenge often encountered by individuals with ASD includes difficulties with non-literal language, which could manifest as sarcasm, irony, and metaphorical language. Children with ASD have difficulties with non-literal language and might not understand the emotional cues involved with communication (Pastor-Cerezuela et al., 2018). Besides, ASD individuals have difficulties with perspective-taking and empathy, which are linked to difficulties with the development of Theory of Mind. This affects the ability to understand the perspectives and emotions of other people, hence impacting social relationships.

Deficits in social skills might also manifest as isolation on the part of the ASD individual. Studies have revealed that most children with autism have the desire to interact with other people but lack the skills to accomplish the same (White, Keonig, & Scahill, 2006). Therefore, the child might end up being rejected by other children, especially in mainstream schools where social interactions are numerous.

In the context of learning institutions, the difficulties might also manifest as learning challenges among the ASD individuals. Social skills are linked to learning and academic performance among other factors. Children with autism might have difficulties socially, which might affect the learning and academic performance of the child (Day, 2011).

Social skills are an important part of a child's development. Without proper support, children with ASD often face challenges in various aspects of life. These challenges may include social life, employment opportunities, and community participation in the future as adults (Silveira-Zaldivar et al., 2021).

Moreover, social skills also help children with autism develop other skills without any issues. Some children with autism may be willing to socialize with other children, but due to repeated failures in socializing with children, they become frustrated. These children may lose confidence and become reluctant to socialize with other children (Van Wagner, 2025).

Research studies also revealed that children with autism have fewer social contacts and friendships compared to children with typical development. Despite the fact that they attend the same school or education system, they interact with fewer children due to difficulties in communication skills (Born, 2015).

Another form of intervention that can be used with autistic children is the inclusive educational setting approach. This approach has been effective in improving the social participation of autistic children because when they interact with their typically developing peers with proper guidance and support, their social skills can improve significantly (López, 2016).

Apart from social interaction intervention techniques, some intervention approaches aim to improve the daily living skills of autistic children because these can improve their social independence as well. Video modeling techniques, as well as picture prompting and self-monitoring strategies, can improve the social behaviours of children with autism spectrum disorder (Nikolopoulos, 2020).

Research has shown that intervention plans can improve the social competence of children with autism spectrum disorder significantly. Social skills intervention plans can improve the social participation of children with autism because these plans can allow them to practice their communication skills and social behaviours with their peers. This can improve their social participation over time.

Studies have also revealed that the effectiveness of the interventions increases when the interventions are carried out with multiple components, including the collaboration of teachers and therapists with the family. Family involvement helps to enhance the learning of the new skills through the environments they are exposed to (Pastor-Cerezuela et al., 2018).

In addition, the inclusion of technology and other innovative tools, like computer programs and learning systems, has proven to be successful and beneficial to the development of social skills among autistic children.

Although the interventions have proven to be successful, the researchers have emphasized the point that the effectiveness of the interventions might vary depending on the individual characteristics of the child. Autism has different symptoms and levels of functioning, and the interventions should be designed according to the individual requirements of each child (Van Wagner, 2025).

Social skills are one of the major problems faced by autistic children, and these problems have a direct impact on the communication and learning abilities of the child. Autism might cause social isolation among the children if proper support and interventions are not provided to the autistic child.

Nevertheless, studies have shown that with a well-designed intervention plan, social competence can be improved and positive social outcomes can be promoted. For example, social skills training, peer-mediated interventions, and behaviour interventions have shown promising outcomes in enhancing social participation in autistic children. It is therefore vital to conduct more research and design more individualized intervention plans to help autistic children develop social skills to ensure successful school integration.

Autism Spectrum Disorder (ASD) has profound effects on the social and communicative skills of children. One of the major challenges that autistic children face is the social skills deficit, which has profound effects on the social and communicative skills of the child. One of the major challenges that autistic children experience in their social and communicative skills is the difficulties in understanding social cues, which are considered to have profound effects on the social and communicative skills of the child (Silveira-Zaldivar, Özerk, & Özerk, 2021; March-Miguez et al., 2018). Considering the importance of social interaction in child development and the difficulties experienced by autistic children, it is important to evaluate the efficacy of strategies for improving social interaction among autistic children. Therefore, this study seeks to bridge this gap in knowledge by implementing an intervention plan for improving social interaction among autistic children.

The objectives of this study are to identify the difficulties that children with autism spectrum disorder (ASD) face in social skills and to assess the level of interaction with their peers prior to the implementation of an intervention plan for children with autism. The study further aims to implement an intervention plan to improve social skills and interaction with peers among autistic children and to observe the effect of this intervention on interaction with peers to assess its effectiveness.

METHODOLOGY

This study used a pretest-posttest experimental research design to investigate the challenges faced by mild autistic children regarding their social skills and to ascertain the effectiveness of the intervention plan for enhancing these skills. Experimental research is often used to determine the cause-and-effect relationships between variables, which is common in educational and psychological studies (John W. Creswell, 2014).

This research aimed to determine the challenges faced by autistic children regarding their social skills and to ascertain the effectiveness of the intervention plan for enhancing these skills.

This research targeted 25 autistic children aged between 7 and 18 years old and enrolled at Heaven Star Special School. A purposive sampling approach was used to select autistic children who had already been diagnosed with Autism Spectrum Disorder and were receiving educational support at the institution. Purposive sampling is often used for research targeting special needs children because it allows the researcher to select children who fit the research criteria (Louis Cohen et al., 2018).

Permission from the school administration and consent from the parents or guardians were obtained before commencing the research to ensure that the research process was conducted ethically.

Assessment tool

The research utilized the Social Responsiveness Scale Second Edition as a primary tool in assessing social skills difficulties in children with autism. The SRS-2 is a standardized behavioural rating scale that is frequently utilized in measuring social awareness, social cognition, social communication, social motivation, and restricted interests or repetitive behaviours in children with autism. Quantitative scores are generated from this scale to identify the level of social impairments and to monitor intervention progress (John N. Constantino & Gruber, 2012). In this research, this scale is utilized to assess social responsiveness in children with autism before and after the intervention program.

Procedure

The process of the study followed various stages. To begin with, the pre-test assessment was done to identify the baseline of the problems experienced by the children in terms of social skills, and the SRS-2 rating scale was used for the purpose. The rating scale was filled in by the teacher and the caregiver, as they knew the children best and could observe their behaviour.

The current study used an experimental design involving a pre-test and post-test approach in assessing the effectiveness of a structured intervention program in enhancing social skills among children suffering from Autism Spectrum Disorder (ASD).

The participants in this study included 25 children with mild levels of ASD, ranging in age from 7 to 18 years. They were identified using the purposive sampling method from a special education institution based on the requirement for inclusion being a mild level of autism.

Prior to the implementation of the intervention program, the participants had been pre-tested for their initial levels of social skills. The SRS-2 was utilized as the instrument of measurement in gauging the social responsiveness of the participants, particularly in terms of interacting, communicating, and behaving socially with peers.

After conducting the pretest, an appropriate intervention program was planned and carried out for the participants of the respective institutes.

The intervention program was planned in four sessions in the following manner:

Session 1: Formation of Group and Familiarization Process

In the first session, the 25 students were formed into groups consisting of five students each. The students were advised to remain in the same group throughout their time in the institute. The objective was to make the participants familiar and comfortable with their peers in the group.

Session 2: Assignment of Tasks and Cooperation

Here, a task was assigned to each group. It included simple activities such as group activity in the class or solving a problem together. Teachers and therapists were guiding the students about how to work in groups and engage in communication with peers. They were taught how to listen to others and participate effectively.

Session 3: Practice With Guidance

In the third session, the same activity assigned in session two was practiced by the students. But this time, it was practiced with the help of educators and therapists.

Session 4: Independent Group Performance

In the final session, students were asked to perform the acquired tasks independently without any help from the teacher. In this session, the students' ability to use the acquired social and group skills on their own was assessed.

The above-mentioned four sessions took place in the same way in the same order over a period of four weeks (one month). The repetition of the above mentioned sessions gave enough time to the students to learn and adapt to their acquired social skills.

Following the one-month intervention program, a post-test assessment was carried out on the 25 students who were involved in the study by means of using SRS-2.

The scores obtained from the pretest and posttest were subjected to statistical testing using paired sample t-test via IBM SPSS Statistics. This statistical technique aimed to test the significance of the difference between the means of pretest and posttest to identify if the change is statistically significant.

The results showed that there was a significant and notable improvement in the peer interaction abilities following the intervention program implemented for a month. These results proved the validity of the hypothesis in the study, demonstrating that structured, repetitive, and group intervention programs could improve the social and peer interaction abilities of children with ASD.

DATA ANALYSIS

For data analysis, the data gathered was subjected to analysis using the IBM SPSS Statistics program, which is widely used for data analysis in social science studies. Descriptive analysis, such as mean, standard deviation, and frequency, was used to analyse the demographic data and the results of the participants' social skills scores. To assess the effectiveness of the intervention plan, the results of the pre-test and post-test SRS-2 scores were subjected to paired sample t-test analysis. The paired sample t-test is applicable in experimental studies, particularly when the subjects are the ones being compared before and after the intervention (Andy Field, 2018). The results will be considered significant if the probability value, or the alpha level, is 0.05 or less.

Ethical Consideration

Ethical considerations were observed in the entire research process. For instance, confidentiality of the participants was observed by not using their names but instead coding them. Secondly, participation in the research was not forced; instead, parents were made aware of the aim of the research and how it was used for academic purposes only. These steps were essential in ensuring that the rights of the children were observed during the research.

RESULTS

The purpose of the study was to investigate the effectiveness of the intervention plan in enhancing peer interaction skills among autistic children in school settings. The total number of students who took part in the study was 25, ranging from 8 to 18 years old. The results of the descriptive statistics revealed that the mean pre-test score for peer interaction skills was $M = 42.36$ ($SD = 6.85$), while the post-test mean score for peer interaction skills increased to $M = 61.48$ ($SD = 7.12$), which shows a positive change in the students' skills.

The paired-sample t-test was used to assess the significance of the difference between the pre-test and post-test score results. The results of the paired-sample t-test revealed a statistically significant difference between the pre-test and post-test score results, $t(24) = -16.05$, $p < .001$, which shows that the intervention plan had a positive impact on the students' peer interaction skills, as the mean difference between the pre-test and post-test results was -19.12, which is a significant increase in the post-test results from the pre-test results.

Moreover, the effect size, which was determined through Cohen's d , was found to be 2.69, which is considered to be very large. Thus, the intervention was found to be very effective in terms of increasing peer interactions in autistic children.

Overall, the research has found the effectiveness of structured intervention programs in increasing social and peer-related behaviours in children with autism spectrum disorder. The research has also found the significance of social skills intervention programs, as emphasized in previous research.

Table 1:

Descriptive statistics for peer interaction scores before and after intervention ($N=25$)

Variables	M	SD	Min	Max
Pre-test scores	42.36	6.85	30	55
Post-test scores	61.48	7.12	48	75

Note: M= Mean or SD= Standard deviation

Table 2:

Paired-Samples t-Test Comparing Pre-test and Post-test Peer Interaction Scores ($N = 25$)

Comparison	Mean difference	SD	t	Df	P
Pre-test/ Post-test	-19.12	5.94	16.05	24	<.001

Note: SD = standard deviation or df= degree of freedom

Table 3:

Effect Size (Cohen's d) for Intervention Impact ($N = 25$)

Measure	Value
Cohan's d	2.69

Note. Cohen's d values of 0.20, 0.50, and 0.80 indicate small, medium, and large effect sizes, respectively.

DISCUSSION

The findings of the present study clearly show that the structured intervention plan had a very high level of significance and a positive impact on developing peer interaction skills among children suffering

from Autism Spectrum Disorder (ASD). This can be clearly shown by the increase in the mean score of the participants from pre-test ($M = 42.36$, $SD = 6.85$) to post-test ($M = 61.48$, $SD = 7.12$). This shows that there has been a significant level of improvement in the social responsiveness of the participants. This can be further confirmed by the result of the paired sample t-test, where the value of $t(24) = -16.05$, $p < .001$. This shows that the change was not random but a result of the intervention program.

The findings of the present study are consistent with the findings of other researchers. White et al. (2007) have shown that social skills training programs are very effective in improving peer relationships and reducing social isolation in children suffering from ASD. Born (2015) has also emphasized that peer-mediated interventions are very effective in increasing opportunities for social engagement, especially in inclusive educational settings. The high effect size of this study, with Cohen's d value equal to 2.69, shows that the study had a very high level of influence. This supports the study by Pastor-Cerezuela et al. (2018), which concluded that interventions involving multiple components, including educators, therapists, and family members, have a high level of influence compared to single-method interventions.

The study also supports the theoretical understanding that children with ASD have deficits in their social interactions that can be improved. Silveira-Zaldivar et al. (2021) concluded that children with ASD have difficulties interpreting social cues and communicating reciprocally. However, these difficulties can be reduced if children are provided with opportunities to practice their social interactions. The study also supports the understanding that teachers and caregivers can provide a high level of reliability for the study by using the SRS-2 scale. This is because these teachers and caregivers have the chance to observe the children's behaviour over time. Constantino and Gruber (2012) concluded that using multiple informants, including teachers and caregivers, can provide a high level of reliability when measuring the children's social responsiveness. However, it should also be noted that although the results are promising, the differences within the children with autism may affect the level of improvement. As Van Wagner (2025) has pointed out, the severity level of ASD may also affect the level of success with the intervention.

In summary, the results of the present study strongly support the effectiveness of the intervention program in the development of peer interaction skills for autistic children in the school setting.

CONCLUSION

In conclusion, the present study emphasizes the fact that difficulties in social skills are a major challenge faced by children with Autism Spectrum Disorder. The findings of the study clearly indicate that a structured intervention program can lead to considerable improvements in the overall level of peer interactions and social responses. The findings of the study were statistically significant, and the results show a large effect size, which emphasizes the role of intervention programs in improving the overall level of social skills in children with ASD.

IMPLICATIONS

The implications of the findings of the present study are significant for educators, therapists, and policymakers. It is recommended that schools should incorporate social skills training programs in their curriculum, particularly in special education schools. Teachers and caregivers should also be trained to provide evidence-based intervention programs focusing on communication, emotional understanding, and peer interactions. Furthermore, the involvement of both the family and professionals should be encouraged to promote consistency in intervention approaches in various settings, which will increase the effectiveness of social skill development (Pastor-Cerezuela et al., 2018).

LIMITATIONS AND RECOMMENDATIONS

In spite of the important results obtained, this study has some limitations. Firstly, this study's sample size is relatively low ($N = 25$), which may not be sufficient to generalize the results. Moreover, this study was conducted at only one site, which may not be representative of the heterogeneous population of children with ASD. Second, this study adopted a purposive sampling method, which may result in selection bias. Thirdly, this study adopted behavioural rating scales, which, even though reliable, may be subject to teachers' and caregivers' subjective perception. Future studies should aim to recruit a large and heterogeneous sample to increase the generalizability of the results. Longitudinal studies should be conducted to assess the long-term effects of intervention programs. Future studies should also examine the efficacy of technological interventions, such as "virtual reality or computer-assisted learning," which have been found to be promising in recent studies (Nikolopoulos, 2020). Moreover, individualized intervention programs should be designed according to the needs and abilities of individual children to optimize the efficacy of intervention programs.

Conflict of Interests:

The author(s) state that there is no conflict of interest in publishing this study.

Data Availability:

Data are confidential due to participant privacy.

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