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Research in Autism Spectrum Disorders

Journal homepage: <http://ees.elsevier.com/RASD/default.asp>

Social communication effects of peer-mediated recess intervention for children with autism

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ARTICLE INFO

Article history:

Received 15 May 2014

Received in revised form 26 August 2014

Accepted 29 August 2014

Keywords:

Autism

Peer training

Social communication skills

Recess

ABSTRACT

Children with ASD face enormous challenges in the area of social functioning. Research has shown that impairments in social functioning distinguish this population from both typically developing children and children with disabilities. This study incorporated several evidence-based social skills-teaching procedures (i.e., direct instruction, priming, prompting, peer-mediation, contingent reinforcement, and token economies) directly in the recess setting to increase appropriate social behaviors for four children with ASD (ages 6–8). Elements of peer networks and pivotal response training (two types of social skills intervention packages in the literature) were included. Results showed significant increases in social communication between focus children and their peers, as well as generalization of skills to non-intervention recesses.

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1. Introduction

Impairments in socialization are a core characteristic of Autism Spectrum Disorder (ASD) (American Psychiatric Association, 2000). The effects of social impairments distinguish children with ASD from both typically developing children and children with other disabilities (Ingram, Dickerson, Mayes, Troxell, & Calhoun, 2007) and places them at risk of remaining excluded from key social opportunities, such as those found in integrated settings. Researchers have found that patterns of social isolation tend to continue without intervention. Ingersoll, Schreibman, and Stahmer (2001) reported that children who isolated themselves early in preschool continued this pattern of social avoidance, communicating less frequently over time than their same-aged peers.

Failure to communicate with peers at school may lead to a multitude of challenges for children with ASD. Light (1988) stated that four social purposes are accomplished through peer-to-peer communicative interactions: “(1) the expression of needs and wants, (2) information transfer, (3) social closeness, and (4) social etiquette”. In other words, without social skills, one is left with very little control over one’s environment in a social context. Since the majority of our experience takes place in social environments, the lack of adequate social behaviors can have long-term and far-reaching effects. Fortunately, there is sufficient evidence to suggest that social behavior (for individuals with and without autism) is firmly anchored to the social and physical environment (Ostrosky, Kaiser, & Odom, 1993; Zanolli, 1997). Therefore, a strong rationale exists for the development of environmental stimuli that can directly and desirably shape and control social behaviors.

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2. Peer-mediated social skills interventions

Peer-mediated interventions (PMIs) involve training peers to implement elements of behavioral interventions. PMIs have been used with a variety of skills from pre-academic (Egel, Richman, & Koegel, 1981) to community skills (Blew, Schwartz, & Luce, 1985) and social communication and play behaviors of young children with ASD and their neuro-typical peers (Goldstein, Kaczmarek, Pennington, & Shafer, 1992; Odom, Chandler, Ostrosky, McConnell, & Reaney, 1992; Thiemann & Goldstein, 2004; Zanolli, 1997). Peer-mediated social skills interventions involve training peers to model, initiate, prompt, and/or reinforce social behaviors and interactions with target children (Kamps et al., 2002; Odom & Strain, 1986; Pierce & Schreibman, 1995; Strain & Kohler, 1999; Thiemann & Goldstein, 2004). Adults' involvement is generally peripheral, and involves prompting through peers rather than directly interacting with the focus child unless it is determined to be necessary. PMIs have been shown not only to produce desirable and reliable changes in the social behavior of children with ASD, but when implemented properly, can result in positive collateral effects such as prolonged maintenance of skills, larger effect sizes than adult-mediated intervention, and generalization across peers, settings, and activities (Kohler, Strain, Hoyson, & Jamieson, 1997; Strain & Kohler, 1999). PMI is considered an evidence-based practice by the National Professional Development Center on Autism Spectrum Disorders (<http://autismpdc.fpg.unc.edu/>) and the National Standards Project (<http://www.nationalautismcenter.org>). Despite their status as an evidence-based practice, PMIs are not yet commonplace in school settings.

2.1. Peer network interventions

Researchers have also reported success when combining PMI with other evidence-based practices into multi-component intervention packages. Peer network is one type of packaged intervention. Social skills interventions using Peer Networks were first reported in the school-based literature in the early 1990s (Haring & Breen, 1992). A peer network includes a focus child with ASD and a small group of teacher-nominated typically developing peers in which adult instruction is combined with peer mediation and is provided in integrated settings. These interventions have been shown to result in positive outcomes across a variety of social behaviors such as increased frequency of communication behaviors, task engagement, and duration of interactions (Kamps et al., 1992; Morrison, Kamps, Garcia, & Parker, 2001; Parker & Kamps, 2011); responsiveness between children with ASD and their peers (Kamps, Potucek, Lopez, Kravits, & Kemmerer, 1997); use of augmentative communication devices with peers (Garrison-Harrell, Kamps, & Kravits, 1997); and increases in sustained interactions (Gonzalez-Lopez & Kamps, 1997) and reciprocal interactions (Morrison et al., 2001).

2.1.1. Recess interventions

Several studies have demonstrated the benefits of recess setting intervention for children with ASD to include increased cooperation, communication, and play skills (Harper, Symon, & Frea, 2008; Lang et al., 2011). Baker and colleagues, for example, used perseverative interests of children to increase social interactions and affect at recess time (Baker, Koegel, & Koegel, 1998). Koegel, Kuriakose, Singh, and Koegel (2012) used pivotal response treatment strategies (child choice and task variation) during social play groups for participants with ASD, followed by facilitated social play with initiations training (i.e., choosing a peer or peers to play). Initiations training showed increased generalization of social engagement during recess time.

Kasari, Rotheram-Fuller, Locke, and Gulsrud (2012) conducted a large-scale randomized controlled trial conducted across 30 Los Angeles-area general education classrooms with children ages 6–11 in which they compared peer- versus teacher-mediated social skills interventions on cooperative game playing skills of children with ASD at recess. Experimental groups consisted of: (a) direct instruction (DI) only, (b) PMI only, and (c) a combination of the two. Results demonstrated that the groups that received the PMI (or combined treatment) displayed rapid and significant improvements in social network salience (number of peer nominations for belonging to a peer network), number of friendship nominations, teacher reports on rates of social skill use in the classroom, and decreased isolation during observations than children who received DI only. Given the growing focus on standards-based instruction in schools, children have increasingly limited social opportunities at school (Chiang, 2009; Harper et al., 2008; Lang et al., 2011). These studies suggest the recess setting as a highly social, largely unstructured part of children's school day, with multiple opportunities to learn and use appropriate social communication skills, thus a prime context for implementing PMI.

2.1.2. Purpose

The purpose of this study was to evaluate the effects of a peer network recess intervention package (PNRI) on the reciprocal social communication behavior of young children with autism and their typically developing peers in a recess setting. The study tested effects of a structured intervention package that included (1) class-wide social skills lessons and priming prior to recess time, (2) peer prompting and praise and adult feedback during recess time, and (3) use of a token economy. The primary research question addressed was: What are the effects of a peer-mediated intervention on the social communication behavior of children with ASD and their typically developing peers during recess? Secondary research questions included the following: What are the effects of the PNRI on participants' initiations and responses to peers? What are the effects of the PNRI on peers' initiations and responses to participants? What are the levels of adults and peer prompts during the intervention condition?

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