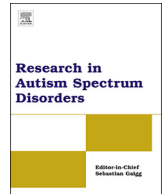




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Using common interests to increase socialization between children with autism and their peers

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ABSTRACT

Background: The social deficits associated with autism spectrum disorder (ASD) are considered important targets for intervention due to their influence on long-term outcomes. In the present study, we assessed whether identifying and incorporating common interests of children with ASD and their typically developing peers would result in increases in social engagement and initiations.

Method: Three children diagnosed with ASD were paired with three typically developing peers for the study. A separate multiple stimulus without replacement (MSWO) preference assessment was conducted for the child with ASD and the peer during the treatment to match interests. Data were collected on social engagement and initiations. A concurrent multiple probe design across participants was used to evaluate the effectiveness of the treatment.

Results: Results showed that the intervention produced rapid increases in social engagement and initiations for all participants, without any direct social skill training. These results were also maintained during the follow-up session. Two out of the three participants showed generalization of skills to the natural environment wherein common interests were not incorporated.

Conclusions: Our findings suggest that environmental manipulations in the form of incorporating choices of stimuli can increase socialization and generalization of skills. The treatment was effective at increasing social engagement without any intensive prompting for the participants of the study.

1. Introduction

The skill deficits observed in developing social relationships is a defining feature of Autism Spectrum Disorders (ASD; Reeve, Reeve, Townsend, & Poulson, 2007). Deficits in social engagement may occur either because a skill has not been learned and the requisite behaviors are not in the child's repertoire, or because a motivation deficit results in the child not using the skills that have been acquired (Gresham, 1995; Kavale & Mostert, 2004; Koegel & Egel, 1979; Krantz & McClannahan, 1998; Pierce & Schreibman, 1995). The tremendous increase in the number of individuals being diagnosed with ASD across the world (Centers for Disease Control and Prevention, 2009) gives rise to the need for social interventions that target interaction with peers.

While addressing a skill deficit, ABA-based intervention programs focus on using instructions, prompting, modeling, and script-fading (Charlop & Milstein, 1989; Hagopian, Kuhn, & Strother, 2009; Sarokoff, Taylor, & Poulson, 2001). Some programs that attempt to overcome motivational deficits incorporate the learner's choices and perseverative interests, use natural reinforcers directly related to the child's response, intersperse maintenance trials with acquisition trials, vary tasks frequently, and conduct training in inclusive

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settings (Baker, Koegel, & Koegel, 1998; Haring & Breen, 1992; Koegel & Egel, 1979; Koegel, Dyer, & Bell, 1987; Klin, Danovitch, Merz, & Volkmar, 2007). Incorporating motivational components into the teaching situation may result in spontaneous increases in communication and social engagement (Baker et al., 1998; Koegel, Vernon, Koegel, Koegel, & Paullin, 2012).

Koegel, Kim, Koegel and Schwartzman (2013) incorporated preferred interests into the lunchtime activities of seven adolescents with Aspergers Syndrome in inclusive settings. In this study, the preferred interests of the learner were identified using interviews. Results showed an increased level of engagement and initiations to typical peers. Generalization and maintenance of the acquired skills was observed for three of the participants. In a similar study (Koegel et al., 2012), three elementary school children with Aspergers Syndrome were involved in special lunch clubs that incorporated their interests to promote peer engagement. The study provided opportunities to the typical peers to join a club of their choice, thereby incorporating the interests of the target children as well as the typical peers. The interests were identified during a 15-min discussion with the child and an interview with the parent prior to the start of the intervention. The target children showed large increases in their time engaged with peers and verbal initiations. However, generalization of behaviors across activities other than those used during training was not assessed. These findings indicate that incorporating interests alone, without any additional social skill training, can result in increased engagement.

Thus, identifying interests accurately could be a salient target of social skill intervention programs designed to increase peer interaction. The aforementioned studies used participant nomination methods via interviews and surveys to identify preferences. However, previous research has noted that survey results alone, obtained by asking participants to name their preferred items, may not be sufficient to identify potent reinforcers (Northup, George, Jones, Broussard, & Vollmer, 1996). The accuracy of multiple-stimulus methods (e.g., multiple stimulus without replacement; MSWO) in predicting high and low preferences in academic settings using edibles and activities as stimuli has been largely confirmed (Daly et al., 2009; Paramore & Higbee, 2005). Additionally, the studies described above targeted older elementary children or adolescents with ASD. It has been shown that patterns of social isolation found during preschool years within this population may tend to continue over time, if left unaddressed (Ingersoll, Schreibman, & Stahmer, 2001). Perhaps an intervention of this kind in the younger years might result in fewer issues in social interaction during the later school years and adulthood (Koegel et al., 2012). Research that addresses social deficits during the early years of life is of utmost importance for individuals with ASD.

The present study aimed to extend this line of research on improving socialization of children with ASD and their peers. The purpose of the present study was to assess whether incorporating common preferences of young children with ASD and their typically developing peer, without any further social skill training, would lead to an increase in engagement and verbal initiations during play. The purpose was also to use a robust measure of assessing preferences, the MSWO assessment, to identify common interests. We also assessed whether engaging in mutually preferred activities would lead to increased engagement in the natural environment (i.e., the home or an outdoor play setting) and evaluated the maintenance of the newly acquired skills over time.

2. Method

2.1. Participants

Three children receiving behavioral services in Chennai, India participated in the study. They had been diagnosed with ASD using the DSM-IV criteria by a clinical psychologist and received early intervention services for 18–24 months prior to the commencement of the study. All children were enrolled in general education schools with typically developing peers, and were recruited based on parent and teacher reports of lack of engagement with peers in school and in the community. All children had prior experience with pictorial preference assessments.

Adhi was a 4.5 year-old boy who was enrolled in a kindergarten classroom with typically developing children. He demonstrated fluent conversations with adults but did not socialize with peers, as reported by his parents and teachers. They also reported that he would join his peers in play when prompted to do so but rarely showed any initiation during play. Ashwin was a 5 year-old boy in kindergarten who had fluent conversation skills. His preferred interests included board games and outdoor games. His parents reported that he did not interact with his peers in school and preferred to read during play time. Ken was a 4.5 year-old boy in a preschool classroom who could initiate a conversation in phrases and short sentences. He could ask and answer simple questions and request for items and activities he wanted. His interests included pretend play sets and simple board games. His parents and teachers reported that he did not show any interest in his peers and preferred to play alone. All language assessments were conducted by the first author using the Assessment of Basic Language and Learning Skills (ABLLS-R; Partington & Sundberg, 1998).

The typically developing peers chosen for the study were Sara, a 4 year-old girl, Dev, a 4.5 year-old boy and Dhiya, a 4 year-old girl respectively. The choice of peers was made based on their availability for the training and generalization sessions, their age, and their familiarity with the target children. That is, each participant and peer belonged to the same classroom and had a 6-month history of exposure to each other. Thus, the participants rarely interacted with these peers despite many opportunities to do so prior to the study. The peers were told that the treatment sessions were a play date with their classmate.

The study was conducted in accordance with the National Ethical Guidelines for Biomedical and Health Research with Human Participants as revised by the Indian Council of Medical Research in 2017 and the Declaration of Helsinki as revised in 2000. Informed consent was obtained from all the participants of the study. All participant names were substituted with aliases to protect their identity.

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