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Improving Peer Engagement of Children With Autism on the School Playground: A Randomized Controlled Trial

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This study aimed to test the effects of a psychosocial intervention, Remaking Recess, on peer engagement for children with autism spectrum disorder (ASD). Using a randomized, wait-list-controlled design, the intervention was implemented during recess at four elementary schools. The immediate treatment (IT) group consisted of 13 (2 female) elementary school students with ASD and the wait-list (WL) group contained 11 (4 female) students with ASD. All of the children with ASD were fully included in the general education program. Analyses revealed that time spent engaged with peers was significantly increased for the IT group and maintained over the follow-up. School playground staff in the IT group showed increased behaviors aimed at improving peer engagement for children with ASD compared to playground staff at the WL sites. These improvements did not maintain to follow-up. These results suggest that a low dose, brief intervention can be beneficial in increasing peer engagement for children with autism in inclusive settings, but continued support of playground staff is likely needed.

Keywords: peer interactions; schools; inclusion; autism; paraprofessionals

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Social impairment has been identified as the most enduring issue for children with an autism spectrum disorder (ASD), affecting their peer relationships, friendships, and general social interactions with others (Bellini, Peters, Benner, & Hopf, 2007; Rao, Beidel, & Murray, 2008). Interventions developed to address this issue are of high priority, particularly in the child's real-world environments such as school (Kasari & Smith, 2013). Despite the increase in research on social skills interventions over the past several years (Kasari & Lawton, 2010; Reichow & Volkmar, 2010), few of these have been designed for or tested in school settings (Bellini et al, 2007; Kasari & Smith, 2013). The goal of this social skills research generally is to improve relationships and friendships in the child's everyday environments. The goal of the current study was to develop and test a novel intervention, Remaking Recess, for improving peer interactions in the school setting for elementary-aged children with ASD.

Most social skill interventions for children with ASD are conducted in clinical settings, and often in groups of other children with ASD (Bellini et al., 2007; Rao et al., 2008; Williams White, Keonig, & Scahill, 2007). While many of the studies improve social skills within the group, there is little evidence of generalization outside the clinical setting. If improvements are found outside this setting, individuals who are not blinded to intervention condition often provide the outcome measure (e.g., parents); thus, potential bias cannot be ruled out. One exception is the study by Frankel, Gorospe, Chang, & Sugar (2011), where a parent-mediated intervention in the clinic taught children how to make and keep friends. Parents who hosted more successful play dates for their children at home had children

who also demonstrated increased peer interactions on their school playground as coded by blinded observers. This is one of the few studies demonstrating generalization from an intervention in a clinical setting to the child's real-world school environment.

Other researchers have attempted to create a school-like environment by creating analog classrooms, often in a summer school program. For example, Lopata, Thomeer, Volker, Nida, and Lee (2008) created summer camp classrooms for children with ASD and delivered social interventions aimed at improving perspective taking and emotion recognition. Although mirroring a classroom context, peers are not the same as in the child's real-world school environment, nor are the expectations consistent with those of a typical classroom. Thus, the generalization of analog contexts to actual contexts is often untested.

Despite the fact that few intervention studies are carried out in real-world school environments (Kasari & Smith, 2013), school personnel do implement social skills programs for children with ASD who are in the general education programs. Often these programs are derived in varying degrees from research paradigms. Three common interventions for children with ASD include psychologist-run lunch-bunch social skills groups, buddy systems where specific peers are assigned to help a target child, and assignment of a one-on-one aide to help a specific child socialize. The first common intervention model utilizes a social skills group, often held weekly at lunchtime. These groups are composed of children who have been identified as having social difficulties, including difficulties making friends at school. Some of these groups consist of all children with social difficulties while others include a mix of children with social difficulties and typical peers. This group model, while common, has rarely undergone rigorous testing at school, but most closely resembles group social skills interventions carried out in nonschool, clinical settings (Williams White et al., 2007).

A second model targets intervention with the child's peer group (peer-mediated models). These models often teach peers in the child's classroom strategies for engaging children in joint activities and how to initiate and respond to the target child with ASD behaviors. Peer-mediated models have the greatest support at the preschool-age level but have limited testing in the school-age population with ASD (McConnell, 2002). A third model centers on assigning a child a one-on-one aide or shadow teacher to the child with ASD. This model has been very popular with parents who often want the additional adult support to help their child navigate social situations at school. Although rarely tested, this model demonstrates substantial drawbacks as voiced by adolescents who experienced a shadow teacher model (Humphrey & Lewis, 2008). These adolescents recall feeling "marked" by the presence of the aide and a general feeling that the aide did not help them with their social relationships. Another study noted that adults assigned to assist children with ASD were often unsure of what to do on playgrounds, frequently blocking interactions between the children and their peers, resulting in more isolation from peers (Anderson et al., 2004). These data are consistent with a recent study in which children who had a one-on-one aide were less engaged on the playground with peers or with the aide than children without an aide (Kasari, Locke, Gulsrud, & Rotheram-Fuller, 2011).

A recent randomized controlled trial conducted at school compared peer- versus adult-mediated interventions for improving peer social networks of children with ASD (Kasari, Rotheram-Fuller, Locke & Gulsrud, 2012). This study applied interventions with some evidence from single-case designs with preschool-aged children with ASD. One model used adult tutoring of the three top problems identified for individual children and utilized self-management strategies with the child (Koegel, Keogel, Hurley, & Frea, 1992). The other model utilized typical peers from the child's classroom to help children interact with their peers on the playground (McConnell, 2002). The peer-mediated intervention was superior in improving the social networks of the children, but these effects had limited impact on peer interactions on the playground. Even children with ASD who had reciprocal friendships and viewed as more popular in their class as reported by peers on the social network measure were not more engaged on the playground than children without friends or who had low social status within the class (Kasari et al., 2012).

Two aspects of the aforementioned study likely limited the changes that could happen on the playground. One is that the interventions only indirectly addressed the playground context. Children were given the interventions at school but away from the playground. Changes may have been greater if the intervention had been delivered directly in the context in which changes were expected. Second, the school staff was not taught the interventions in this study. The study was a partial effectiveness study in which the research staff delivered the interventions. One interpretation of the findings is that while children may have improved their social skills in the one-on-one research context, they may not have been able to generalize their newly learned skills to the unstructured playground environment. Thus, training of the adults on the playground would seem a likely target for future interventions.