Systematic Review of Interventions to Promote Social–Emotional Development in Young Children With or at Risk for Disability

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MeSH TERMS
- child development
- emotional intelligence
- interpersonal relations
- occupational therapy
- treatment outcome

This systematic review synthesized the research on interventions used by occupational therapy practitioners to promote social–emotional development in young children (birth–5 yr) with or at risk for disabilities. After a comprehensive search of the research literature, 23 studies were reviewed and then synthesized into five themes: (1) touch-based interventions to enhance calming and parent–infant bonding, (2) relationship-based interventions to promote positive caregiver–child interactions, (3) joint attention interventions, (4) naturalistic preschool interventions to promote peer-to-peer engagement, and (5) instruction-based interventions to teach children appropriate social behaviors. The interventions for infants primarily involved coaching parents in specific strategies to promote positive interactions; interventions for preschool-age children typically involved encouraging peer support, instructing children, and applying naturalistic behavioral techniques to develop higher-level social competence. The studies demonstrated low to moderate positive effects for interventions used by occupational therapy practitioners to improve social–emotional development across ages, diagnoses, and settings.


Social–emotional skills develop early in life, beginning with the infant’s bonding to his or her parents and continuing as the infant forms relationships with other family members and preschoolers form relationships with adults, such as teachers; family; and peers. Early social relationships are characterized by the infant signaling the parent to take care of his or her immediate needs and the parent comforting the infant through feeding, touching, rocking, and soothing. Social–emotional development is believed to be foundational to the development of cognition, language, and adaptive life skills (Greenspan, Wieder, & Simons, 1998). A young child’s development of social competence allows him or her to participate in a range of social environments at home and in the community. These social environments continue to grow exponentially throughout childhood into adolescence (Guralnick, 2010; Reichow & Volkmar, 2010).

Infants may demonstrate social–emotional disorders because cognitive (understanding of social interaction) or psychological functions are limited or because environmental constraints (e.g., maternal depression or child abuse) limit development. Children with cognitive delays may demonstrate minimal understanding of emotional expression and nonverbal language or may have limited ability to learn social skills. Children with psychological disorders may have the aptitude to develop social competence but lack competence in specific situations that are threatening or uncomfortable for them. Children who experience abuse or neglect may have the ability to learn social skills, but these skills are stunted or inhibited because the environment does not foster social skill development.
Interventions to promote social–emotional growth in infants focus on parent–child interaction (Gutstein, Burgess, & Montfort, 2007; Mahoney & Perales, 2005). These programs teach parents how to read the child’s cues and sensitively respond. Other parent-mediated interventions use touch and massage to calm the infant and to promote parent–infant bonding (Escalona, Field, Singer-Strunck, Cullen, & Hartshorn, 2001). Occupational therapists working with infants with poor self-regulation, fussy behaviors, or poor attachment often use touch-based interventions that involve systematically applying massage, holding, or deep pressure. They also support parent–infant interaction by educating parents on sensitive responding to their infant’s cues.

When preschool children demonstrate social–emotional delays, occupational therapists apply interventions that teach social skills, provide tools to support practice of social skills (e.g., iPad®, prompts, Social Stories®), promote adult–child sustained interaction or joint attention (generally in a play activity), and promote peer-to-peer interactions in natural play activities. Parents may be involved in interventions for preschool children, but often the adults involved are professionals and therapists in the child’s preschool classroom.

Occupational therapists apply holistic interventions with young children that include strategies to support and promote social–emotional development. With young children who demonstrate specific psychological disorders (e.g., anxiety or autism spectrum disorders [ASD]) or who are at risk given abusive conditions, social–emotional interventions become a primary focus of occupational therapy services. The research question that guided this review of the research literature was the following: What is the evidence for the effectiveness of interventions used by occupational therapy practitioners to promote social–emotional development of children with or at risk for disabilities, ages birth to 5 yr?

Method

Research Design

The systematic review of the research literature was initiated and supported by the American Occupational Therapy Association (AOTA) as part of the Evidence-Based Practice project. AOTA staff identified efficacy studies on social–emotional interventions used by occupational therapy practitioners with children ages birth–5 yr. Detailed information regarding the methodology for the entire literature review can be found in the article “Method for the Systematic Reviews on Occupational Therapy and Early Intervention and Early Childhood Services” in this issue (Arbesman, Lieberman, & Berlanstein, 2013).

Procedures

In the first phase of the search, the AOTA consultant identified studies on social–emotional interventions for young children by searching PubMed, CINAHL, PsycInfo, ERIC, Cochrane Database of Systematic Reviews, Campbell Collaboration, and OTseeker. A medical librarian with experience in systematic reviews completed the searches. Criteria for inclusion in this review were as follows:

- The reported intervention could be performed by occupational therapists in various settings.
- Articles were original scientific reports of studies in children ages birth–5 yr with a developmental delay, disability, or condition that affects development.
- Articles were focused on evaluating the effects of the interventions in an effort to improve social–emotional development.
- The outcome measures included social skills, social–emotional performance, or related behaviors.
- Studies were categorized as Level I, II, or III evidence or as Level IV evidence in areas without higher level evidence.
- Articles were published in peer-reviewed journals published in English.
- Articles had been published since 1990.

The project consultant identified 5,823 titles and abstracts. From these abstracts, 73 articles were identified and read by the author and the AOTA consultant. Forty-six were selected and were fully critiqued to determine whether the reports met all inclusion and exclusion criteria. After a full critique, confirmed by the AOTA consultant, only 23 studies were found to meet all of the inclusion and exclusion criteria, including level of rigor, and were included in this systematic review.

Findings

Of the 23 studies included in this systematic review, 11 were systematic reviews or randomized controlled trials (RCTs; Level I); 4 were nonrandomized two-group studies (Level II), and 3 were nonrandomized one-group studies (Level III). Five single-subject studies (Level IV) were also included because they reflected unique findings of relevance to occupational therapists (see Supplemental Table 1, available online at http://ajot.aotapress.net; navigate to this article, and click on “Supplemental Materials”). On the basis of the review, five themes emerged from the
findings and were used to categorize the types of interventions used to promote social–emotional development in young children: (1) touch-based interventions to enhance calming and parent–infant bonding, (2) relationship-based interventions to facilitate positive caregiver–child interactions, (3) joint attention interventions, (4) naturalistic preschool interventions to promote peer-to-peer engagement, and (5) instruction-based interventions to teach children appropriate social behaviors.

**Touch-Based Interventions**

Interventions that use touch (sometimes termed *skin-to-skin*), deep pressure, and massage have been applied to promote bonding, calming, and physiological stability. Two RCTs (Level I) and one nonrandomized trial (Level II) support the effectiveness of touch-based interventions with infants and young children. In a follow-up study of an RCT examining the effect of *kangaroo mother care* (KMC), a mother–neonate skin-to-skin contact used during the infant’s stay in a neonatal intensive care unit that involves the mother’s voice, olfactory stimulation, vestibular–kinesthetic stimulation through rocking, and tactile stimulation, on infants’ mental development, Tessier et al. (2003) compared 12-mo-old infants who had received KMC as neonates with a control group. Using the Griffiths Mental Development Scales (Griffiths, 1996), this group of researchers from Bogota, Colombia, found that the KMC infants were modestly higher in cognitive skills. For subgroups of infants who were initially more at risk, the effect of KMC was more substantial. An effect on personal social skill suggested that the initial skin-to-skin contact may have promoted bonding and parenting skills that facilitated the infant’s social–emotional development.

Two studies examined the effects of massage on preschool children with ASD or at risk for disabilities. Escalona et al. (2001) completed an RCT of parent-administered massage on preschool children with ASD. The 15-min massage was administered daily before bedtime for a month. The children who received massage compared with those who were read a story demonstrated increased on-task behavior and attention and reduced stereotypical behaviors. The children who received massage also slept better, which may have accounted for the improved behaviors. In a second study of massage, von Knorring, Söderberg, Austin, and Uvnäs-Moberg (2008) evaluated the effects of massage administered during preschool rest time to 4- to 5-yr-old children. Using the Child Behavior Checklist (Achenbach & Rescorla, 2000), the massage group (*n* = 60) did not show differences when compared with the control group (*n* = 50).

However, the subgroup of children with aggressive and deviant behaviors did improve significantly when compared with the control group. After the massage intervention, children who were initially categorized as aggressive demonstrated fewer social problems and less aggressive behaviors as evaluated by parents and teachers.

**Relationship-Based Interventions**

In relationship-based interventions, therapists focus on specific strategies to improve adult–child interaction; key ingredients appear to be sensitive responding to the child and positive affect. Six studies (2 Level I, 1 Level II, 3 Level III) investigated the effects of relationship-based interventions. In an RCT of children with ASD, Field, Field, Sanders, and Nadel (2001) examined the effects of a short-term intervention using adult imitation of the child’s behaviors compared with a control group using adult contingent responses (unstructured play). Only three sessions were implemented; in each, the child’s behaviors were coded for social behaviors. The children in the imitation sessions showed less time playing alone, more time looking at the adults and smiling and vocalizing to them, and more time engaged in reciprocal play. This study demonstrated the immediate results of adult imitation during play in children with ASD.

In a nonrandomized study (Level II), Daunhauer, Coster, Tickle-Degnen, and Cermak (2007) compared the developmental competence of institutionalized children in two conditions, when interacting with a caregiver and when playing alone. The children demonstrated significantly higher level play when interacting with caregivers than when playing alone. Higher level play skills were associated with caregivers whose interactions with the child were directive (i.e., directing the child’s actions, structuring activity) and supportive of social–emotional development (assisting child, responsive). These findings are limited to children who are institutionalized but suggest the importance of caregiver interaction style on the child’s developmental competence.

Four studies examined the benefits of relationship-based, parent-mediated interventions on performance in children with or at risk for disabilities. Each found low positive effects across multiple outcomes. Olafsen et al. (2006), in an RCT, examined the effects of an early intervention program that emphasized parents’ sensitivity and responsivity to their preterm infants’ cues. Neonatal nurses met with the parents seven times before discharge from the neonatal intensive care unit and then made four home visits. At 12 mo, the infants who had participated in the early intervention program more frequently initiated joint attention and responded to social interactions.
than infants in the control group. They were not more responsive to joint attention or to object requests; the authors suggested that these responses may require complex skills that were not influenced by this intervention.

Using a group of young preschoolers with ASD in a pretest–posttest study, Mahoney and Perales (2003) examined the effectiveness of a relationship-focused intervention on the preschoolers’ social–emotional well-being. Mothers were encouraged to be more responsive to their children in routine interaction. After 1 yr in the once-weekly program (mean number of sessions = 31), mothers demonstrated more sensitive responding and improved affect, and children exhibited higher levels of attention, cooperation, initiation, and positive affect. The children were also less detached and more socially interactive and showed improved self-regulation. Changes in the mother’s level of responsiveness accounted for 25% of the variance in changes in the children’s social interactive behaviors. In a similar, later study, Mahoney and Perales (2005) examined the effects of their relationship-focused intervention when applied to mothers and children with ASD compared with mothers and children with developmental disabilities (DD). Fifty preschool children, ages 12–54 mo, were divided into two groups, ASD and DD, and the mother–infant dyads participated in weekly sessions for 1 yr. The mothers made significant increases in responsiveness. All children made significant gains after the intervention, and the children with ASD made greater gains in cognition, language, self-regulation, and social competence than the children with DD. Changes in mothers’ responsiveness accounted for 20% of the variance in changes in children’s pivotal developmental behaviors.

In a one-group pretest–posttest study (Level III), Gutstein et al. (2007) examined the effects of a relationship development intervention (RDI) on 16 children with ASD. The researchers trained the parents and then met with them weekly or biweekly for consultation to update their program. The parents learned how to provide learning opportunities, scaffold their child’s performance, and respond with flexibility. After an average of 41.5 mo, the children demonstrated significant improvement on the Autism Diagnostic Observation Schedule (Lord, Rutter, Dilavore, & Risi, 2002), and their “age-appropriate flexibility” (an emphasis of the intervention) improved from 16% to 71%. Gutstein et al. concluded that the children who participated in RDI became more socially related, engaged in more reciprocal communication, and demonstrated more flexible and adaptive behaviors.

### Joint Attention Interventions

The ability to share attention when engaged in an activity is a high-level skill critical to social interaction. Many or most daily interactions with others require joint attention, and it appears to be associated with the development of language (Mundy & Gomes, 1998) and play (Mundy & Sigman, 1989). Two RCTs and 2 studies with a single-subject design examined the effect of interventions that promote the development of joint attention.

Kasari, Freeman, and Paparella (2006) tested the efficacy of two interventions, one targeting joint attention and one targeting symbolic play, in children with ASD. In a sample of 58 children with ASD, 20 received the joint attention intervention, 21 received the symbolic play intervention, and 17 were the control group. After a short session using discrete trial training to teach each child a new skill, the skill was practiced in a semistructured, child-centered play session that targeted symbolic play or joint attention. Compared with the control group, the children in the joint attention and symbolic play groups showed greater improvement in initiating interaction and coordinating joint looks. The joint attention group made more gains in joint attention and engagement, and the play group demonstrated higher developmental play levels. This well-designed and well-controlled study showed that children with ASD can learn joint attention and new play behaviors when discrete trial training is combined with a therapist-directed child-centered play session focused on specific goals.

In an RCT, Landa, Holman, O’Neill, and Stuart (2011) investigated the effects of an interpersonal synchrony (IS) intervention provided 10 hr/wk for children with ASD. This 6-mo intervention targeted children’s development of social engagement, joint attention, and affect sharing. Forty-eight children (ages 21–33 mo) were randomized to the IS condition or a control condition with similar components for 10 hr/wk. The therapists encouraged, modeled, and prompted social behaviors, and they created activities and environments to encourage joint attention and shared positive affect. In addition, both groups received ASD-specific classroom interventions. Using videotapes to score social engagement, Landa et al. found that the children in the IS condition improved significantly more in socially engaged imitation and eye contact. Both groups made significant gains in initiation of joint attention and shared positive affect.

Two multiple-baseline single-subject studies examined the effects of an interactional, play-based intervention on child engagement. Vismara, Colombi, and Rogers (2009) examined the effects of the Early Start Denver Model on
8 children (ages 12–36 mo). In this individualized intervention, therapists teach parents to use developmental play-based strategies focused on increasing imitation, joint attention, and engagement. After 12 wk of intervention (once weekly with parent and child), graphs of sampled behaviors showed increases in the children’s utterances and imitations for adults. They also showed more attentiveness and social initiative behaviors. The parents learned the techniques and applied them with 48%–67% fidelity.

In a second multiple-baseline single-subject study, Whalen, Schreibman, and Ingersoll (2006) implemented a joint attention treatment that included components of discrete trial training (i.e., highly structured behavioral intervention) and pivotal response training, which uses naturalistic reinforcement, child choice, turn taking, and reinforcement of attempted responses in the context of play. Ten children were studied, 4 with ASD (mean age = 4.2 yr) and 6 peers who were typically developing (mean age = 2.4 yr). After 10 wk of intervention, the children with ASD demonstrated increases in social initiation and social responding during a structured joint attention assessment. They also exhibited increases in positive affect and empathetic responses. Although imitation during play increased, the children with ASD did not change in rate of functional or symbolic play. The authors concluded that teaching joint attention skills can lead to improved social initiations and positive affect.

**Interventions to Promote Peer-to-Peer Engagement**

In 2 studies (1 Level I and 1 Level II), researchers embedded natural interventions in preschool classrooms targeting peer interaction for children with disabilities. In an RCT, Guralnick, Connor, Neville, and Hammond (2006) evaluated the effectiveness of a 2-yr comprehensive individualized, developmental intervention with 90 preschool children (mean age = 64 mo). Over a 2-yr period, a total of 46 children received the intervention and 44 children were in the control group. Comprehensive intervention plans were developed for the children. Play groups were established, and the children were taught scripts for peer interactions; family consultation was included. Both the intervention and the control groups improved in positive social behaviors (e.g., joins peers, leads peers, seeks attention and agreement from peers), peer interaction, and responsiveness to peers without significant differences. Children with low IQs developed more positive interaction skills with peers when in the intervention condition, indicating a greater effect for children whose cognitive level was low.

The effect of computer activities on preschool children’s play and social interaction was investigated in a two-group, nonrandomized study (Howard, Greyrose, Kehr, Espinosa, & Beckwith, 1996). All children (ages 18–36 mo) had disabilities and individualized education programs (22 in the intervention group, 15 in the control group). The children who were taught to use the computer and engaged in specific computer activities demonstrated more active waiting, less solitary play, more turn taking, more attention to communication, and more positive affect during the computer activities than the children who were engaged in small-group activities that did not involve the computer. This study suggests that computer activities can be engaging to young children and can have a positive influence on their development of social skills.

Researchers have examined the effect of objects and toys on social interaction in children with disabilities. A systematic review (Level I) analyzed the effects of toys on social interaction of young children. Kim et al. (2003) completed a systematic review of studies published from 1975 to 1999 that investigated the effects of toys on social behaviors in 3- to 5-yr-old children with disabilities. Thirteen studies met their criteria; most compared the effects of isolate versus social toys on social interaction and social play behavior. Social toys are defined as those that naturally promote social interactions, such as puppets, dress-up, dolls, trucks, blocks, and housekeeping toys. Isolate toys are those that can easily be played with alone, such as puzzles, books, and art materials. Children with disabilities exhibited more positive social interaction when playing with social toys in activities with typically developing children. Playing with children who have higher cognitive levels appears to enhance the social skills of children with disabilities. Child-centered play using unstructured toys (e.g., balls and free-form blocks) resulted in more positive social interactions than did play using structured toys (e.g., puzzles) or adult-directed play. Toys such as free-form blocks that can be used in multiple creative ways promote social interactions. Kim et al. concluded that interventions that incorporate toys and manipulate group composition produce low effects. These elements may not be sufficient to change social skills in certain children, particularly children who are lower functioning.

Two Level IV studies examined naturalistic interventions that manipulate the environment to promote peer-to-peer engagement. A multiple-baseline single-subject study examined the use of a joint activity schedule on peer engagement of three dyads with ASD (Betz, Higbee, & Reagon, 2008). The dyads included 5 boys and 1 girl, ages 4–5 yr. In their preschool settings, the dyads chose activities from a joint photograph activity schedule, and then the instructors guided their play. Compared with the baseline condition of unstructured play, when the dyads chose activities from a picture
schedule, their engagement in the play activities increased and persisted during a maintenance phase. Tanta, Deitz, White, and Billingsley (2005) examined the differences in initiation and responses when preschool children played with developmentally more mature children versus developmentally less mature children. Five children at risk for developmental disabilities were placed in dyads with 5 developmentally more mature children and 5 developmentally less mature children. They were encouraged to engage in play; their play was videotaped and coded for initiation and responses. The at-risk children showed more initiation and response to peers when they played with more mature peers. This study suggests that more mature peers can facilitate the emergence of initiation and response behaviors in children with disabilities.

**Instruction-Based Interventions**

Instruction-based interventions are often used to reduce children’s disruptive and negative behaviors and teach children social competence (i.e., appropriate peer interaction during play). These interventions include providing social scripts or social stories and practicing social skills in small groups. Each method is designed for specific social situations and includes positive reinforcement.

Five studies (3 Level I, 1 Level II, and 1 Level IV) investigated the effects of individualized or small-group instruction on socially appropriate behaviors. We included three systematic reviews of social skills intervention in our review. Vaughn et al. (2003) synthesized findings of 23 preschool social skill intervention studies (1975–1999). This review included 699 children with disabilities and 203 children without disabilities (ages 3–5 yr). Features of the social skills interventions were prompting and rehearsal of target behaviors, play activities to reinforce and generalize social skills, modeling of specific social skills, social stories, direct instruction, and encouraged imitation. Strategies used consistently in studies with large effects and positive social outcomes were play-related activities, modeling and prompting, and rehearsal and practice. Reinforcement and direct instruction were also associated with positive outcomes and large effects. Social skills programs that were effective included those that were embedded in preschool classrooms and integrated children with and without disabilities.

Hwang and Hughes (2000) completed a systematic review of social interactive training for children with ASD. They identified specific strategies consistently associated with effective interventions, including contingent imitation, naturally occurring reinforcement, time delay in responding, and environment arrangement. Their synthesis defined certain specific effects associated with intervention features: Time delay in adult responding resulted in increases in the child’s verbal responses and requesting skills; environment arrangement increased verbal requests, appropriate responses and initiations, and prolonged social interactions. Contingent imitation resulted in increased eye gaze, positive affect, and attending.

In a third and more recent systematic review, Reichow and Volkmar (2010) examined the research evidence for social skills interventions with children with ASD. They reviewed 66 studies, of which 35 included preschool children ($N = 186$). Interventions that demonstrated effectiveness used prompting and reinforcement techniques, imitation, modeling, naturalistic behavioral techniques, parent training, and peer training. Interventions in which peers were taught to prompt and respond to the child with ASD (e.g., in turn taking) and interventions that included visual supports demonstrated effectiveness.

To compare social skills groups using video modeling versus a play activity, Kroeger, Schultz, and Newsom (2007) investigated a sample of 25 children with ASD (ages 4–6), 13 in the video modeling group and 12 in the play group. Both groups participated in 15 one-hr sessions. The video modeling instruction featured two typical boys, and the play group had free play; behavioral techniques were used with both groups. This study found that the children who received the video modeling instruction were higher in initiating, responding, and interacting behaviors than the play activities group.

In a single-subject (Level IV) study, Crozier and Tincani (2007) examined the effect of a Social Story® intervention on children in an inclusive preschool. Three boys with ASD participated, using Social Stories for targeted behaviors. The targeted behaviors were measured using event recording techniques. One child had a 64% reduction in the targeted behaviors, another showed an increase in verbal interaction, and the third demonstrated a modest increase in appropriate behaviors. The effects of the Social Stories were not maintained, suggesting that their use needed to be continued and that generalization may be limited. These research reviews and studies demonstrate that specific instruction in socially appropriate behavior appears to have moderately positive effects on improving children’s social competence.

**Discussion**

A range of interventions used by occupational therapists to promote social–emotional development in children with disabilities demonstrate effectiveness. These interventions
vary by child’s age and range from focused strategies that promote early social–emotional development to comprehensive classroom interventions that promote a child’s ability to practice and generalize social skills.

**Strategies to Promote Early Social–Emotional Development**

A child’s initial social interactions include eye contact and cuddling with parents and other family members. Very basic human interactions through touch and holding appear to be essential to an infant’s social–emotional growth (Feldman & Eidelman, 2003; Greenspan et al., 1998). Interventions that promote skin-to-skin contact very early in life (e.g., during the neonatal period) can have multiple, sustained benefits for an infant’s development, including enhanced social–emotional development (Tessier et al., 2003). Systematic use of touch through massage when the child is a preschooler can improve on-task behaviors and reduce disruptive, stereotypical, and aggressive behaviors (Escalona et al., 2001; von Knorring et al., 2008). Characteristics of these touch-based interventions are that they involve sustained touch and deep pressure. They can be used by occupational therapists to promote calming and focused attention and are typically used with purposeful activities designed to improve specific skills, including social play performance.

Interventions in which parents (most often mothers) are coached on strategies to increase their social–emotional support, responsiveness, sensitivity, and positive affect with their infant or toddler were found to have moderate positive effects (e.g., Mahoney & Perales, 2005). Parent-mediated interventions, although promising, need to be implemented with sensitivity to the parents’ style of interaction and within the context of the family (e.g., other children and time demands). Parent-mediated interventions can have high impact given the constancy and importance of the parent–child relationships when they focus on the interaction between parent and child while considering parent variables (e.g., skills, style, personality) in addition to child variables (e.g., developmental level, behaviors). Using modeling, coaching, and feedback, relationship-focused interventions can enhance parents’ responsiveness, sensitivity, and flexibility. These characteristics, in turn, can have a positive influence on a young child’s development, including social–emotional function. Parents’ full engagement seems important to the success of these interventions.

Joint attention is essential to a child’s ability to participate in social play or group activities. This skill is particularly difficult for young children with ASD to acquire and has been the focus of several studies with this population (e.g., Kasari et al., 2006; Vismara et al., 2009). Strategies to promote joint attention that have demonstrated effectiveness include allowing the child to select and pace the activity, prompting and reinforcing joint looks, and emphasizing positive affect (Kasari et al., 2006; Landa et al., 2011). Effective interventions to promote joint attention include behavioral components (i.e., modeling, prompting, natural reinforcement) and elements of child-centered, play-based interventions (i.e., child choice of activity and adult sensitivity to child cues).

**Preschool Interventions to Promote Skill Development and Generalization**

Social competence for a preschool-age child involves the ability to use appropriate and effective social strategies to interact with peers, including initiation of interactions, appropriate responding to others, conflict resolution, and sustained engagement in social play (Guralnick, 2010). For a child with disabilities, the primary contexts for the development of social competence with peers are social play opportunities that naturally occur in preschool classrooms or other community settings. Peer-mediated interventions have demonstrated effectiveness across a variety of diagnoses (e.g., ASD, developmental disabilities) and settings (e.g., preschool classrooms, play groups; McConnell, 2002). In peer-mediated interventions, therapists typically provide prompting and praise to both the peer and the child with a disability in the context of social play with a focus on encouraging effective interactions. Using a comprehensive preschool program designed to improve peer-related social interactions, young children with low baseline skills demonstrated improvements in positive interactions (Guralnick et al., 2006). This comprehensive intervention emphasizing individualized supports to help children develop social skills resulted in only moderately positive effects, suggesting that this preschool intervention may not have had sufficient intensity to produce large effects. Interventions that involve teachers, therapists, and parents working toward individualized social goals may be difficult to sustain over time with optimal fidelity and intensity and may result in low but clinically important effects on children’s social competence. Specific strategies that effectively promote peer interactions with children with disabilities include computer activities (Howard et al., 1996) and picture activity schedules (Betz et al., 2008). These strategies appear to be naturally compelling and effectively engage young children in shared interactive activities.
An additional beneficial strategy is pairing a child with disabilities with a child at a higher developmental level (Tanta et al., 2005). The child who has more developmental competence can model appropriate social skills, initiate interactions, and encourage responses from a child with developmental delays. Occupational therapists can use these findings when designing preschool interventions by (1) creating small-group activities with children of mixed ability levels, (2) using computer games or iPad activities to encourage peer interactions, and (3) using a picture schedule to encourage children to choose joint social play activities. Toy selection appears to be a variable that can affect children’s engagement in social interaction (Kim et al., 2003). Toys that promote social play are unstructured and lack a well-defined purpose (e.g., blocks, balls, finger paint on a shared paper) or provide a wide range of pretend play opportunities (e.g., dolls, trucks, kitchen play sets). Isolate toys, such as books, puzzles, or pop-up toys, result in more structured play and fewer social play behaviors. Although these studies have suggested that toy selection can influence the child’s development of social skills, the effects are low, suggesting that toy selection should be one element of a more comprehensive intervention (e.g., one that includes behavioral strategies, peer supports, or social skill instruction).

Several studies have supported the use of direct instruction to teach children social skills. Providing child-friendly instruction to promote social skill learning has demonstrated effectiveness across trials, generating large positive outcomes (Vaughn et al., 2003). Effective social skills interventions involve modeling, rehearsal and practice, prompting, and positive reinforcement (Reichow & Volkmar, 2010). In general, effective instruction uses these behavioral techniques embedded in a naturalistic social play opportunity. Other important elements appear to be child choice, imitation of the child’s actions, and waiting for the child to respond. These elements of interaction can be implemented across play activities but do require frequent opportunities for direct interaction and modifying the strategies to the child’s development skill set.

Limitations

This systematic review included studies at different levels of rigor, with only 11 RCTs among 23 studies. Rigor was considered in analyzing and weighting the results. Social–emotional development overlaps with cognition, language, and adaptive behaviors and therefore is not well defined in the research literature. Therefore, relevant studies may have been excluded in an effort to focus on social–emotional development as the primary outcome. Studies that included children older than age 5 were also excluded, although the findings may have had relevance for children birth to age 5. Only studies written in English were included, limiting the findings to English-speaking populations.

Recommendations for Future Research

Interventions to promote social–emotional growth in young children are complex and always involve parents, caregivers, or peers as well as the systems that support child development. Therefore, these interventions need to target the child’s social partners as well as the child. All of the interventions described are in the early stages of development with some positive evidence, but the evidence regarding who benefits, when and where the interventions are effective, and what mechanisms underlie their effectiveness is limited. Parent-mediated intervention research needs to expand to additional studies with fathers and use of natural contexts. Peer-mediated interventions need to be further researched to understand what level of support is needed to sustain these models and what strategies can help children develop conflict resolution skills as well as basic social interaction skills. By examining these interventions with groups with a variety of diagnoses and ages, researchers will learn who benefits and how interventions to promote social–emotional growth should be staged across the first years of life.

Implications for Occupational Therapy Practice

The results of this review have the following implications for occupational therapy practice:

- Using modeling, coaching, and feedback, occupational therapists can promote infants’ social competence by enhancing parents’ responsiveness and sensitivity to the infants’ cues.
- Effective strategies to promote joint attention include allowing the child to select and pace the activity, prompting and reinforcing joint attention, and using positive affect.
- Small-group activities using technologies such as tablets or computer games can promote peer interactions.
- Selecting toys and technologies that promote social interaction appears to encourage social participation.
- Effective interventions to promote a child’s social skills include modeling of appropriate social behaviors, opportunities to practice with reinforcement, imitation of the child’s actions, waiting for responses, and designing positive natural consequences.
Conclusion

A range of interventions used by occupational therapists effectively promote social–emotional development in young children with or at risk for disabilities. Occupational therapists can promote bonding and positive parent–child interaction with infants by coaching parents to use touch-based interventions and strategies that promote joint attention. Coaching parents to improve their responsiveness, sensitivity, and positive affect can promote young children’s pivotal responses, that is, attending, cooperating, initiating, and demonstrating positive affect. Preschool children with disabilities can develop social competence through peer-mediated strategies and direct instruction. Modeling, prompting, and reinforcing appropriate social behaviors in naturally occurring play activities can effectively support children’s development of social skills. Occupational therapists should individualize and carefully combine these interventions to effectively promote the social–emotional development of children with ASD and other disabilities. Further research by occupational therapy scholars on comprehensive interventions to promote social–emotional development is needed. ▲

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References


