Measuring the playfulness of children with special needs in occupational therapist led, caregiver-included community playgroups

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MEASURING THE PLAYFULNESS OF CHILDREN WITH SPECIAL NEEDS IN OCCUPATIONAL THERAPIST LED, CAREGIVER-INCLUDED COMMUNITY PLAYGROUPS

by

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August 21, 2014
Abstract

The aim of this study was to investigate the effectiveness of community playgroups on the playfulness of children ages 15 months to 3 years with special needs. In addition to playfulness of the child, the sensitivity and responsiveness of the caregiver were examined. A quasi-experimental, pretest-and-posttest, repeated measures design was used to follow eight children and their caregivers receiving early intervention services and taking part in a community playgroup. The children and their caregivers were measured during a 4-week standard-of-care baseline, before and after an 8-week intervention period, and 4 week post-intervention. The Test of Playfulness (ToP) was utilized to measure playfulness at baseline, before and after intervention, and at follow-up. Qualitative ratings for caregiver–child interaction based on the National Institute of Child Health and Human Development scales measured the sensitivity and responsiveness of the caregiver. A repeated measures analysis of variance (ANOVA) demonstrated that participation in the 8-week playgroup significantly increased child playfulness \((p < .01)\). Analysis did not detect a change in caregiver sensitivity and responsiveness as a result of intervention. All caregivers who participated in the playgroup were initially highly sensitive responders to their children. Four weeks post-intervention, a strong, positive linear relationship was found between the sensitivity and responsiveness of the caregiver and the playfulness of the child. The effectiveness of the community playgroup has implications for part of comprehensive occupational therapy practice in early intervention.
Acknowledgements

Thank you first and foremost to God from whom all things are possible. It is no doubt that His strength allowed me to preserve and persist, despite any obstacle in my path during this journey. This process never would have been possible without the love and support of my husband, Ezio. I am so thankful that he pushes me to be a better person every day. Thank you for believing in me and encouraging me to fulfill my goals.

Much love goes to my three beautiful children: Sofia, Gianna, and Ezio. Each one of you was born of this process; thank you for letting me be a mother and a student. I appreciate all the experiences that being a mother gave me. You helped me test toys, sing songs, and be playful. Thank you for sharing your toys with playgroup! Thank you to my mother, who has always encouraged me and helped to watch my very young children whenever I needed. Thank you, Dad, for always showing interest in whatever I am working on! I also appreciate the Fabrizi family (Luigi, Tina, Massimo) for keeping me and my family well-fed and loved. Thank you to all my brothers and sisters, Sean, Joey, Margie, Ira, and Elizabeth, who always allow me to enjoy life, live in the moment, and never take one single day for granted. You were my first playgroup!

I would like to acknowledge the tremendous contributions that my dissertation committee has made to the completion of this manuscript. Dr. Ito, Dr. Winston, and Dr. Celimli, I appreciate all the extra time, feedback, and shared experience you have brought to our relationship. This dissertation would not have been possible without the Nova Southeastern University Department of Occupational Therapy. My current place of employment, Florida Gulf Coast University, and all my coworkers, Dr. Martin, Dr.
Anderson, Dr. Okon, Dr. Gelpi, Dr. Daramola, Karen Mock, Collette Krupp, and Wanda Smith, thank you for being supportive as I came and went from playgroup, missed some socializing and lunches, and spent long bursts of time at my computer in my office.
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Chapter 1: Introduction

Play is an integral part of childhood. A child interacts with the world through play. Play contributes to growth, development, socialization, communication, and creativity (Bergen, 2002; Daniels, 1995; Sutton-Smith, 1997). The positive influence of play on a child’s ability to learn has been well supported in the literature throughout history (Bergen, 2002; Erikson, 1963; Schaf & Burke, 1997; Yawkey & Pellegrini, 1984). The skills that a child develops through play are the stepping-stones for later school experiences and success throughout life. Play fosters the development of the child into the functioning adult (Lehrer, 1981; Sutton-Smith, 1995). Most significantly, play opportunities improve the health and well-being of a child throughout his or her lifetime (Bertrand, Williams, & Ford-Jones, 2008).

Play is an opportunity for caregivers to fully engage with their child. Caregivers are often the child’s first playmates. Early play routines are seen in the interaction between caregivers and their children (Okimoto, Bundy, & Hanzlik, 2000). These play routines provide the foundation for interactions with peers and other adults in the community. Many caregivers begin with play routines at home. As children develop and caregivers become confident, play likely will expand with more participation out in the community. The park, the library, the pool, and the community center are just some of the places where caregivers and their children spend time. As caregivers enter into the community, they form connections with other caregivers. Children begin to interact with
other adults and children as well. Many caregivers choose to participate in playgroups with their young children and other caregivers and children (Maatita, 2003).

Play is a basic human right of every child (United Nations General Assembly, 1989). Every child should be given the opportunity to benefit from participation in play as play is the primary occupation of young children. Play is how young children spend time in their early years. According to the National Early Intervention Longitudinal Study (Hebbeler et al., 2007), the first 3 years of a child’s life are a critical period in which professionals can intervene to improve outcomes in all areas of development to promote participation throughout the lifetime. Early intervention provides resources and services to families who have children up to age 3 with diagnosed disabilities, developmental delays, or substantial risk of significant delays. These supports assist the family in promotion of optimal child development. In the United States (US), early intervention services are provided through Part C of the Individuals with Disabilities Education Improvement Act (Individuals with Disabilities Education Improvement Act [IDEA], 2004). Services are provided to the family in their natural environment to maximize participation of the child. Play is a fundamental right and need of every child and has a secure place in the lives of children at home and in the community.

Play is central to engaging the child and the family. The Occupational Therapy Practice Framework (American Occupational Therapy Association [AOTA], 2014) described occupational therapy’s contribution to promoting participation through engagement in occupation. Play is the occupation of childhood. A caregiver and child’s ability to play promotes participation and maximizes development during the critical time
frame of birth to age 3. Occupational therapy intervention involves identification of everyday activities, settings, and child interests in order to support child learning (Dunst, 2006). Best practice in occupational therapy refers to the use of interventions that have proven effectiveness. Interventions that include the family and focus on play are foundational to participation in the natural environment. The natural environment of the young child is with the primary caregiver and family at home and then expands to include where the family participates in the community. Play provides opportunities for the child to participate in the normal rhythm of family life.

Play increases opportunities for children with special needs. Without participation in a wide variety of play, children are not able to develop necessary skills (Cordier, Bundy, Hocking, & Einfeld, 2009). Play supports development in all areas, and mastery in play is foundational for the acquisition of higher-skills that lead to participation, health, and well-being. Children with special needs may not be offered the same opportunities to play as their peers as the importance of play for this group may not be a priority in the family’s daily life (Brodin, 1999; Burke, 1996). Parents may need assistance in learning how to be playful with their children. Occupational therapists can model play embedded in the daily routines of families. Occupational therapists also can coach families to be sensitive to their children’s individual needs and respond appropriately.

A playgroup is a natural way that many caregivers create their own small community. The community playgroup can offer additional opportunities for play for all children, including children with special needs. Children may benefit in many ways from
group play: learning from other adults, interactions with other children, participating in new and different activities, and becoming more independent and self-confident. Caregivers may benefit from having a social network, meeting other caregivers, learning new fun activities, and receiving group support. Play can be supported and enhanced by occupational therapists through the implementation of a community playgroup. Because playgroups are a typical way for caregivers and their children to play in the community, this approach supports the family in their natural routine. A playgroup can provide additional play opportunities within the community for caregivers to model, interact, and respond to their children.

Play is fundamental to occupational therapy intervention when working with young children and their families. Even though playgroups are an established method to provide intervention, there is a lack of effectiveness evidence in the literature to support the system-wide implementation of playgroups in early intervention. There is a need to provide evidence that supports the effectiveness of interventions used by occupational therapists in early intervention. This playgroup study provides a detailed description of a community playgroup intervention. Information gained from this study will allow individual clinicians to implement evidence-based intervention with the families they provide support to. Early intervention providers can collaborate with families to support the child’s play and participation in the community where they live. Further, effectiveness evidence supports the American Occupational Therapy Association’s centennial vision of occupational therapy as an “evidence-based profession” (AOTA, 2007, p. 1). The purpose of this study was to measure the effectiveness of a community
playgroup for caregivers and their children with special needs as part of comprehensive occupational therapy in early intervention.

**Background**

According to the Data Resource Center for Child and Adolescent Health (2012), 19.8% of children under the age of 18, approximately 14.6 million children, have special health care needs. Children with special needs are in almost a quarter of U.S. households. Research has indicated that as many as 13% of children from birth to the age of 3 have delays that would make them eligible for services, according to criteria commonly used by the states (Rosenberg, Zhang, & Robinson, 2008). The statistics for Florida are very close to those of the nation with 15% of children up to the age of 3 eligible for services (Data Resource Center for Child and Adolescent Health, 2012). The definition of special needs includes individuals who are determined to have circumstances requiring additional care and those who are at risk (McPherson et al., 1998). This definition encompasses children with biological or environmental risk factors that heighten probability of a physical, developmental, behavioral, or emotional condition (Perrin et al., 2007). The determination of eligibility for early intervention is up to each individual state, and each state can determine if it will include “at risk” children in early intervention services (Data Accountability Center, 2012). In Florida, a child is eligible for early intervention services if he or she has significant delays in five domains (cognitive, physical, communication, social emotional, or adaptive) or an established condition likely to result in developmental delay (Children’s Medical Services, 2012).
Participation has been recognized by the World Health Organization (2001) as a key indicator of health and well-being. A main focus of early intervention is the child’s ability to participate at home and in the community. One way that children participate is by play. In a survey of 1,509 caregivers whose children were enrolled in early intervention, nearly 40% reported difficulty participating in community activities because of the child’s special needs (Khetani, Graham, & Alvord, 2013). In order to promote participation in play, services can be delivered in a variety of settings to include educational and recreational activities in the community (Khetani, Orsmond, Cohn, Law, & Coster, 2012). A caregiver’s ability to respond to and manage the child’s behavior is one factor than can affect the family’s access to the community (Khetani et al., 2012).

Early intervention providers, such as the occupational therapist, can provide support for families through coaching and modeling behavior-management strategies and other skills to encourage play in the actual home and community environments where the family wants to participate. As the child plays, any concerns the family has can be addressed as a collaborative team. This collaboration with the family can allow for many successful opportunities for play participation in the community.

Caregiver–child interaction is an important aspect of early intervention. Childress’s (2011) review, examining play in preschool children with disabilities, noted the importance of parental involvement. When parents were involved in play, the child demonstrated increases in communication interaction, toy exploration, purposeful play, attention, and persistence (Childress, 2011). In research focused on children birth to age 3, intervention effects were demonstrated only when parents modified their interaction
style. Specifically, parental responsiveness was associated with positive developmental outcomes (Mahoney, Boyce, Fewell, Spiker, & Weeden, 1998). A more responsive caregiver may learn strategies to support play and have more success with community participation. It is therefore important and necessary to consider how early intervention services affect the interaction style and responsiveness of caregivers.

Occupational therapists currently provide a variety of interventions to young children and their families. In a review of 42 research articles, Kingsley and Mailloux (2013) selected 18 studies to classify services into three main interventions: (a) family-centered and routine-based interventions; (b) community, natural setting, and home-based interventions; and (c) parent training and parent–child relationship interventions. Standard of care in occupational therapy in early intervention consists of the therapist working with the family one on one in the natural environment. The results from a review (Barlow, Coren, & Stewart-Brown, 2002) of parent training programs supported trained therapist facilitation of group interventions. Although the type of group varied from study to study, groups lead by trained therapists demonstrated increased group outcomes when compared to those without attendance of a trained therapist. Although not the standard in early intervention, an occupational therapist might choose to facilitate a playgroup in order to support play participation in the community.

Playgroups have a valuable role in early childhood education (Ramsden, 1997). Children who regularly participate in playgroups demonstrate healthy parental relationships, improved well-being, increased self-confidence, cognitive or behavioral development, and more opportunities for play (Chen, Hanline, & Friedman, 1989; Crowe,
1973; Farrell, Tayler, & Tennent, 2002; Fish & McCollum, 1997; French, 2005; Gray et al., 1982; Hinde & Roper, 1987). In Australia, early-intervention-supported playgroups play a critical role in increasing the effectiveness of early intervention and prevention services for families with young children (Jackson, 2011). Australian-based playgroup literature has highlighted many potential benefits associated with playgroup involvement (Dadich, 2008). Although this context of such research is quite different from current conditions in the United States, there are implications for practice.

**Statement of the Problem**

The evidence has demonstrated that children with special needs appear to have decreased play and playfulness when compared to typically developing peers (Buchanan, 2009; Rigby & Gaik, 2007). Children with physical disabilities may have physical, social, environmental, and personal barriers to play (Missiuna & Pollock, 1991). In assessing the stability of playfulness, Rigby and Gaik (2007) noted that children with cerebral palsy showed decreased playfulness due to barriers to play participation. Other children with special needs may have decreased play and playfulness due to physical, social, environmental, and personal barriers. These children may benefit from inclusion in a community playgroup.

Research on playgroups in early intervention is lacking. Most research on community playgroups is with preschool-age children with the exception of a few studies that have focused on school-age children. The largest and most empirically supported type of peer-play intervention research is about children with autism (Bass & Mullick, 2007). The focus of the playgroups that include children with autism is to increase social
interaction and communication. No study of playgroup intervention has measured playfulness as an outcome of the child and sensitivity and responsiveness as an outcome of the caregiver. Further, there is no research supporting the effectiveness of a playgroup used in early intervention by an occupational therapist in the United States.

Increasing numbers of children with special needs in Southwest Florida require early intervention services (Data Resource Center for Child and Adolescent Health, 2012). These children will likely have barriers to playfulness and participation. As the children grow and develop, the barriers that limit their play also will impact their social and play participation with peers in the community. There is a need to evaluate community playgroups that focus on promoting the playfulness of the child and the sensitivity and responsiveness of the caregiver. Evidence about the effectiveness of community playgroups will determine if occupational therapists should implement these groups as part of comprehensive early intervention for children with special needs and their families. Based on the effectiveness of a playgroup, an occupational therapist might also recommend that the families in early intervention join existing playgroups within their community.

**Purpose of Study**

In response to the need for research to evaluate the effectiveness of a community playgroup, a quasi-experimental, repeated measures design with a pretest and posttest was developed. This study evaluated the effectiveness of an occupational therapist-led community playgroup for children with special needs and their caregivers in early intervention. The purpose of this study was twofold. First, the study examined if the
community playgroup increased playfulness as measured by the Test of Playfulness in children with special needs in the community of Southwest Florida. Second, this study determined whether the sensitivity and responsiveness of the caregiver were modified as a result of playgroup participation. Further, the relationship between the playfulness of the child and the sensitivity and responsiveness of the caregiver was explored. Caregiver and child interactions during free play were recorded before a period of standard-of-care early intervention (Time 1) as well as before (Time 2) and after (Time 3) the addition of playgroup intervention. A follow-up recording occurred 4 weeks following the playgroup intervention (Time 4). Typically, standard-of-care early intervention is provided to families on a one-to-one basis in the natural environment.

**Research Questions and Hypotheses**

Six research questions guided this study:

1. Does standard-of-care early intervention change playfulness? Playfulness was compared between Time 1 and Time 2.
2. Does standard-of-care early intervention change caregiver sensitivity and responsiveness? Sensitivity and responsiveness was compared between Time 1 and Time 2.
3. Does the community playgroup increase playfulness compared to the standard of care? Playfulness was compared between Time 2 and Time 3 and compared to change between Time 1 and 2.
4. Does the community playgroup increase caregiver sensitivity and responsiveness in caregiver–child interactions? Sensitivity and responsiveness scores were compared between Time 2 and Time 3.

5. Are the effects of the playgroup sustained 4 weeks post-intervention?
   Playfulness was compared between Time 3 and Time 4 as well as between Time 2 and Time 4.

6. Is there a relationship between the playfulness of the child and the sensitivity and responsiveness of the caregiver? Playfulness scores and sensitivity and responsiveness were measured at Time 1 and at Time 4.

   It was hypothesized that participation in a community playgroup would increase the playfulness of children with special needs in a community of Southwest Florida. It was also hypothesized that the caregiver would modify his or her interaction style as a result of participation in the community playgroup. Specifically, the caregiver sensitivity and responsiveness would increase after playgroup intervention. It was hypothesized that the more sensitive and responsive caregivers might have more playful children.

**Definition of the Variables**

**Caregiver.** A caregiver is a person who takes primary responsibility for the care of a child. In some circumstances, this is a family member, such as a mother, father, or grandparent. In this study, the term *caregiver* was purposefully used as to include mother, father, or other adult who is primarily responsible for the care of the child.

**Community playgroup.** For the purpose of this paper, a community playgroup is defined as a semi-structured gathering of a group of caregivers and their children in the
community, performing play activities. The community is defined as a social group of any size that has three common characteristics: locale, common ties, and social interactions (Bernard, 1973; Lyon, 1987; Park, 1936). Community is where humans learn to be human, motivated to be together for a common goal (McKnight, 1988; Moore, 1996). Research has supported the idea that caregivers of children with special needs can increase coping ability and decrease hardship and stress through cooperation, discussion, and consultation with other parents and professionals; a positive bond between parents; and use of various community services directed at the child and family (Heiman, 2002). The occupational therapist, working in early intervention, can provide support to allow the family to participate in playgroups within the community. Participation in playgroups may prepare the family to participate in other community resources and services.

A community-based program provides services for children with special needs within their local community. Community partnership and cooperation bring together the most important resources: the people, the existing institutions, the material, and the money that will enable program function and growth (Carpentier, 1993). Early Steps of Southwest Florida was the intervention program providing early intervention services to children birth to age 3 with developmental delays and their families where they live, learn, and play in Southwest Florida. The county parks and recreation department provides programs and services that add to the quality of life for all residents and visitors.

A community playgroup takes place in the natural environment where families participate in play. In order to work within existing institutions in the local community, the community playgroup was run within the existing structure of Early Steps of
Southwest Florida. Regular playgroups had already been established and were being implemented with referrals from primary service providers by Early Steps providers prior to this study. Any family that was interested in participating in the community playgroup discussed the option as a team, and it was included on the Individualized Family Support Plan (IFSP). The physical location was at a local community center.

**Play.** Play was categorized by the Occupational Therapy Practice Framework (AOTA, 2014) as an occupation and defined as any spontaneous or organized activity that provides enjoyment, entertainment, amusement, or diversion. Also described by the AOTA (2014) in the Occupational Therapy Practice Framework, play participation encompasses engaging in play, maintaining a balance of play with other occupations, and managing play objects.

**Playfulness.** Playfulness is an important aspect of play specific to the individual. Playfulness was the primary outcome of the children participating in the playgroup study. The approach that a child takes to the activities of play can be described as playfulness (Bundy, 1997). Playfulness is one aspect of play defined simply as the disposition to play (Skard & Bundy, 2008). Hess and Bundy (2003) found a strong correlation between playfulness, adaptability, and coping skills. Children who were playful were also found to be more creative and competent (Barnett, 1990). Playfulness is each child’s individual approach to play.

Playfulness is defined as consisting of four elements: intrinsic motivation, internal control, freedom to suspend reality, and framing (Skard & Bundy, 2008). In play, intrinsic motivation has been described as play taking place because the player
wants it to occur. Intrinsic motivation is demonstrated when the process of playing is of more importance than the outcome. Internal control describes the extent in which a player is in charge of play actions. For example, is the player choosing what to do? Freedom to suspend reality is explained as how close to objective reality the play is. A playful child may pretend a stick is a spaceship. Finally, framing is the ability of a player to give and read cues. A playful child will be able to communicate with others what he or she wants to do and how others can join in. The four elements of intrinsic motivation, internal control, freedom to suspend reality, and framing allow for playfulness to be observed and measured.

Some researchers have supported the idea that intervention can be effective in improving playfulness in young children (Case-Smith, 2000; Okimoto et al., 2000; Skaines, Rodger, & Bundy, 2006). Other authors have found playfulness to be more stable and resistant to change (Bundy, Shia, Qi, & Miller, 2007; Trevlas, Grammatikopoulos, Tsigilis, & Zachopoulou, 2003), an internal construct more like a personality trait. There is insufficient research to support playfulness as stable or a behavioral trait, and it is a possibility that within playfulness lies the capacity for both (Sanderson, 2010). It is possible that a child’s playfulness remains relatively stable throughout life, but equally possible is the idea that playfulness can be a positive outcome of early intervention.

**Sensitivity and responsiveness.** Caregiver sensitivity and responsiveness refer to a child-centered awareness that guides behavior. The concepts of sensitivity and responsiveness are related and, therefore, included together to describe caregiver
interaction style. The quality of parent–child interactions in the first year of life promotes the development of a secure attachment between parent and infant (Morton & Browne, 1998). The caregiver’s ability to adjust interaction style in order to meet the child’s developmental and play needs determines the child’s development of social competency and identity (Larson, 1995). There is a strong association between sensitive, responsive parenting and a child’s later developmental and social competence (Pearce & Pezzot-Pearce, 1994).

Sensitive and responsive parenting involves acceptance of children as unique individuals (Ainsworth, Blehar, Walters, & Wall, 1978). A sensitive and responsive caregiver is flexible in supporting and responding to the child’s need for autonomy and control. A sensitive and responsive caregiver is able to structure the physical and social environment to enable play participation. A caregiver who is sensitive and responsive will use praise and encouragement as well as respond to any play cues from the child. Caregivers who are sensitive and responsive provide a strong and safe base for children to develop optimally.

Studies throughout the years have supported interventions to increase caregiver sensitivity and responsiveness and in turn facilitate positive outcomes for children (Juffer, Bakermans-Kranenburg, & Van Ijzendoorn, 2007; Landry, Smith, & Swank, 2006; Landry, Smith, Swank, & Guttentag, 2008). Interventions for caregivers that focused on promoting sensitive behavior were also effective in altering insensitive parenting and infant attachment insecurity (Juffer et al., 2007). The interventions used techniques, such as coaching, discussion, feedback, and modeling (video and in person), to effect change
in interaction style. Caregiver interactions also may play a key role in the development of playfulness of the child.

**Rationale and Need for Study**

Early intervention refers to program implementation designed to enhance a child’s development and minimize his or her potential for developmental delay between birth and 3 years of age (IDEA, 2004). Part C of IDEA (2004) stated that early intervention services, including occupational therapy, have to take place in a family-centered, natural setting. Further, IDEA described the role of the occupational therapist in addressing the needs of the infant or toddler related to adaptive development, adaptive behavior, and play. Occupational therapists working in early intervention can demonstrate best practice through the promotion of play in assessment, intervention, and outcomes in order to enable child and family participation.

Current IDEA (2004) Part C policy has demanded the use of client-centered care, occupation-based intervention, and evidence-based practice in occupational therapy. Prior to 1990, intervention philosophies placed the therapist in the role of expert clinician, providing services to children birth to age 3; existing contextual influences place the therapist in the role of facilitator (Mayer, White, Ward, & Barnaby, 2002) in conjunction with the family. The occupational therapist works with families to determine places where play can occur. Coaching the family on specific use of toys and play activities can take place in a variety of play environments. The occupational therapist can model playful interactions with the child that the caregiver can replicate.
One role of the occupational therapist in early intervention is to use evidence specific to the needs of the family and child to promote play participation in everyday family routines. This encompasses supporting the development of playfulness in the child through early interactions. This role may be enhanced by providing social and play participation through community playgroup intervention. This would follow the natural pattern of many family routines from a secure base for play in the home to exploring opportunities out in the community. Playgroups are one way an occupational therapist can support play participation in the community.

Play is one of the most important components in a child’s life. The community is a natural setting that can support and enhance play interactions. Perrin et al. (2007) discussed the need for an evidence base for services that comprise the community system of care. Researchers have suggested that parenting programs can promote both child outcomes and family relationships (Barlow et al., 2002; Chang, Park, & Kim, 2009). There is a call out for research that illuminates the inner workings and effectiveness of play programs that support parents of young children (Quinton, 2004).

There is an abundance of literature on play, but less on playfulness. Few studies look at playfulness as an outcome of intervention. No study to date has investigated the effectiveness of community playgroups on the playfulness of children with special needs. After review of current literature, it appeared likely that a community playgroup involving caregivers could increase playfulness in children with special needs. Such playgroups also might influence the sensitivity and responsiveness of caregivers in play interactions with their children. It is therefore necessary to provide research to support
implementation of community playgroups for children with special needs and inform on the role of occupational therapy in early intervention.

Evidence on effectiveness of playgroup participation can be used to describe the role of the occupational therapist in early intervention. Planning, initiating, leading, and consulting on playgroups are within the scope of the occupational therapist working in early intervention. Positive outcomes for children and caregivers participating in playgroups would support program development. It is important to investigate the effectiveness of community playgroups to determine whether children and families enrolled in early intervention should be encouraged to participate. Public policy and state and local early intervention services support best practice that has proven outcomes. Families make informed decisions about participation based upon available information.

Assumptions and Limitations of the Study

Although a universal definition of play was beyond the scope of this paper, it was assumed that play is an integral part of childhood. A child explores and discovers the world through play. Whereas many authors have attempted to provide a universal definition of play, the ambiguity of play itself leads to little agreement. In fact, in *The Ambiguity of Play*, theorist Sutton-Smith (1997) discussed how different academic disciplines focus on the many aspects of play. The interdisciplinary dedication in the study of play contributes to both its significance and obscure nature. In the Occupational Therapy Practice Framework, the AOTA (2014) defined play as “any spontaneous or organized activity that provides enjoyment, entertainment, amusement, or diversion” (p.
Play impacts learning, and skills learned in play generalize into other contexts leading to success throughout a lifetime (Reilly, 1974; Sutton-Smith, 1997).

Playfulness can be nurtured and encouraged or constrained and limited by both the person (child and caregiver) and environment (physical and social). It was assumed that context affects play and playfulness. The intervention period for this study was 8 weeks. This was based on existing research on playgroups that met two times per week for 4 weeks (Gantz & Flores, 2008; Wolfberg & Schuler, 1993). One study suggested that most families come once per week and still benefit (Wolfberg & Schuler, 1993). Wolfberg (2003) suggested that many children begin to show significant change after about 3 months. It was an assumption of this study that participation in playgroup for 2 months was enough time for the intervention to show statistically significant change. Additionally, with the 4-week standard of care and 4-week follow up, this study spanned 4 months.

The number of participants in each playgroup was limited. For a group to run successfully, it has been suggested that no more than 10 dyads be in a community playgroup. From the researcher’s past experience with running playgroups in the community, it was expected that a few children would not be able to attend any given session due to transportation, illness, weather, or family concerns. In addition to the 10 dyads, the researcher led the groups, and one assistant provided support in setup, cleanup, transitions, and help with caregivers and children as needed. Research from integrated playgroups that included children with autism suggested no more than five members per group (Wolfberg, 2003). Existing early-intervention-supported playgroups in Australia
operate with a ratio of approximately one professional to 10 caregiver–child dyads (Jackson, 2011).

The participants in this study were between 15 months and 3 years old. Some of the children who participated did not have a definite diagnosis. All children that were included in the study did qualify for early intervention in the state of Florida. The lack of diagnosis was a limiting factor related to controlling variables that influence outcome. Existing diagnoses were reported on each child. As mentioned before, research has indicated that children with different diagnostic groups benefit from play-based intervention. Additionally, there is benefit to having children with varied play abilities participating together. Specifically, children with higher play skills can model for children with lower level play skills. Children paired with peers with higher-level play skills may increase emergence of initiation and response in play or increase the frequency of these behaviors (Tanta, Deits, White, & Billingsley, 2005).

An occupational therapist implementing a community playgroup in early intervention will utilize a similar intervention approach with a different method of service delivery as described by the Occupational Therapy Practice Framework (2014). A playgroup should include aspects important to early intervention, but these vary depending on the group. The variability might affect outcomes from group to group, but the playgroup itself would be what influenced playfulness over time. The principal investigator (PI) planned and implemented the community playgroup. The PI has over 10 years of experience working as an occupational therapist and has specific training in
leading playgroups. Different group leaders would influence the group with their own personality and individual characteristics.

This study used a structured playgroup, based on existing programs, described in the literature, practiced in the community, and modified by the PI. The structured nature of the community playgroup is designed to provide many opportunities for play so that different individuals can lead. Although the PI implemented the playgroup for the purpose of this study, the assumption was that another occupational therapist or early intervention specialist could run the group with the same structure and have a similar outcome. This would allow for sustainability of a playgroup in the community.
Chapter 2: Selected Review of the Literature

There is a large body of literature exploring and describing play and abundant research on the impact of play on all areas of development. Limited research exists on occupational therapy and play and playfulness as child outcomes of early intervention. There are few articles describing playgroups, and there is a gap in the literature about the effectiveness of these playgroups for use in early intervention. This chapter presents a review of play theory and the types of play as well as describes the importance of play to occupational therapy. The model for development and implementation of a community playgroup is outlined and explained. A critique is provided of the literature on measurement instruments: the ToP (Skard & Bundy, 2008) for playfulness of the child and the National Institute of Child Health and Human Development (NICHD) Early Child Care Research Network (1999) scales for sensitivity/responsiveness of the caregiver. This chapter will review the literature on play as intervention, play in the community, and caregiver inclusion in play. The review of the literature concludes with a summary of the evidence and direction for the methodology of the community playgroup study.

Play Theory

Play is an important component in the first 3 years of a child’s life and served as the foundation for a community playgroup in this study. Piaget’s (1951/1962) theory of cognitive development described how children up to the age of 3 use play to master their environment and learn about the objects and people that surround them. When a child has access to the environment, he or she assimilates or integrates new experience with
prior experience. Children faced with a situation where they are unable to use their previous experience to guide them will accommodate or change in order to gain knowledge. Piaget also described the positive emotion of joy as a by-product of play.

At this same critical stage of birth to age 3, Erikson (1963) discussed the development of trust and autonomy in psychosocial theory. Play is related to ego development and coping skills. Early interactions between a child and the caregiver can develop trust, safety, and security. When children feel safe and secure, they are able to explore the environment and develop control of their physical and social play skills. Mastery in play can allow a child to cope with anxiety and difficult situations in everyday life.

Attachment theorists look at a child’s relationship to the caregiver and the child’s ability to adapt to environmental demands in the first few years of life. Bowlby (1969) suggested that a child’s ability to attach to a caregiver gives the child a secure base from which to explore the world. Building on this concept, Ainsworth and Bell (1970) described styles of attachment. Infants with secure attachment develop self-esteem and have success in other social relationships.

During play, children are often within the zone of proximal development, described by developmental psychologist Vygotsky (1978). The zone of proximal development refers to a point at which children participate at their highest levels of competence. Scaffolding represents a caregiver assisting with elements of an activity that are beyond the capacity of the child during the zone of proximal development (Wood, Bruner, & Ross, 1976). The timing of interaction by the caregiver is important in
development and participation of the child. Building on Vygotsky’s work, Rogoff et al.’s (2007) sociocultural view of development drew attention to the notion of children both shaping and being shaped by their social and physical environments.

Cognitive-developmental, psychosocial, and attachment theories all emphasize the importance of the early routines and play of children. They also highlight the importance of context: physical and social environment. These theories add depth to the development of play and playfulness in the child and inform on foundations for intervention.

**Types of Play**

**Self and object play.** Many types of play emerge as a child develops. Each type of play is important in building skills for successful play participation. Often, types of play that are described in the literature coincide with play theory. Two types of play are associated with movement and exploration. Active play refers to motor control and movement in space through overcoming obstacles. Exploratory or sensorimotor play involves children’s ability to explore themselves and the objects around them using their sensory system: sight, sound, touch, smell, and taste (Hughes, 2010).

As children become able to explore their environment and develop their sensory and motor abilities, their play with objects becomes more complex (Hughes, 2010). Repetitive motions and banging are replaced with more refined attempts to interact with objects in varied ways. Manipulation and constructive play require a child to combine previously developed skills of imitation and purposeful anticipation. When children near their second year, they attempt to integrate all the information that they have observed
and copied. Play is seen as children use objects to represent other things in symbolic play and create increasingly complex make-believe situations for themselves.

**Social play.** Social play is a crucial part of child’s ability to participate in play. Social play involves interaction with at least one other individual and consists of three phases: (a) orientation, which involves awareness of the child and other children, the play materials, or active choice to not enter play; (b) parallel or proximity play, which is playing independently beside or near another child, using the same space or materials, or engaging in similar activities; and (c) common focus, including taking turns, sharing, giving, and requesting, showing something, and making requests to play (Bass & Mulick, 2007; Power, 2000; Yang, Wolfberg, Wu, & Hwu, 2003). Social play usually begins with primary caregivers, immediate and extended family, and then includes other adults and peers.

Peer play is central to childhood and increases in frequency in the early years (Simon & Daub, 1993; Sutton-Smith, 1997). In social play, children learn to interact through imitation and modeling, which develops essential interactive behaviors (Aeri & Verma, 2004; Bandura, 1989; Power, 2000). Social play is foundational for building skills in the early years of a child’s life, and deficits in this area tend to become more pronounced later without successful intervention (Strain, 1981; Strain & Danko, 1995). Occupational therapists working in early intervention can provide families and children early opportunities to introduce and support a child’s social play.

Children with special needs may experience the types of play with variation. Children with sensory, social, and intellectual impairments prefer more solitary or
parallel play and engage less in imaginative role-play or symbolic play with objects (Hughes, 2010). Caregivers support play by providing objects that are appropriate for the age and stage of the child. Accessible space and a predictable time are supports for developmental progression of play. The inclusion of playmates is essential in social competence in play.

**Occupational Therapy, Occupational Science, and Play**

Occupational therapists have adopted theories from historical play theory and developed some of their own theories on play. The importance of play to overall health was emphasized by early occupational behavior theorists (Reilly, 1974). Reilly (1974) cautioned that trying to dissect play into recognizable and identifiable parts would take away the very essence. According to Reilly’s work, play is exploration motivated by curiosity where persistence and practice yield mastery. This model of play has been revised and expanded by occupational scientists highlighting the importance of play as the occupation of childhood.

Play is traditionally used by occupational therapists as a therapeutic tool. Occupational science describes play in the typical development of infant–toddler occupations, specifically infant space theory (Pierce, Munier, & Myers, 2009). Infant space theory is an example of descriptive occupational science that details the relationship between the search for challenge and developing abilities of the child. Infant space theory assists occupational therapists working in early intervention to communicate with families about the development of typical play occupations (Pierce et al., 2009). In early intervention, play participation is increased in the context with which family
members are familiar: the home. Infant space theory claims the development of the child is enhanced by adding opportunity embedded in the daily activity of the family.

Models of play and playfulness have been developed in occupational therapy in order to assess a child’s ability to play. Bundy (1997) defined play as the transaction between the individual and the environment. In this transaction, playfulness is characterized by the child’s intrinsic motivation, internal control, freedom to suspend reality, and framing. Bundy described play as a continuum of behaviors influenced by this transaction between environment and child. Occupational therapists are able to observe these behaviors as a means to assess a child’s playfulness.

Cooper’s (2000) contextual model of play and playfulness built on the work of Bundy (1997) to describe the influence of the immediate environment on the child’s playfulness. Physical and social elements can either stimulate or restrict play. The physical environment can include the play space, play materials, and location. Social elements can include the caregiver, family members, and other children and adults. Other important influences that Cooper described as difficult to observe include socioeconomic status, family, community, ethnic identity, and gender role. The contextual model of play incorporates the players, the play environment, and the dynamic nature of play itself.

Both historical play theory and play theory created by occupational therapists inform play-based interventions used by occupational therapists. In order to develop and implement a playgroup in early intervention, it becomes necessary to choose a model for translating theory into practice. The model for practice describes a framework to organize influences on play and playfulness and determine a focus for the intervention.
A Model for the Community Playgroup

The IDEA (2004) indicated that the first 36 months of a child’s life is a critical developmental period. During this window, effective community programs involving caregivers can decrease developmental delay, reduce the need for later services, and maximize the child’s ability to reach his or her full potential (Goode, Diefendorf, & Colgan, 2011). In order to develop and implement effective community programs for children and their families, it is important to consider the context in which care is provided and determine a model to guide intervention.

The most important aspect of early intervention is involvement of the family. A child with special needs can affect a family both emotionally and physically (Heiman, 2002). The occupational therapist must be sensitive to the difficulties faced by the family while implementing early intervention services. One must carefully consider all factors that influence a family’s ability to belong and participate in the community.

The person-environment occupation model. The person-environment occupation model provides a framework for the occupational therapist to affect a child’s occupational performance by working with the family in client-centered care. Law et al. (1996) described occupational performance as the ability to choose, organize, and perform meaningful occupations that are culturally defined and age appropriate for looking after one’s self, enjoying life, and contributing to the community. The occupational performance of the child and family is determined by their ability to participate. This includes participation in play activities both in the home and in the community.
The framework used to implement and measure the effectiveness of a community playgroup in this study was the person-environment occupation model. The desired outcome of the community playgroup was twofold. The first outcome was improved occupational performance in both the child and the caregiver, demonstrated by increased playfulness in the child and increased sensitivity and responsiveness by the caregiver. The second outcome was increasing child participation in the community through participation in the playgroup. In order for the playgroup to be effective, it was important to consider each component in the person-environment occupation model: the person, the environment, and the occupation. Caregiver and child participation in the playgroup would demonstrate the transitive nature of all components. Change in any one of these individual areas would effect change on the whole, thus altering occupational performance and improving participation.

**Person.** In early intervention, the person is not only the child who might need services, but also the caregiver, the child–caregiver dyad, the siblings, and the extended family (such as grandparents, aunts, uncles, and cousins). The person can assume a variety of roles simultaneously. These roles change across time and context in their significance (Law et al., 1996). This is important in facilitating the role of child, sibling, caregiver, family member, and member of the community. In early intervention, modeling and coaching are intervention techniques used working with caregivers, so they are able to scaffold play and support playful interactions (Kingsley & Mailloux, 2013). In social situations, children often learn from imitation of caregivers or other children.
Each individual has unique physical, emotional, and spiritual characteristics that influence play and playfulness. The physical, socioemotional, and intellectual development of a child are directly influenced by the quality of the child’s play (Parham, 2008). Individual characteristics of the child with special needs may constrain play participation and limit opportunities for optimal development. Research has shown that children with disabilities have greater restrictions based on the nature and frequency of play opportunities (Pollock et al., 1997). A community playgroup could provide additional play opportunities for children with special needs.

In a community playgroup, the occupational therapist uses the beliefs, values, and skills of each child and caregiver involved to enhance and support participation. The play activities used in a playgroup can be modified and adapted to meet the skill level of the child and caregiver. During the playgroup, the occupational therapist can coach caregivers to be sensitive by reinforcing identification of the child’s individual play cues and prompting timely and appropriate responses (Case-Smith, 2013).

Caregivers have reported that a playgroup supported them as they sought validation, claimed and exercised expertise, and developed a sense of community (Maatita, 2003). In the playgroup, the caregiver assists or scaffolds in play that the child may not be able to perform alone (Jackson, 2011; Wolfberg, 2003). The child benefits from the playgroup as play is imitated, practiced, and scaffolded to promote mastery and confidence.

Environment. The term environment is defined by Law et al. (1996) as those contexts and situations that occur outside individuals and elicit responses from them. The
environment is the context where play takes place. This includes cultural, socioeconomic, institutional, physical, and social considerations (Walker & Ludwig, 2004). The child exists within the family as part of the community, influenced by policy. In the United States, the child and family are influenced by early detection of children at risk, public policy, IDEA (2004) Part C, early intervention services, and individual providers. Children in early intervention may have physical, social, environmental, and personal barriers to play (Missiuna & Pollock, 1991; Nabors & Badawi, 1997). The play environment of a child is the natural setting described by IDEA legislation. This natural setting would be any place that a child typically might play. Early play begins in the home, and as the child’s abilities change, so do the environments to which the child has access.

The child’s immediate environment can encourage or limit play activities. The physical and social environment can mold and shape the play skills of a child (Cooper, 2000). A study examining the stability of playfulness in 16 school-aged children with cerebral palsy found that children were most playful at home and least playful at school, suggesting that playful behaviors are influenced by factors external to the child (Rigby & Gaik, 2007). Early intervention providers utilizing a person-environment occupation approach should consider varying physical (both indoor and outdoor) and social (caregiver, peers) environments in the community to improve play and play participation. Variety of the physical environments can influence physical competence in those environments. Varying the social environment can affect the social competence of the child. Social competence allows a child to participate in many social environments both
in the home and in the community (Case-Smith, 2013). Toys that require sharing as peer initiation strategies (Strain & Odom, 1986; Tanta et al., 2005) have been effective in increasing social interactions. Social competence becomes increasingly important as the child grows and develops from primarily caregiver–child play at home to more social play within the community.

The community playgroup would provide an environment to support and enhance playfulness and participation. Several studies have found support for the use of music in early intervention (Nicholson, Berthelsen, Abad, Williams, & Bradley, 2008; Nicholson, Berthelsen, Williams, & Abad, 2010). Adding high-quality play toys to the environment could result in positive social interactions. A systematic review of the effects of type of toys in children ages 3 to 5 reported that social toys, such as balls, dress-up, housekeeping toys, blocks, puppets, and cars or trucks, promote social interaction (Kim et al., 2003). Play with unstructured toys, such as balls and blocks, had similar results. Although Kim et al. (2003) reported about preschool-aged children, similar age-appropriate toys would be utilized in the community playgroup to develop play skills and encourage social interaction with peers. A study exploring play materials in early intervention noted the importance of using toys easily accessed by the family in their own home or available through early intervention services (Nwokah, Hsu, & Gulk, 2013). Play with other caregivers and peers in an environment rich in high quality, reproducible and obtainable play objects could encourage development of social competence and play participation.
**Occupation.** Occupations are self-directed functional tasks and activities that a person engages in over a lifespan (AOTA, 2014). Play is the occupation of childhood. A caregiver interacts with the child through early play routines. The importance of play to optimal development is well established in the literature. Play is a major component of early intervention for children with special needs. Enhanced opportunities for caregiver–child interaction through play might increase family and parental responsiveness to the child and promote occupational performance. Engaging in play also could support the development of social skills necessary for participation, beginning with caregivers and transitioning to participation in school and in the community.

Giving children and caregivers an opportunity to play fosters dignity, competence, and health. Children with special needs spend a greater percentage of time in self-care, therapy, and educational remediation than play activities compared to typically developing peers (Howard, 1996). This orchestration of time affects how a child learns to play and how play affects development and participation. Occupational therapists can educate families to embrace opportunities for play participation, both at home and in the community. Families can demonstrate understanding of the importance of play by incorporating opportunities for play participation in daily routines.

The community playgroup in this study used the occupation of play to promote participation. Play routines between caregiver and child were modeled through the use of song and dance. In a randomized controlled trial in Jamaica, mothers who were taught to interact with their children with play and songs had children who demonstrated significantly better problem solving and cognition at 24 months (Gardener, Walker,
Powell, & Grantham-McGregor, 2003; Walker & Ludwig, 2004). Gross motor and exploration play has been used as a means to increase initiation and responses in children with delayed play skills (Tanta et al., 2005). Similarly, in physical play activity, children developed and refine locomotion, eye-hand coordination, and manipulation skills (Cooper, 2000). During the playgroup, caregivers had the opportunity to scaffold play skills as children practiced skills, explored the play environment, and interacted with social toys. Each playgroup session was designed to give the caregiver and child occasion to play.

**Measurement of Playgroup Outcomes**

**Measuring playfulness.** Valid and reliable measures of playfulness are difficult to find. There are two established measures for playfulness: the Children’s Playfulness Scale and the ToP. Both of these instruments have established psychometric properties, published results, and been used in research. The Children’s Playfulness Scale has been revised and is valid for use by teachers in preschool classrooms (Barnett, 1990). It is recommended that the person scoring the results be familiar with the child, spending a minimum of 30 hours becoming familiar with the child’s playful style (Muys, Rodger, & Bundy, 2006). It also should be noted that initial studies of the Children’s Playfulness Scale were with typically developing children and did not determine the assessment’s validity for children with disabilities.

The other measure of playfulness is the ToP (Skard & Bundy, 2008). Development of the ToP by Bundy was influenced by the elements of play, cited in play literature. The ToP is an observational assessment that attempts to objectively measure
the four elements of playfulness: intrinsic motivation, internal control, freedom to suspend reality, and framing. Children ages 6 months to 18 years can be assessed using the ToP. The ToP has been revised three times to reflect research on individual items, Rasch fit statistics, validity, and user understanding (Muys et al., 2006). The ToP Version 4 was utilized for the playgroup study.

The ToP has been found to yield valid and reliable results in children who are typically developing (Bundy, Nelson, Metzger, & Bingaman, 2001) and in children with special needs (Okimoto et al., 2000; Reid, 2004). Several studies have investigated the use of the ToP with children with a variety of diagnoses. Researchers have used the ToP to determine the playfulness of children with autism, attention-deficit hyperactivity disorder, cerebral palsy, spina bifida, and developmental delay (Harkness & Bundy, 2001; Leipold & Bundy, 2000; Morrison, Bundy, & Fisher, 1991; Okimoto et al., 2000; Reed, Dunbar, & Bundy, 2000). The ToP has been identified as being most relevant in a setting that supports free play in natural play settings.

The ToP was chosen for use in this study for a variety of reasons. First, the content of the assessment was determined to be valid through a literature review, and a moderate correlation of Version 3 was established with the Children’s Playfulness Scale (Barnett, 1990). Next, the ToP is valid with both boys and girls (Tyler, 1996) and across different cultures (Porter & Bundy, 2000). Additionally, internal consistency for the ToP is recognized with a Cronbach’s alpha near 1.00. Finally, interrater reliability has been reported at 95% \( (N = 300) \) with goodness of fit to the Rasch model, and the test–retest is reliable. It should be noted that the most reliable scores were determined with 15 minutes
of observation and when children were tested twice, alone and with a playmate (Skard & Bundy, 2008). The ToP is a valid and reliable assessment used in occupational therapy to measure the playfulness of children in free play.

Administration of the ToP involves four major steps. The first step is identification of the player. In the playgroup study, the players were the 10 children participating in the community playgroup. The second step is selection of the play environment. For assessment of playfulness in the playgroup study, each child would play in a familiar play environment during a typical playtime as determined by the caregiver. Third, the child is observed and video-recorded during 15 minutes of free play by an unobtrusive observer. Finally, the video-recorded free play is scored according to the ToP manual (Bundy, 2010).

**Measuring sensitivity and responsiveness.** Sensitivity and responsiveness have been measured in a vast number of ways in the literature. In a review by Halle, Anderson, Blasberg, Chrisler, and Simkin (2011) evaluating the quality of caregiver–child interactions, nearly half of the studies used a unique, author-developed observational tool. The most often utilized instrument for measuring caregiver–child interaction was a coding scale modified from the NICHD Early Childcare Research Network (1999) instrument. Often researchers modified the coding scales for use in their particular research study.

There were similarities among the studies using modified NICHD scales. Most caregiver–child interaction measures used video recording of semistructured caregiver–child interaction. The video recordings were later scored using the modified scales by
trained researchers. The training of the researchers and raters varied: some studies required workshops and certifications, and some required rigorous training for up to 6 months. Based on the need for a uniform measure and built upon the codes being utilized, a new instrument for measuring caregiver–child interactions, the Quality of Caregiver Child Interactions for Infants and Toddlers measure, is in development by the Office of Planning, Research, and Evaluation of the U.S. Department of Health and Human Services (Halle et al., 2011).

The NICHD Early Childcare Research Network (1999) scales have a subscale for caregiver sensitivity and responsiveness. This subscale measures a caregiver’s sensitivity and responsiveness on a 7-point scale from 1 (very low) to 7 (very high). The NICHD Early Childcare Research Network scales were adapted during a University of Miami study for use with 15- to 30-month-old children, potentially demonstrating autistic spectrum disorder (Baker, Messinger, Lyons, & Grantz, 2010). These adapted scales have been utilized with reported reliability in a number of published studies (Halle et al., 2011). Based on an extensive literature review, this subscale is the most valid measure available to measure sensitivity and responsiveness in caregivers.

Baker, Messinger, Ekas, Lindahl, and Brewster (2010) examined nonexpert ratings of parent–child interactions using the modified NICHD scales and concluded that small groups of nonexperts can effectively act as reliable raters. Nonexperts were able to adequately recognize maternal sensitive structuring, and nonexpert sensitivity ratings replicated findings from Baker et al. (2010). As few as six nonexperts provided reliable
rating of sensitive structuring, and concordance with expert ratings was moderately high. The ability to use nonexpert raters increases the utility of these adapted scales.

Administration of the NICHD scales, including the caregiver sensitivity and responsiveness subscale, is completed with four main components. First, the caregiver–child dyad is identified. Next, the dyad is instructed to play typically. The dyad is then observed and video-recorded during free play. Finally, raters score the caregiver sensitivity and responsiveness during the interaction using the modified scales and descriptions within the subscale (Baker, Messinger, Lyons, & Grantz, 2010).

**Play as Intervention**

In addition to the contribution to growth and development, play is a means to assess children’s development and provide intervention. Occupational therapists observe play to understand how children participate in the world around them. A child’s play discloses information about physical and cognitive abilities, social participation, imagination, independence, and coping (Knox, 2008). Play has come to be regarded as a child’s primary occupation, providing valuable information about competence and function. Occupational therapists need to consider play an important outcome of intervention (Canadian Association of Occupational Therapists, 1996; Rodger & Ziviani, 1999). Play seems an obvious medium for interaction of caregivers and their children as it is the natural context within which children learn to socialize and make friends (Power, 2000).

Studies have used parent education about play to improve child outcomes. One community-based, randomized controlled trial in Jamaica used handmade toys to educate
parents about interaction with their children (Powell, Francisco, & Maher, 2003). At the 1-year follow-up, the children whose parents used the handmade toys showed significant improvements in developmental quotient, hand–eye coordination, and speech development when compared to the control group. Another randomized controlled trial educated parents of 24 low-birth-weight infants about interactive play (Achenbach, Howell, Aoki, & Rauh, 1993). Follow-up at 9 years revealed that the children of the parents who were educated performed as well as typically developing children, whereas other low-birth-weight infants displayed significantly worse development relative to normal children. Results from these trials were promising with regard to caregiver education, but did not report on play outcomes in the children.

Play has been proven to be an effective intervention with children regardless of age, gender, or presenting issues (Bratton, Ray, Rhine, & Jones, 2005). Play was more effective than isolated exercise in occupational therapy when working with two children, aged 6, who had survived burns (Melchert-McKearnan, Detiz, Engel, & White, 2000). Case-Smith (2000) asked occupational therapists to categorize interventions used with 44 preschool-aged children receiving occupational therapy services for fine motor delay. The intervention categories included sensory integration, motor and manipulation, self-care, and play and peer interaction. The use of play and peer interaction in intervention sessions was the only significant predictor of fine motor outcomes. There is support for the use of play in occupational therapy intervention with all children, but more research is needed to describe play intervention and to determine the effectiveness of play intervention on younger children.
Positive outcomes related to play have resulted from group intervention. A review of four successful, peer-based, intervention programs for children with autistic spectrum disorder emphasized the importance of the play environment, the role of the peer, and the role of the adult in successful group implementation (Prendeville, Prelock, & Unwin, 2006). Another study found that five children, age 2 with disabilities, demonstrated increased pretend play in an inclusive group program (DiCarlo & Reid, 2004). The results from DiCarlo and Reid’s (2004) study encouraged intervention with children at a very young age to advance their level of play. The study also provided support for the idea that group intervention can improve developmental play as an outcome of intervention.

Children who participate in play programs will have lifelong benefits. Raine, Mellingen, Liu, Venables, and Mednick (2003) looked at outcomes of 83 children ages 3 to 5 in an experimental enrichment play program. These children showed lower rates of schizotypical, antisocial, and criminal behavior at ages 17 and 23. These findings are consistent with an increasing body of knowledge that implicates an enriched, stimulating environment as beneficial for psychological and behavioral outcomes with young children. Raine et al.’s longitudinal study is encouraging, suggesting that the effect of a playgroup is sustainable. The playgroup has long-term, lasting, positive effects on the health and well-being of the child.

There is support for use of play in occupational therapy intervention when working with children. Further, play is more effective than other interventions with regard to child outcomes. Educating parents about the play skills of their child and about
coaching and modeling play activities can facilitate gains in a number of areas of development for the child. Younger children who participated in playgroups improved their play skills (DiCarlo & Reid, 2004). Play programs have been established with long-term outcomes related to health and well-being (Raine et al., 2003). Few studies in the literature have evaluated playgroups with the early intervention population, and more research is needed to determine the effectiveness of playgroups with this age group.

**Play in the Community**

The community is an emerging practice area where occupational therapy can promote play participation. Following the global trend for free play in natural settings, occupational therapists have shifted the concentration of their practice from the medical model to different types of service delivery within the community. Dunst (2006) emphasized the importance of intervention involving play support in the natural environments where play occurs to foster overall development. The natural progression of play in children begins at home and evolves to participation in the community. Further investigation revealed success with pediatric programs in a community setting.

The community is an appropriate setting to provide intervention. A randomized control trial of 136 mothers and their 7- to 10-year-old children in a community-based, family-supported intervention demonstrated modest positive effects in promoting the healthy adjustment of children with specific chronic illness (Chernoff, Ireys, Devet, & Kim, 2002). The intervention was focused on activities (scrapbooking, role playing, reading books), which promoted mental health, adjustment, and self-esteem for the children as well as support for the mothers. Chernoff et al. (2002) noted that the outcome
was similar for all diagnostic groups in the study, suggesting that a community-based intervention might be effective for children with other chronic illnesses as well. Their particular study described older children and standard, one-to-one care intervention. The results supported use of a community-based intervention utilizing age-appropriate play activities.

A few reports documented community-based playgroups with positive outcomes implemented by other professionals. Lipman and Boyle (2005) randomized a group of 116 mothers and children in Canada to receive only community resources or participate in an intervention group. The intervention group participated in a 10-week community program that offered group support, education, and parallel children’s activities for single mothers and their children in Canada. Short-term effects were seen in the mother’s mood and self-esteem, but not on social support and parenting. Kern and Aldridge (2006) implemented a music-oriented community play program with four boys with autism. Results from their multiple-baseline study did not show that the musical adaptation of the playground increased social interaction, but the program itself increased peer interaction and meaningful play on the playground.

Community-based programs implemented in Australia by occupational therapists emphasized use of existing structures and inclusion of the family and key caregivers for success (citation). One community-based, group kindergarten program implemented by occupational therapists in South Australia utilized both parents and teachers for intervention (citation). Priest (2006) suggested the use of families, the children, the teachers, and the community to facilitate developmental gain for at-risk children through
the Motor Magic program. The Motor Magic program is a 10-week program based in a kindergarten setting that incorporates structured gross, fine, and sensory-motor activities as well as informal support for teacher and parents. Results from the program showed improvements in both children and parents and positive changes within the family unit (Priest, 2006).

Walter and Cusick (1996) developed a community-based occupational therapy program with a booklet of activities available to teachers and parents of children ages 3 to 5 to aid in early identification of at-risk children. Preliminary evaluations of the program found that the structured activity sessions in the booklet aimed at enhancing child development were helpful tools. These studies (Priest, 2006; Walter & Cusick, 1996) highlighted caregiver inclusion and education as well as the use of structured developmental activities, not specifically play, to identify children at risk and provide support in a community setting.

Occupational therapists have used interventions that incorporate play in community programs throughout the years. Two of these studies were carried out in Canada. Law et al. (2005) found improved occupational performance of 167 children using a client-centered, one-to-one occupational therapy intervention based in the community. The intervention was client specific and based within the community versus a clinical setting. In another Canadian study, children with disabilities ages 5 to 7 were included in a group program. This program used camp activities in a group setting. The children in the study demonstrated significant improvements in social play participation and parental reaction (Lehrer, 1981).
In the United States, occupational therapists have reported positive outcomes from play programs in the community. One such program was a preschool playgroup for socioculturally disadvantaged children aged 3 to 5 (Benzing & Strickland, 1983). The program took place weekly at a local library. Intervention consisted of activities designed and implemented by the occupational therapist that were appropriate to the setting. A parent-child playgroup for children at risk for developing psychiatric disorders was also implemented by an occupational therapist at a local day care (Olson, Heaney, & Soppas-Hoffman, 1989). Both of these studies reported positive outcomes, but with limited detail as to measurement of the outcomes. These reported studies highlighted the 3- to 5-year-old population, and current research is needed to show the efficacy of community playgroups in early intervention aimed at younger children and their families.

The literature reported supported the use of community-based intervention with children of various ages and abilities (Chernoff et al., 2002). The community is an appropriate and effective setting in which to provide intervention. It is important to use existing supports in the community and involve the caregivers in group interventions. Play has been used as intervention in the community by occupational therapists in order to increase participation by optimizing outcomes (Priest, 2006; Walter and Cusick, 1996). A few group play programs implemented in the community by occupational therapists have reported positive outcomes (Benzing & Strickland, 1983; Lehrer, 1981; Olson et al., 1989). However, there is limited evidence on the effectiveness of playgroups in children from birth to age 3. There is also little information in the current literature about outcomes of community playgroups in early intervention, and no study to date has
investigated the influence of a community playgroup on playfulness of the child or responsiveness of the caregiver.

**Caregiver Inclusion in Play**

Caregiver inclusion in play can promote positive relationships and increase child participation. Relationships are the essence of intervention with children (Case-Smith et al., 2007). The relationship includes dynamic interactions between caregivers, the professionals, and the child. In family-centered practice, the family, not just the child, is the recipient of services (Case-Smith et al., 2007). The brain of a child is strengthened by positive early experience, especially stable relationships with caring and responsive adults (Goode et al., 2011). Family-centered care in early intervention can positively influence caregiver interaction style. Research evidence has shown strong support for family-centered services in supporting the psychosocial well-being of children and their families (King, Teplicky, King, & Rosenbaum, 2004). Occupational therapists can support the natural play routines of caregiver and child in a community playgroup.

Sensitive and responsive parenting is associated with encouraging child outcomes. High-quality caregiver–child interaction influences child outcomes (NICHD Early Child Care Research Network, 1999). Positive parenting demonstrated by family modeling is associated with high self-esteem as well as social and academic competence (Kumpfer & Bluth, 2004). Studies described by Olson et al. (1989) positively correlated secure attachment in infancy to a child’s development of competence. Evidence from Swick, Da Ros, and Kovach (2001) supported the idea that children’s emotional development is
fostered by ongoing, nurturing interactions with their parents. Children who experience loving relationships and empathetic interactions learn how to be nurturing themselves.

Children’s playfulness and play skills are also derived from early play routines between mother and infant (Okimoto et al., 2000). Caregivers of children with special needs may need support to embed play into their daily activities. Early intervention can help caregivers change their style of interaction in order to be more responsive to their children (Fey et al., 2006; Yoder & Warren, 2002). Early intervention programs encourage parents to be more responsive to their children through play interactions. Including the caregiver in the early intervention playgroup facilitates healthy attachments and relationships as well as develops early play routines between caregiver and child (Spiker, Boyce, & Boyce, 2002).

Through use of community playgroups, occupational therapists are able to model and practice caregiver play routines. As parents try out suggested play activities, the number of developmental and learning opportunities for the child increases (Dunst, Bruder, Trivette, Raab, & McLean, 2001; Dunst, Hamby, Trivette, Raab, & Bruder, 2000). Play interactions between caregivers and their children in a supportive environment have potential to carry over to the home and into the community. Further, confidence in play interactions in a community setting may encourage additional play participation in the same and other community settings.

Play with caregivers is the foundation for social and peer play. It is the sensitivity of a caregiver that contributes to secure infant–parent attachment in addition to the social and emotional development of the child (Thompson, 1998). Increased caregiver
sensitivity during the critical stages of infancy and toddlerhood is directly related to
complexity of peer play (Howes, 1997). Prendeville et al. (2006) found that the role of
the adult is a key factor in peer play of children with autism spectrum disorder. Inclusion
of the caregiver in play supports social participation in play. With their caregivers
present, children may feel more confident to explore the physical and social play
environment.

The use of play as intervention utilizing both caregiver and child has been
established in the literature. In two meta-analyses on the efficacy of play therapy, both
LeBlanc and Ritchie (2001) and Bratton et al. (2005) found that including the parents in
play produces the largest treatment effect. Interaction is intended to foster attachment
between parent and child. Early attachment in caregiver relationships helps a child to
develop positive coping strategies. A child who is able to cope is more open to
interaction with the environment through problem solving. Inclusion of a caregiver in a
community playgroup can provide the best carryover of skills and produce the largest
treatment effects.

A caregiver–child relationship develops and changes through interaction and is
described by mutuality and responsiveness (Hinde & Roper, 1987). Occupational
therapists can facilitate playfulness with caregivers and their children in a community
playgroup. This allows the caregiver–child dyad to interact, learn to follow leads, and
read cues in a natural setting. This play practice can influence a change in the caregiver’s
sensitivity and responsiveness. A community playgroup is beneficial for children with
special needs and their caregivers as it increases positive play opportunities.
Evidence Summary

In play, children are able to investigate the environment around them. Play is the pathway leading to skill development in all domains of function. A child’s play also discloses important information about development while providing a window for professionals to assess and intervene. Establishing an environment rich in play opportunities is one way to increase every child’s chance for participation now and a productive adulthood later in life. Play is an effective intervention for children with special needs. In psychology, play therapy is a proven treatment for children of all ages and issues (Bratton et al., 2005). In occupational therapy, play is successfully used to allow children maximum opportunities to participate within their environment, leading to skill development and optimal occupational performance (Benzing & Strickland, 1983; Case-Smith, 2000; Law et al., 2005; Lehrer, 1981; Olson et al., 1999).

Play is a social experience, and many children with special needs have fewer exposures to play with peers. Social play participation in a child’s natural environment can be facilitated by community playgroups. Many occupational therapists have shifted focus from a clinical setting to provide intervention where children live, learn, and play. Community interventions with children have demonstrated improvements in developmental domains as well as parent participation (Lehrer, 1981; Priest, 2006). Play programs in the community have had success in outcomes with both caregivers and the children themselves. Early intervention playgroups are operating with documented positive outcomes in Australia (Dadich, 2008; Jackson, 2011). Community playgroups
may be an important part of early intervention in the United States, specifically in Southwest Florida.

Including the caregiver in playgroup can help to foster early positive interactions. A community playgroup provides play-based intervention to the family as a unit. Community playgroups afford an opportunity to model sensitive and responsive parenting skills to caregivers in a natural setting. A comprehensive review of the literature revealed that play is an effective means to provide intervention, the community is an important and appropriate place, and including caregivers is essential. The ToP (Skard & Bundy, 2008) and the NICHD Early Child Care Research Network (1999) scales are reliable and valid tools to measure outcomes of a community playgroup. A community playgroup can serve as part of a comprehensive program for occupational therapists to provide effective and meaningful intervention to young children with special needs and their families.
Chapter 3: Methodology

Research Design and Methodology

This chapter describes the research design and methodology of the playgroup study. The chapter is divided into six major sections: (a) the research design and specific procedures, (b) a description of the subjects, (c) identification of the study setting, (d) the instruments and measures used, (e) data collection, and (f) a description of data analysis. A quasi-experimental, repeated measures design with a pre- and posttest was chosen for this study as illustrated in Figure 1.

Figure 1. One-group, repeated measures design with pre- and posttest and four data collection points.

Rationale

A pretest-and-posttest, repeated measures design involves examining one group and measuring the degree of change that occurred as a result of treatment (Stevens, 1996). In the playgroup study, the group was the caregiver–child dyads, and the treatment was the community playgroup. A benefit of using the pretesting with a 4-week baseline was to look at change as a result of standard-of-care early intervention alone. It then would be possible to determine whether the addition of the community playgroup had an effect on playfulness more than the standard of care alone. Additionally, the
effect of the playgroup on the sensitivity and responsiveness of the caregiver could be explored. The pre- and posttests would determine the effects of the playgroup intervention. The benefit of a 4-week post-intervention period allowed for evaluation of sustainability of results after intervention had stopped. The sustainability period (Time 3 to Time 4) would determine whether the effects of the community playgroup were maintained over time.

Using the pretest-and-posttest, repeated measures design increased internal validity by controlling for many possible threats. Due to the extreme variability between subjects receiving early intervention in this age group, a control group was not utilized. The use of a baseline standard-of-care period allowed each child to serve as his or her own control, reducing the threats of history and maturation (Portney & Watkins, 2000). It was necessary to use the repeated measures design to eliminate the between-subjects variability in the pretest and posttest time points.

A randomized controlled trial was not possible due to ethical concerns associated with no intervention. It was inappropriate to withhold intervention from any group during this sensitive time period in the subjects’ development. A crossover design was considered, but not chosen due to delay of intervention. Further, carryover effects of the playgroup intervention would affect the validity of the crossover design.

There are a number of benefits to the external validity of a study using a quasi-experimental, pretest-and-posttest design. The repeated measures design provides greater statistical power despite the smaller number of participants (Portney & Watkins, 2000). The variability of each participant that limited use of a control group allowed for
increased ecological validity. Children with a variety of diagnoses were included, and this increased the likelihood that the results of this study could be replicated with other children in early intervention. In early intervention programs, there are usually children living within a community that are various ages and have a variety of abilities. The fact that this study included children of different ages and different abilities made it appear more like a playgroup that would occur in an early intervention program. The results of this playgroup intervention were more likely to be reproduced with other participants in other communities as well.

**Specific Procedures**

A repeated measures design with a pre- and posttest was the best method to determine whether the playfulness of children with special needs increased when participating in community playgroups. This design facilitated the researcher’s ability to determine whether or not the caregivers demonstrated any change in sensitivity and responsiveness during the study. Step-by-step procedures carried out in playgroup study are outlined as follows:

1. Site approval was granted by the community center, a collaboration agreement was signed by Early Steps of Southwest Florida, and program support was established by the bureau chief of Early Steps/Early Intervention State of Florida.

2. The research protocol was reviewed and approved by the Nova Southeastern University Institutional Review Board (3/20/13). The research protocol was then reviewed and approved by the Florida Department of Health (10/11/13).
3. The PI informed Early Steps of approvals and provided the parent letter to share with providers and families.

4. Families who were receiving early intervention services within a geographical area were contacted face to face, e-mailed or called by Early Steps of Southwest Florida providers and given a parent letter.

5. Families who were interested in participating in the community playgroup contacted the PI by e-mail or telephone.

6. The PI had the first communication with caregivers via e-mail or telephone and determined eligibility. Eligible dyads were added to a list until a sample size of 10 was reached.

7. Informed consent was obtained from each caregiver included in the study.

8. The service coordinator at Early Steps of Southwest Florida was contacted in order to communicate caregiver consent for the dyad to participate in the playgroup. The staff at Early Steps then provided the Individualized Family Service Plan to the PI. Specifics on each child’s standard care therapy were documented in the Individualized Family Service Plan. An Individualized Family Service Plan was provided for each dyad in the study to account for individual differences, such as number and type of services.

9. Participants in the community playgroup were verbally encouraged to participate in all eight intervention sessions.

10. Four weeks prior to the scheduled playgroup, each dyad was video-recorded at Time 1 for 15 minutes of free play in the natural environment. The location
and time of the video-recorded free play were determined by the caregiver. The caregiver was given a family information and activity log (see Appendix A) to list activities that the family participated in during the 4-week baseline period.

11. After the 4-week baseline period, another video recording of free play occurred at Time 2. The free-play location was consistent at a time that was determined by the caregiver. The family information and activity log (see Appendix A) was collected.

12. All participants attended the hour-long, weekly community playgroup for the intervention period for 8 weeks.

13. A Time 3 video-recorded free play occurred at the end of the 8-week community playgroup intervention. Again, the location of the free play and video recording was consistent, and the time of the session was determined by the caregiver.

14. The final video recording of free play was 4 weeks after the community playgroup had been completed, Time 4, at the same location as previous video-recorded free-play sessions and a time determined by the caregiver.

15. The outcomes, child playfulness and caregiver sensitivity and responsiveness, were scored from the video recordings taken before a 4-week baseline, pre- and post-intervention, and 4 weeks after the intervention period ended.

Each group was video recorded at four time points in the study. Time 1 was prior to the beginning of a 4-week baseline phase. Time 1 assessment consisted of a video-
recorded 15-minute session of the child and caregiver at free play. This video was used for ToP and caregiver sensitivity and responsiveness scoring. Participants then received standard-of-care early intervention during a 4-week period. Standard of care consisted of early intervention providers offering support to the family as determined by the Individualized Family Support Plan in the natural environment. The standard of care was a one-to-one intervention to optimize child development within the family routines. Each dyad had ongoing early intervention services recorded, but not controlled for. After the 4-week standard-of-care early intervention period, assessment at Time 2 consisted of another video-recorded 15-minute session of the child and caregiver at free play. The second video was used for ToP and caregiver sensitivity and responsiveness scoring. The caregiver and child then participated in 8 weeks of playgroup intervention. After the end of the 8-week period, a third video recording of free play was the assessment at Time 3. This video was used to score playfulness using the ToP and caregiver sensitivity and responsiveness. Four weeks from the last intervention, all subjects were video recorded at Time 4 during 15 minutes of free play. The fourth and final video was used to score playfulness using ToP and caregiver sensitivity and responsiveness.

**Community Playgroup (Intervention)**

The community playgroup structure was developed using current literature about playgroups. Data on early intervention playgroups in Australia (Jackson, 2011), Strain playgroups (Strain & Danko, 1995), integrated playgroups (Glovak, 2007, Wolfberg, 2003), and other occupational therapy play programs were analyzed and incorporated.
Information on play theory and types of play influenced the choice of objects and selection of activities used in the playgroup.

The components of the community playgroup included developmentally appropriate play. In order to maintain the established routine of caregiver, child, and family, a once-weekly, 60-minute community playgroup was implemented. Existing research on playgroups focused mainly on children with autism and supported the use of a structured play session (Lantz, Nelson, & Loftin, 2004; Wolfberg, 2003; Yang et al., 2003; Zurcher, Hunt, Schuler, & Webster, 2001). Table 1 presents the semistructured, 8-week intervention plan of the present study.

Table 1

<table>
<thead>
<tr>
<th>Community Playgroup Intervention Weekly Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hello song</strong></td>
</tr>
<tr>
<td><strong>Warm up</strong></td>
</tr>
<tr>
<td><strong>Play skill</strong></td>
</tr>
<tr>
<td>Baby sit up</td>
</tr>
<tr>
<td>Upside down</td>
</tr>
<tr>
<td>Lap roll over</td>
</tr>
<tr>
<td>Elevator</td>
</tr>
<tr>
<td>Forward roll</td>
</tr>
<tr>
<td>Head stand</td>
</tr>
<tr>
<td>Log roll</td>
</tr>
<tr>
<td>Ball bounce</td>
</tr>
<tr>
<td><strong>Sitting song</strong></td>
</tr>
<tr>
<td>Itsy bitsy spider</td>
</tr>
<tr>
<td>Wheels on the bus</td>
</tr>
<tr>
<td>Open/ Shut them</td>
</tr>
<tr>
<td>Tony Chestnut</td>
</tr>
<tr>
<td>Twinkle Little Star</td>
</tr>
<tr>
<td>5 little monkeys</td>
</tr>
<tr>
<td>Skinna-marinky dink</td>
</tr>
<tr>
<td>Row row row your boat</td>
</tr>
<tr>
<td><strong>Standing dance</strong></td>
</tr>
<tr>
<td>Head shoulders knees toess</td>
</tr>
<tr>
<td>If you are happy and you know it</td>
</tr>
<tr>
<td>Teddy Bear</td>
</tr>
<tr>
<td>I'm a little teapot</td>
</tr>
<tr>
<td>Hokey Pokey</td>
</tr>
<tr>
<td>Down by the station</td>
</tr>
<tr>
<td>Pop goes the weasel</td>
</tr>
<tr>
<td>Ring around the rosey</td>
</tr>
<tr>
<td><strong>Exploratory/ sensorimotor play</strong></td>
</tr>
<tr>
<td>Same each week</td>
</tr>
<tr>
<td><strong>Manipulative/ construction play</strong></td>
</tr>
<tr>
<td>Same each week</td>
</tr>
<tr>
<td><strong>Pretend play</strong></td>
</tr>
<tr>
<td>Food items, cart</td>
</tr>
<tr>
<td>Dress up</td>
</tr>
<tr>
<td>Baby/ trucks</td>
</tr>
<tr>
<td>Birthday party</td>
</tr>
<tr>
<td>Animals</td>
</tr>
<tr>
<td>Puppets</td>
</tr>
<tr>
<td>Cooking/ baking</td>
</tr>
<tr>
<td>Outdoor</td>
</tr>
<tr>
<td><strong>Goodbye</strong></td>
</tr>
<tr>
<td>Same each week</td>
</tr>
</tbody>
</table>
The integrated playgroup model supported the use of an opening ritual where the therapist led the group in a greeting, such as a song (Glovak, 2007; Wolfberg, 2003). This playgroup began with a hello song and a caregiver and child introduction. The hello song was, “Hello (name of child), Hello (name of child), Hello (name of child), everybody say hello to (name of child).” This song introduced all child members of the playgroup by name. Typically, playgroups began with a formal or informal greeting of each child and caregiver. The children were sitting or standing near their caregiver with the group forming a circle facing inwards. Children were encouraged to say hello to each child and wave to develop social skills and group participation.

This playgroup used a warm-up and a motor skill to provide caregivers an opportunity to scaffold play. Both integrated playgroups and early-intervention-supported playgroups utilized a Vygotskyian approach to social interaction where the caregiver assisted or scaffolded in play that the child may not be able to perform alone (Jackson, 2011; Wolfberg, 2003). Under the direction of the PI, the caregiver provided normal movement patterns and controlled sensory input through hand-over-hand contact with the child in a warm-up activity. Warm-up consisted of individual and combined body movements set to music targeting the whole body, such as opening and closing hands, raising hands up and down, opening and shutting arms, see-sawing side to side, reaching and stretching arms, twisting the body, and marching and kicking legs. The child was given an opportunity to imitate movements of the researcher. The caregiver assisted the child by using a hands-on approach to complete all the movements or
encourage the child to imitate the movements on his or her own. The warm-up activities were designed to provide an additional opportunity for the caregiver and child to interact through play activities.

A play skill for the caregiver to perform with the child was modeled after the warm-up. Caregivers were given this opportunity to respond to their child’s cues for active play and engagement. After the warm-up, caregivers had a chance to practice the play skill modeled by the PI (see Table 1 and Appendix B for list). The PI was available to coach each caregiver to demonstrate the skill with the individual child while the other caregivers were able to practice. The introduction, warm-up, and play skill focused on enhancement of caregiver interaction with eye contact and face-to-face play routines and prepared the child for more active play.

Music was also incorporated into the community playgroup to promote positive caregiver–child interaction and play. Several studies have found support for the use of music in early intervention (Nicholson et al., 2008; Nicholson et al., 2010). Music also was shown to increase social toy play in a group of 56 parent–infant dyads (Walworth, 2009). Children’s music was played at a low level as the children entered playgroup. After the introduction, warm-up, and play skill, a sitting song was initiated. The song was a children’s song with easy-to-follow hand movements (see Table 1 and Appendix B for list of songs). Under direction of the researcher, caregivers assisted the child in sitting and completing any movements the child had difficulty completing alone. The sitting song was followed by a standing dance (list in Table 1 and Appendix B). The child was encouraged to stand alone. If the child was unable to stand alone, he or she
was assisted by the caregiver or held in the arms of the caregiver. The standing dance encouraged standing and moving the body with the music. The use of music in the community playgroup allowed varied play opportunity, group and caregiver interaction, and additional sensory input through music.

All caregivers were encouraged to support their child to stay together with the group in the circle for the first 20 minutes. If a child wandered away from the circle, the caregiver would bring the child back to the circle in a playful manner. When the child was upset or wanted to stand or move away from the group, the dyad moved away from the circle and participated with a little more distance (no more than 7 feet due to the location) until they were able to come back and join the group. At times, the child would hold on to a favorite object, such as a small bumpy ball, during the circle-time activities.

After circle time, the children engaged in a period of sensorimotor exploration. A study of a free-play group with preschoolers included gross motor and exploration play as a means to increase initiation and responses in children with delayed play skills (Tanta et al., 2005). This exploration was an opportunity for play-based interaction with objects, caregivers, and other children in the community playgroup. Piaget (1951/1962) identified the importance of sensorimotor play from birth to 2 years. This type of play is object and sensory oriented.

Sensorimotor play also has social importance as caregivers and other children use the toys in different ways, and the children are able to observe and interact with each other. Different objects were introduced to facilitate exploration of both the objects and the environment during the period of exploration. Some examples of items for
exploration were a small ball pit, objects with various textures (a soft blanket, a rough sponge, a bumpy board), small toys, a plastic disc to slide on, a large ball to bounce on or push, rings, cones, a wiggle seat, scarves, bean bags, and hula hoops. Sensorimotor play provided developmentally appropriate opportunities for the children to interact through play with the use of objects in the play environment.

The children were encouraged to initiate independent and group play in the community playgroup through object manipulation in constructive and pretend play. Documented playgroups in the literature used toys that required sharing as peer initiation strategies (Strain & Odom, 1986; Tanta et al., 2005). Wolfberg (2003) suggested play materials with high social and imaginative potential. During this period of play, the caregivers were verbally prompted to take a step back and allow the children to play with less of their physical assistance. Caregivers were encouraged to be responsive to their children but allow them to explore independently as able. Varied play objects were introduced to engage the children in more constructive and pretend play. Items introduced to the children during this period included but were not limited to blocks (wooden, foam, of various sizes), puzzles, cardboard boxes, Mr. Potato Head, and large Legos. Other items were changed each week and included various food containers, pots and pans, dress-up items (hats, bags, and wands), telephones, puppets, dolls, and animals (see Table 1 and Appendix B for list). Music toys were brought out at this time each week. When able, play objects that the caregivers had at home were utilized so that the play environment could be replicated easily. Constructive and pretend-play objects
afforded additional opportunities for dyads to initiate play and facilitate the developmental progression of play.

The community playgroup ended with a semistructured closing. Blowing bubbles assisted the transition from free play to cleanup. A goodbye song was initiated by the PI with the participants all sitting in a circle; the words were the same as hello song, but stated goodbye instead with a wave to each other. Children and caregivers were encouraged and positively reinforced for their participation in play. The overall timing of each section was approximately 10 minutes for introduction, warm-up, and play skill; 10 minutes for sitting and standing dance; 15 minutes for sensorimotor exploration; 20 minutes for object manipulation/constructive play and pretend play; and 5 minutes for goodbye. There was flexibility to add more time to one section as needed, and each component of the community playgroup was completed in all of the eight intervention sessions.

**Strengths and Weakness of Design**

Possible threats to internal validity were addressed with use of the pretest-and-posttest, repeated measures design. It was important to consider attrition and the loss of subjects, especially if the play program was difficult for the family to attend. Of the interested participants, four dyads had to drop out due to transportation and scheduling, illness, and moving away from the area. This attrition was controlled with the protocol of the intervention (hour-long, weekly sessions at a feasible location) and initial conversation with caregiver. Each caregiver was initially screened in communication with the PI for ability to commit to the full 8-week program.
Contamination, such as the researcher providing more intensive or specific services to a child on her existing caseload, might have been a problem if the researcher knew the children. Not including children already on the PI caseload controlled for contamination.

Maturation was a factor to consider in that the children were growing and developing during the time of the study. The repeated measures design helped to control for maturation as the data collection time points measured change before and after playgroup intervention, and each child served as his or her own control. Use of a repeated measures design increased both the population and the environmental generalizability of this study. This design can be replicated easily in different environments. The participants in this study were representative of the population seen in early intervention with a variety of ages and abilities. Rather than assessing one dyad and comparing it to another, this design supported the idea that each dyad was different and should be assessed individually. This increased the likelihood that the playgroup could be offered to a different group of participants or in a different environment and still have the same results.

Some drawbacks to using experimental designs included difficulty in obtaining enough participants, increased time and effort of researcher needed, and the possibility of a testing effect. The testing effect should be controlled from the nature of the testing instrument being used (the ToP and NICHD Early Child Care Research Network scales are observational in nature). The main weakness was that a small number of subjects might result in a Type II error, a chance of missing an actual effect of intervention.
A repeated measures design with a pre- and posttest design would determine whether there was a change in playfulness after intervention. The primary benefit of a repeated measures design was statistical power relative to sample size. Repeated measures designs use the same subjects, which decreases variance due to subjects and makes statistical tests more powerful (Stevens, 1996). With a small sample size, this design assured that any change in playfulness was a direct result of intervention and not due to individual differences in the children or caregivers.

**Subjects**

The population explored in this study was children with special needs 15 months to 3 years old in Southwest Florida who were receiving early intervention services through Early Steps of Southwest Florida. This group made up the sampling frame.

**Number and determination.** Due to the nature of the playgroup, the maximum number of caregiver–child dyads was determined to be 10. This determination was made by research on playgroups and personal history in working with groups of children of this age. Other studies (Harkness & Bundy, 2001; Okimoto et al., 2000) used 19 to 25 members per group to provide statistical power when measuring playfulness. The repeated measures design provided greater statistical power, despite the smaller number of participants (Portney & Watkins, 2000). Strain playgroups (Strain & Danko, 1995) and integrated playgroups (Glovak, 2007, Wolfberg, 2003) have between three to five children in a playgroup. Because this study used only one group and had repeated measures, a sample of 10 was appropriate. Too many members in a single group would negatively affect the nature of the group. Similarly, from the PI’s experience working
with playgroups, less than three dyads in the group would take away from the dynamic of the group.

**Inclusion criteria.** To be included, each participant had to have at least one consistent caregiver agree to attend all eight intervention sessions. Children needed to be between 15 months and 3 years old. All children needed to be receiving early intervention services through Early Steps to be included. Children also needed to be able to sit alone unsupported to be included in the playgroup.

**Exclusion criteria.** Participants were excluded if deemed medically unable to participate or not recommended to play in a group setting. Participants were excluded if the caregiver did not speak English. Participants who did not have transportation to the playgroup were also excluded from this study.

**Participant characteristics.** Participants were recruited through Early Steps of Southwest Florida, the early intervention provider for Southwest Florida as outlined in specific procedures. Caregiver–child dyads were selected on a first-come, first-served basis when the caregivers indicated to the researcher by phone call or e-mail that they were interested in participating in the community playgroup. A total of 12 caregiver–child dyads met the inclusion criteria for participation in the playgroup and gave written consent. Each dyad had an Individualized Family Service Plan that included information about age, gender, race, services being received (and frequency of these services), family members, family goals, and eligibility scores on the Battelle Developmental Inventory–2 (Berls & McEwen, 1999).
Of the 12 participants who consented to participate in the community playgroup, four were not able to attend the community playgroup. Two of the participant dyads reportedly traveled away from geographical area after the start of the study. One participant caregiver reported recurring illness of her child. One participant dyad no longer had transportation to the playgroup. Eight dyads completed the playgroup. The mean number of playgroups attended by each dyad was six. There was an average of six dyads at each playgroup session. The reason for missing a playgroup was either illness in the family or another appointment related to early intervention or medical services that could not be changed.

Seven of the caregivers participating were mothers, and one of the caregivers who participated in the playgroup was a father. Seven of the eight child participants had siblings living with them at home. Child participants were five boys and three girls (see Table 2). The ages of the children ranged from 18 to 32 months, and the mean age was 26 months at the start of the intervention period. All children had delays in more than one area of development, which made them eligible for early intervention services in the state of Florida. Most of the families were White, with one Hispanic family. Table 2 also displays income information.
Table 2

_Demographics of Sample (N = 8 Caregiver–Child Dyads)_

<table>
<thead>
<tr>
<th>Demographic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caregiver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>7</td>
<td>87.5</td>
</tr>
<tr>
<td>Father</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>Child gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
<td>62.5</td>
</tr>
<tr>
<td>Female</td>
<td>3</td>
<td>37.5</td>
</tr>
<tr>
<td>Child diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developmentally delayed</td>
<td>3</td>
<td>37.5</td>
</tr>
<tr>
<td>Autism spectrum disorder</td>
<td>3</td>
<td>37.5</td>
</tr>
<tr>
<td>Down syndrome</td>
<td>2</td>
<td>25.0</td>
</tr>
<tr>
<td>Family ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>7</td>
<td>87.5</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>Household income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$20,000–29,000</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>$30,000–39,000</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>$40,000–49,000</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>$50,000–59,000</td>
<td>3</td>
<td>37.5</td>
</tr>
<tr>
<td>$60,000–69,000</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>$70,000–79,000</td>
<td>1</td>
<td>12.5</td>
</tr>
</tbody>
</table>

The families had a variety of services provided by early intervention. One child was receiving monthly services, one received two services a month, three children had services once per week, and three children reported two or more services per week (see Figure 2). The mean number of services the family received from early intervention providers per month was 5.38. Services include early intervention providers, occupational therapy, physical therapy, speech therapy, and behavior therapy.
Each family completed an activity log for the standard-of-care period, during which they received early intervention services as outlined on their Individualized Family Service Plan. Caregivers were instructed to record any extra play activities (e.g., park, playdate) that their child participated in during this period. It should be noted that the Christmas holiday and New Year’s Eve occurred during this period. The children participated in a reported range of 0 to 4 play activities outside the home other than therapy in the month with a mean of 1.9 activities. The most frequently mentioned play activities, in order, were the beach, the park, outdoor play, indoor play, and walks.

**Recruiting procedures.** The sample of participants was based on children with special needs receiving early intervention services through Early Steps of Southwest Florida within a geographical area. Nonprobability, purposive sampling was utilized in order to reach the targeted sample. The PI informed Early Steps about the study and
provided a parent letter to distribute to families who met inclusion criteria and might be interested in participating. Early Steps staff and providers contacted caregivers face to face or via e-mail with the parent letter. If families were interested in participation, they then contacted the researcher via e-mail or telephone. The caregiver–child dyads were placed on a participant list in the order in which they contacted the researcher. At least one consistent caregiver had to be willing and able to attend eight weekly Friday morning sessions in the community to participate.

**Ethical considerations and review.** Site approval was given from the community center where the playgroup was held to use the site for the community playgroup. An agreement of collaboration was provided by the Early Steps of Southwest Florida director and provider liaison. Approval for site research and program support was granted by the bureau chief of Early Steps, Florida Department of Health, State of Florida. An occupational therapy dissertation committee, the Institutional Review Board at Nova Southeastern University, and the Florida Department of Health reviewed and approved this study. The Florida Department of Health approved Protocol H13029 on October 11, 2013. The Institutional Review Board in the College of Health Care Sciences at Nova Southeastern University approved Research Protocol Number 01211317, which expired March 20, 2014.

Participants gave their written informed consent to participate in the playgroup study prior to pretesting. Each caregiver was asked to review consent, and any questions were answered prior to written consent. The consent was also verbally explained by the PI to caregivers in person on a case-by-case basis. Participants were informed that they
were able to withdraw from the study at any time without any disruption in services. The written consent for each dyad participating was saved in a file by the PI in a manual of procedures in a locked cabinet in a locked office. The manual of procedures was a binder that included all approvals, study protocol, playgroup intervention details, all forms, and assessments. The PI has undergone human research collaborative institutional training initiative as well as research ethics in doctoral coursework. Confidentiality was and will be protected as all consents, testing information, and videos would be kept with the PI and used only for the purposes of this study. All materials were given a code to de-identify participants. All materials from this study are being kept in a locked cabinet. Any information obtained in connection with this study that could be indicate identity remained confidential and would be disclosed only with participant permission or as required by law.

**Study Setting**

This study was conducted in Southwest Florida. Participation in playgroup took place in a room in a community recreation center. This center was part of the county parks and recreation department. A written agreement form for site approval was provided, and all facility agreements required by the site were signed.

**Instruments and Measures**

**The ToP.** The PI used the video recordings of free play from each time point (Times 1–4) to measure playfulness. Permission to use this instrument was granted from the author of the ToP, Anita Bundy, through e-mail. The ToP Version 4.2 (Skard & Bundy, 2008) was used to measure the constructs of playfulness through observation in
the minutes of free play. The ToP rates 30 items on a 4-point scale from 0 to 3 that reflects extent, intensity, or skill of a child in free play (see Appendix C). Scores from the video observation were input in the ToP protocol sheet (Appendix C) and then plotted on the ToP Keyform (see Appendix D) by relative difficulty according to means and standard deviations. After plotting the scores, a line was drawn through the Keyform (see Appendix D), so half of the scores were above the line and half below. This resulted in an interval-level playfulness score to be utilized for statistical analysis (Skard & Bundy, 2008).

The PI and two graduate student raters, trained to be reliable, scored each video recording. The student raters were blind to the purpose of the study and the time point of the video recordings. Interrater reliability of the ToP has been reported at 95% (Porter & Bundy, 2000). Interrater reliability for this study was determined using average interclass correlation coefficients (ICC) on SPSS. The consistency average measure of ICC Cronbach’s alpha ranged from .750 to .939 for the average ToP items for each child data set. This was considered to be average to excellent interrater reliability. The average ToP score was used for reporting playfulness at each time point.

**Qualitative ratings for caregiver–child interaction.** The videotaped free play also was used to determine caregiver sensitivity and responsiveness. Caregiver sensitivity and responsiveness was evaluated with the parenting subscales of the NICHD Early Child Care Research Network (1999) scales. These scales have been adapted and used for research purposes (Fenning, Baker, Baker, & Crnic, 2007). In an extensive review of the literature, Halle et al. (2011) reported these adapted scales have been
utilized with reliability in a number of published studies. The seven scales that rated the caregiver were (a) sensitivity and responsiveness, (b) intrusiveness, (c) detachment, (d) positive regard, (e) negative regard, (f) animation, and (g) stimulation of development. This study only utilized the sensitivity and responsiveness subscale. Ratings were scored on a 7-point scale ranging from 1 (absence of behavior) to 7 (distinct and abundant presence of the behavior). Caregivers were rated based on the 15-minute, videotaped, free-play session (see Appendix E).

Nonexpert graduate student raters who were both blind to the study and the time order of the videotape rated caregivers. Three nonexperts and one expert rater (the PI) scored each video. In previous studies, nonexperts provided reliable rating of sensitive structuring, and concordance with expert ratings was moderately high (Baker, Messinger, Ekas, Lindahl, & Brewster, 2010). Absolute agreement average ICCs were conducted for the ratings. The ICC Cronbach’s alpha ranged from .779 to .939, which was average to excellent agreement. The aggregated scores from the four scores rated were averaged to have one score for further data analysis.

Data Collection

The PI video recorded the 15-minute sessions of free play for scoring and coding at each of the four time points using the ToP and NICHD Early Child Care Research Network (1999) subscale of sensitivity and responsiveness. Children are more likely to play in a safe, familiar, nurturing environment where unfamiliar settings or novel play objects elicit more exploratory or nonplay behavior (Morrison et al., 1991). For this reason, each dyad was video recoded in a familiar play setting determined by the
caregiver. The setting remained consistent through each of the four time periods. The caregiver was also able to choose a time of day that worked with the family routine. Time 1 observation occurred before the 4-week baseline, Time 2 was prior to the playgroup intervention, Time 3 was after the playgroup sessions were completed, and Time 4 was 4 weeks after the playgroup had finished. The PI saved all video recordings once collected on a hard drive. All video recordings were given a code. Scoring forms for the ToP and caregiver sensitivity/responsiveness were collected from all raters. Each score was then entered on an Excel spreadsheet using child-caregiver codes. All scores that were entered on the Excel spreadsheet were doubled-checked with the original score forms by PI. Scores from Excel were transferred into SPSS for analysis.

**Data Analysis**

To test for normality of the distributions, the Shapiro-Wilk test of normality was used. If the test were insignificant ($p > .05$), the distribution was not significantly different from the normal distribution. If the distribution were normal, parametric tests could be utilized. Both dependent variable data were approximately normally distributed with $p > .05$. Both dependent variables were also tested for sphericity using Mauchly’s test of sphericity. In repeated measures ANOVA, it is important to test for sphericity to ensure that the variances across repeated scores and correlations across all pairs are equal (Portney & Watkins, 2000). This would be similar to evaluating differences in another group, but with a one group, repeated measures of the differences between the time points of the individual subjects were important. Testing the assumption of sphericity will reduce a Type I error, which is the conclusion that an effect exists when in fact it does
The ToP scores and the sensitivity and responsiveness score were $p > .05$, so the results of the repeated measures ANOVA could be interpreted without additional corrections. A within-subject, repeated measures ANOVA with post-hoc testing was used to determine the effects for time. An additional Pearson’s correlation evaluated the relationship between playfulness and caregiver sensitivity and responsiveness. Five comparisons and one correlation were made to answer the following six research questions:

1. Does standard-of-care early intervention change playfulness (Time 1 to Time 2, baseline)?
2. Does standard-of-care early intervention change caregiver sensitivity and responsiveness (Time 1 to Time 2, baseline)?
3. Does the community playgroup increase playfulness compared to the standard of care (Time 2 to Time 3, intervention, compared to Time 1 to Time 2, baseline)?
4. Does the community playgroup increase caregiver sensitivity and responsiveness in caregiver–child interactions (Time 2 to Time 3, intervention)?
5. Are the effects of the playgroup sustained 4 weeks post-intervention (Time 3 to Time 4, follow-up, and Time 2 to Time 4)?
6. Is there a relationship between the playfulness of the child and the sensitivity and responsiveness of the caregiver (ToP and caregiver sensitivity and responsiveness, Time 1 and Time 4)?
The data gathered from the ToP and NICHD Early Child Care Research Network (1999) scales were managed on Excel and SPSS. Data obtained from the children were analyzed using SSPS software. All participants with Time 1, Time 2, Time 3, and Time 4 data were included in the analyses. Analyzing the scores would determine whether the intervention of the community play program increased playfulness in the children or increased caregiver sensitivity and responsiveness. Further, analysis would establish whether the intervention increased playfulness or caregiver sensitivity and responsiveness more than standard early intervention alone. Finally, the relationship between child playfulness and caregiver sensitivity and responsiveness was analyzed.
Chapter 4: Results

This study included multiple aims. The primary purpose of the study was to determine whether community playgroups increased playfulness as measured by the ToP in children with special needs in the community of Southwest Florida. The second purpose of this study aimed to determine whether the sensitivity and responsiveness of the caregiver was modified as a result of playgroup intervention. Finally, this study also explored the relationship between the playfulness of the child and the sensitivity and responsiveness of the caregiver. Results of the research questions are presented in data analysis results subsections. Findings from the study are described as related to the initial hypotheses. The last sections summarize the results and this chapter of the dissertation.

The results of this study are based on the eight participant dyads who completed the community playgroup. Of the 12 who completed the initial consent and data collection, four participant dyads withdrew from the study due to relocation, transportation, and recurrent child illness. This study was a quasi-experimental, pretest-and-posttest, repeated measures design with one group receiving the community playgroup intervention. Data were collected by video recording at four time points: Time 1, standard-of-care 4-week baseline; Time 2, pretest before community playgroup; Time 3, posttest after community playgroup; and Time 4, sustainability 4 weeks following the playgroup intervention.

The ToP was chosen to measure playfulness in the child as its validity and reliability have been established in the literature. The ToP produced an interval-level score that can be used in data analysis. The ToP data used in analysis were the mean
score of two trained raters, both blind to time point of video and one blind to the purpose of the study. An adaptation of the NICHD Early Child Care Research Network (1999) caregiver–child interaction scales were used to rate caregiver sensitivity and responsiveness on a 7-point scale. The scores rated caregivers as follows: 1, *very low*; 2, *low*; 3, *moderately low*; 4, *moderate*; 5, *moderately high*; 6, *high*; and 7, *very high*. The mean of four raters scores were used in data analysis. All raters were blind to time point of the video, and three were blind to the purpose of the study. Interrater reliability for both ToP and sensitivity and response scores was reported as average to excellent using intraclass correlation coefficients.

**Data Analysis Results**

The data used in analysis, the ToP and sensitivity and responsiveness mean scores, were analyzed for normal distribution using the Shapiro-Wilk test of normality. Normal distribution of the dependent variables determined if the data were in agreement with the central limit theorem where all data fell between two real limits. The normal curve is constant and predictable with most scores occurring around the mean (Portney & Watkins, 2000). In both cases, the dependent variables (ToP and sensitivity and responsiveness) conformed to normality ($p > .05$). Additionally, the data were tested for sphericity using Mauchly’s test of sphericity. Both analyses indicated the assumption of sphericity had not been violated: ToP $\chi^2(5) = 1.04$, $p = .960$, Mauchly’s $W = .834$; sensitivity and responsiveness $\chi^2(5) = 9.03$, $p = .112$, Mauchly’s $W = .206$. Parametric tests can have more powerful statistical power, but assumptions must be met prior to their use. The testing of these statistical assumptions allowed for the use and validation of
parametric tests in statistical analysis. In order to determine the effectiveness of the community playgroup on playfulness, a one-way, within-subjects, repeated measures ANOVA was performed for both dependent variables: child playfulness using ToP scores and caregiver sensitivity and responsiveness using NICHD adapted scale codes. Four pairwise comparisons were made:

- Time 1 to Time 2 (standard of care early intervention),
- Time 2 to Time 3 (community playgroup intervention),
- Time 3 to Time 4 (sustainability), and
- Time 1 to Time 4 (overall changes from first to last meeting).

With four post-hoc analyses, Holm’s sequential Bonferroni procedure controlled for family-wise error rates. The Bonferroni procedure was used to determine the probability of one or more Type I errors in a set of comparisons (family). In the Bonferroni correction, the overall significance value was divided by the number of comparisons (Portney & Watkins, 2000). Significance was set at \( p < .008 \) (.05 divided by 6).

Polynomial contrast calculations were used to identify significant differences when there was overall significance. Polynomial contrasts evaluated the linear relationship at each time point.

A repeated measures ANOVA determined that the mean ToP playfulness scores of the child differed significantly between time points: \( F(3,21) = 59.10, \ p < .01 \). These results demonstrated an overall significance in playfulness, but not where the differences occurred. A large effect size (\( \eta_p^2 = .89 \)) supported these significant changes in playfulness demonstrated by the children. Bonferroni adjustment was used, and pairwise
comparisons further explored where the differences in playfulness occurred. Figure 3 illustrates the mean playfulness scores of each child at each time point. Tables 3 and 4 show the results of the ANOVA.

![Figure 3. Individual scores for child playfulness on the Test of Playfulness across testing periods (Times 1–4).](image)

**Table 3**

*Repeated Measures Analysis of Variance Output for Child Playfulness*

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta_p^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Playfulness</td>
<td>9,089.06</td>
<td>3</td>
<td>3,029.69</td>
<td>59.10</td>
<td>&lt; .01</td>
<td>.89</td>
</tr>
<tr>
<td>Error (playfulness)</td>
<td>1,076.56</td>
<td>21</td>
<td>51.27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10165.62</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4

Repeated Measures Analysis of Variance for Child Playfulness: Pairwise Comparisons between Time Points (Times 1, 2, 3, and 4)

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean diff.</th>
<th>SE</th>
<th>p</th>
<th>95% CI for the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1 – Time 2</td>
<td>−5.94</td>
<td>3.17</td>
<td>&gt;.01</td>
<td>[−17.45, 5.58]</td>
</tr>
<tr>
<td>Time 1 – Time 3</td>
<td>−36.88</td>
<td>2.94</td>
<td>&lt;.01</td>
<td>[−47.57, −26.18]</td>
</tr>
<tr>
<td>Time 1 – Time 4</td>
<td>−35.94</td>
<td>3.92</td>
<td>&lt;.01</td>
<td>[−50.20, −21.68]</td>
</tr>
<tr>
<td>Time 2 – Time 3</td>
<td>−30.94</td>
<td>3.75</td>
<td>&lt;.01</td>
<td>[−44.57, −17.31]</td>
</tr>
<tr>
<td>Time 2 – Time 4</td>
<td>−30.00</td>
<td>3.87</td>
<td>&lt;.01</td>
<td>[−44.06, −15.94]</td>
</tr>
<tr>
<td>Time 3 – Time 4</td>
<td>0.94</td>
<td>3.72</td>
<td>&gt;.01</td>
<td>[−12.58, 14.46]</td>
</tr>
</tbody>
</table>

Note. Adjustment for multiple comparisons: Bonferroni.

Does standard-of-care early intervention change playfulness? ToP scores from Time 1 to Time 2 were used to answer this research question. After determining overall significance, pairwise comparison was used to look at the change. During the standard-of-care early intervention, there was a minimal increase in the mean playfulness of the children, but the results were not statistically significant (p = .618).

Does standard-of-care early intervention change caregiver sensitivity and responsiveness? An additional one-way, repeated measures ANOVA was used to determine if the sensitivity and responsiveness of the caregiver changed significantly between Time 1 and Time 2. No significant difference was found in caregiver sensitivity and responsiveness scores between time points. The analysis did not detect any association or difference in the sensitivity and responsiveness of the caregiver as a result of standard-of-care intervention, $F(3, 21) = .912, p = .449$. Figure 4 illustrates the scores for caregiver sensitivity and responsiveness at each time point. Table 5 shows the results
of the ANOVA. Because the overall effect was not significant, no additional comparisons could be made.

Figure 4. Individual scores for caregiver sensitivity and responsiveness across testing periods (Times 1–4).

Table 5

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity &amp; responsiveness</td>
<td>1.14</td>
<td>3</td>
<td>0.38</td>
<td>.92</td>
<td>.45</td>
<td>.12</td>
</tr>
<tr>
<td>Error (sensitivity &amp; responsiveness)</td>
<td>8.69</td>
<td>21</td>
<td>0.41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9.83</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Does the community playgroup increase playfulness compared to the standard of care? ToP scores from Time 1 to Time 2 were compared to ToP scores from Time 2 to Time 3. After determining overall significance for playfulness, pairwise comparisons were used. The introduction of the intervention from Time 2 to Time 3
increased the mean playfulness of the participating children with substantial difference, showing statistical significance \((p < .01)\). These results provided very strong evidence against the null hypothesis. The child’s participation in the community-playgroup intervention increased the playfulness of the child. This increase in playfulness during the intervention (a mean increase of 30.938) was greater than the increase during the standard-of-care early intervention alone (a mean increase of 5.938, which was not statistically significant). See Table 4.

**Does the community playgroup increase caregiver sensitivity and responsiveness in caregiver–child interactions?** Results from the repeated measures ANOVA did not show statistical significance, so no comparisons between the different time points were made. There was no real evidence to reject the null hypothesis. This analysis did not detect that the community-playgroup intervention caused any change in caregiver sensitivity and responsiveness.

**Are the effects of the playgroup sustained 4 weeks post-intervention?** ToP scores from Time 2 to Time 4 as well as from Time 3 to Time 4 were used to answer this question. Pairwise comparisons showed a statistically significant increase in playfulness of the child from Time 2 to Time 4 \((p =.001)\). There was no statistically significant difference in child playfulness from Time 3 to Time 4, however, and the scores even decreased very slightly.

**Is there a relationship between the playfulness of the child and the sensitivity and responsiveness of the caregiver?** Two additional Pearson product-moment correlations were used to explore the relationship between ToP scores and sensitivity and
responsiveness scores. For Time 1, there was no correlation between the playfulness of the child and the sensitivity and responsiveness of the caregiver ($r = .367, n = 8, p = .372$). For Time 4, there was a strong, positive correlation between the playfulness of the child and the sensitivity and responsiveness of the caregiver, which was statistically significant ($r = .721, n = 8, p = .044$). See Figures 5 and 6.

Figure 5. Time 1 linear relationship of caregiver sensitivity and responsiveness and child playfulness.
Findings

The community-playgroup intervention and the playfulness of the child. It was hypothesized that participation in a community playgroup would increase the playfulness of children with special needs in the community setting of Southwest Florida. The resulting overall changes from Time 1 to Time 4 in the playfulness of the child allowed the null hypothesis to be rejected. There was a large effect size. The community playgroup intervention did cause a statistically significant increase in the playfulness of the child as measured by ToP scores. In the community of Southwest Florida, the
children who participated in the playgroup had improved playfulness from initial meeting to 4 weeks after playgroup intervention had ended.

The community playgroup and the sensitivity and responsiveness of the caregiver. An additional hypothesis was made that the sensitivity and responsiveness of the caregivers participating in the community playgroup would increase after the playgroup intervention. The resulting overall change from Time 1 to Time 4 in sensitivity and responsiveness of the caregiver showed no significant difference. Thus, the null hypothesis could not be rejected.

The relationship between the sensitivity and responsiveness of the caregiver and the playfulness of the child. It was suggested that the more sensitive, responsive caregivers might have more playful children. There was no correlation at Time 1 between the sensitivity and responsiveness of the caregiver and the playfulness of the child. At follow-up, however (Time 4), there was a strong, positive relationship between the variables of caregiver sensitivity and responsiveness and child playfulness. Only after the standard-of-care early intervention, community-playgroup intervention, and a 4-week sustainability period was there a significant relationship between caregiver sensitivity and responsiveness and child playfulness. At follow-up, Time 4, caregivers who rated higher in sensitivity and responsiveness had children who were more playful.

Summary of Results

Analysis of the data revealed a statistically significant increase in the playfulness of the participating children from Time 1 to Time 4. Further, a statistically significant change was seen as a result of the community-playgroup intervention from Time 2 to
Time 3. There was no statistically significant change from the end of the playgroup to follow-up. The evidence suggested that the increase in playfulness demonstrated by the children in the community playgroup was maintained over the 4-week sustainability period.

There was no statistically significant change in the sensitivity and responsiveness of the caregivers from Time 1 to Time 4. All caregivers appeared to have some increase in interaction style from first to last time point, but the results were not statistically significant. Any change was small, perhaps because a majority of the caregivers were sensitive responders to their children at initial visit.

There was no relationship between the sensitivity and responsiveness of the caregiver and the playfulness of the child at the first meeting (Time 1). There was a strong, positive correlation between the sensitivity and responsiveness of the caregiver and the playfulness of the child at the last meeting (Time 4). These results indicate that the caregivers who were the most sensitive and responsive had children who were more playful at the follow-up, 4 weeks following the intervention.

**Summary**

The results from this study supported the initial hypothesis that participation in the community playgroup could increase the playfulness of children with special needs. Additionally, the community playgroup increased playfulness more than standard-of-care early intervention alone. The community-playgroup intervention did cause a statistically significant increase in the playfulness of the children participating. The analysis did not detect any statistically significant association between the sensitivity and responsiveness
of the caregiver and participation in the community playgroup. The original hypothesis that caregiver sensitivity and responsiveness would increase as a result of intervention was not supported. There was a strong, positive relationship between the sensitivity and responsiveness of the caregiver and the playfulness of the child at follow-up. This result supported the original hypothesis that the sensitive, responsive caregiver would have a more playful child.
Chapter 5: Discussion

Play is essential to early childhood and an important consideration in early intervention. Play begins at home with the caregiver and evolves to include more playmates and environments as the child grows. Playfulness is perhaps one of the most important components of play inherent in the developing child (Cooper, 2000).

According to the Occupational Therapy Practice Framework (2014) and IDEA (2004), it is important that occupational therapists or early intervention providers use interventions with proven effectiveness when working with children and their families. The findings from this study suggest that the addition of a community playgroup may facilitate a greater level of playfulness and play participation for children receiving early intervention services.

Participation is a key indicator of health and well-being, and children participate in the world through play (WHO, 2001). As established in Chapter 2, the community playgroup can increase opportunities for caregivers to play with their children in a variety of environments in the community. More specifically, the occupational therapist in this study was able to model playful interactions and coach caregivers about ways to support and encourage the play of their child through the use of a community-based playgroup. The playgroup also provided an opportunity for children to participate in social play with peers in the community.

Young children with identified special needs have unique challenges that limit their playfulness and participation in play (Buchanan, 2009; Rigby & Gaik, 2007). There was a lack of evidence describing the details of playgroups being used in early
intervention to support play and participation in the community. In fact, only one study was found in the current literature that evaluated the effectiveness of a playgroup for children with disabilities under the age of 3 (DiCarlo & Reid, 2004). In this study, the five toddlers increased their pretend play in an inclusive group program. This study gave children a choice in play centers to increase time with pretend play objects within a classroom setting. No study of playgroup intervention to date has measured the playfulness of the child or the sensitivity of the caregiver as an outcome.

Due to the lack of research regarding playgroup in early intervention, the purpose of this study was to determine the effectiveness of the community playgroup on the playfulness of the child and the sensitivity and responsiveness of the caregiver as a result of participation. The results of the study were analyzed and interpreted according to the research questions outlined in the introduction and results chapters. This chapter discusses the results of the study, the implications of these results for occupational therapy and early intervention as well as the study’s limitations. Suggestions for occupational therapy practice and future research also are made.

**Interpretation of Results**

**Does standard-of-care early intervention change playfulness?** Child playfulness scores from initial meeting to pretest were used to answer this research question. The results of the data analysis did not show a statistically significant increase in playfulness of the children during a 4-week period of standard-of-care early intervention. There was, however, a clinical effect seen as the mean playfulness scores of the children demonstrated an increase from Time 1 to Time 2 during standard of care
early intervention. The idea that early intervention supports and enhances the play and playfulness of the child has not been previously reported in the literature; however, this study has demonstrated some change based on standard of care early intervention, suggesting that this aspect of early intervention be assessed further. When parents of young children were educated about play activities, children demonstrated benefits in development (Gardner et al., 2003; Walker et al., 2004). It is clear that the ability of the caregiver to engage in play activities with their young child supports development. In best practice, many early intervention providers use play as a medium to model interactions with the child and coach caregivers. From the results of this study, it is possible that working with the child and the family in their natural environment had an effect on the playfulness of the child. Additional research is needed to support the use of modeling and coaching caregivers about play in order to effect child playfulness. In the natural environment, the child is likely more familiar with the play environment and play objects available. Historical play theory supported the idea that a responsive caregiver and familiar environment will provide the foundation for a child to experience a feeling of security (Bowlby, 1969). This stability will allow the child to explore more freely and participate at their highest level of competence (Vygotsky, 1978). This study complemented historical play theory as children demonstrated a positive change in their approach to play and playfulness when engaged in free play with caregivers in their home environment. It is possible that establishing this secure base in early intervention allowed the children to move from play in their home environment to playful participation in the community playgroup.
Research supported the fact that the immediate environment had an influence on the child’s playfulness (Cooper, 2000). Rigby and Gaik (2007) found that children are most playful at home. Providers in early intervention are able to enter the natural environment of the child. This is a wonderful opportunity to coach and model playful interactions using the physical and social environments where the child spends a majority of his or her time. There are advantages to one-to-one interactions with caregivers and their children that may support child playfulness. Additionally, there is a natural progression of play from the immediate natural environment of the home to out in the community. As the child develops and skills emerge, the caregiver and child can have more confidence in entering the community and participating with peers. Early intervention providers working one to one with child and family can provide support and transition from play at home with family to play participation in the community with peers. Providers can also add group intervention, such as a playgroup, to encourage the family to explore play opportunities in a supportive setting.

**Does standard-of-care early intervention change caregiver sensitivity and responsiveness?** Sensitivity/responsiveness scores from initial meeting to pretest were used to answer this research question. Results indicated no significant changes in interaction style as seen in the caregiver’s sensitivity/responsiveness. The NICHD Early Child Care Research Network (1999) caregiver rating scales utilized for this study might not have been sensitive to the small changes seen over a shorter period. The caregivers who participated in the playgroup demonstrated observed changes in the way they responded to their child during semi-structured play routines in the playgroup itself from
week to week as opposed to standard of care alone. Half of the caregivers demonstrated consistent interaction styles overall with very little modification. One caregiver who had the lowest rating at the initial meeting showed the biggest change in interaction style at the pretest point. This could suggest that the standard-of-care intervention had some influence on at least that individual caregiver’s change in interaction style.

It is possible that the caregivers who chose to participate in the playgroup were more sensitive and responsive to begin with. This concept has not yet been discussed or explored in current literature. All caregivers who participated in the study were rated as moderate to high in sensitivity and responsiveness at initial meeting. The caregiver had to self-select and commit to attending the community playgroup for eight sessions over 2 months to participate. In order for caregivers to commit to the extra time and effort that it takes to bring a child out of the home, they already have an understanding of the importance of play in the life of their child. There is a strong association between sensitive, responsive parenting and a child’s later developmental and social competence (Pearce & Pezzot-Pearce, 1994). Caregivers who are sensitive and responsive are likely to seek out opportunities for their child to participate in play opportunities. They are able to structure the physical and social environment knowing their child as a unique individual. It is possible that caregivers who were more sensitive and responsive at the beginning of intervention were less likely to demonstrate improvement in sensitivity and responsiveness as a result of intervention.

**Does the community playgroup increase playfulness compared to the standard of care?** Child playfulness scores from initial meeting to pretest were
compared to child playfulness scores from pretest to posttest. At the initial meeting, the child was enrolled in early intervention and received only standard of care services to pretest. From pretest to posttest, the child continued with early intervention services with the addition of the weekly community playgroup. The playfulness of the child increased both as a result of standard-of-care early intervention and with the addition of the community playgroup. However, the increase during the standard-of-care early intervention was not statistically significant. The increase during the intervention was large and statistically significant. The results from this study would suggest that the addition of the community playgroup after a 4-week period of standard of care early intervention may have in fact change the child’s playfulness. The community playgroup appears to have increased the playfulness of the child significantly, more than just standard-of-care early intervention alone. This supports the original hypothesis that playgroups can be effective in increasing the playfulness of the child. Further, one might conclude that the addition of a community playgroup as part of a comprehensive early intervention program may improve play outcomes for the child.

Most importantly, these results provide evidence for the effectiveness of the community playgroup. These findings suggest that the addition of a community playgroup to the standard-of-care early intervention services would be beneficial to children with special needs in Southwest Florida. Specifically, the children who receive early intervention services and participate with their caregivers in a community playgroup have improved outcomes in the area of child playfulness. As the literature described, improvements in the area of play impact all areas of development (Bergen,
Increases in playfulness are linked to improved adaptability and coping, setting the child up for a lifetime of participation, health, and well-being. It is possible that the increased playfulness will allow a child the confidence to seek out other play opportunities in the community. This is in agreement with Raine et al. (2003), who reported the long term-beneficial effects of an enrichment play program. This may lead to increased community participation in childhood and throughout the lifetime.

**Does the community playgroup change caregiver sensitivity and responsiveness in caregiver–child interactions?** Sensitivity and responsiveness scores from pretest to posttest were used to determine results. There were no statistically significant changes in these areas as a result of playgroup intervention. Some increase in sensitivity and responsiveness from pretest to posttest suggested that small changes were made in the interaction styles of a few of the caregivers who participated in the community playgroup. Some caregivers appeared to benefit from community playgroup. Most of the caregivers in this study had little variation in their sensitivity and responsiveness scores. The consistency seen in caregiver interaction style might be due to the testing instrument, and a more sensitive measure might be able to detect changes in interaction style as a result of intervention. The Quality of Caregiver-Child Interactions for Infants and Toddlers (Q-CCIIT) project has a new instrument in development, which is based on the same codes from the Administration for Children and Families, U.S. Department of Health and Human Services that has promise for use in research. This tool will expand upon information in the National Institute of Child Health and Human
Development Early Child Care Research Network (1999) where the adapted scales used in this study originated from.

The community playgroup can be the appropriate context in early intervention to model sensitive and responsive caregiving in a variety of settings in the community. More opportunities for caregivers to play with their children in different environments can influence how caregivers are able to actively engage with their children in the community. This would give caregivers more options for play participation in the community. As caregivers feel comfortable in playing with their children out in the community and know how to respond, the likelihood of play participation will increase.

**Are the effects of the playgroup sustained 4 weeks post-intervention?** Child playfulness scores from posttest to follow-up were used to answer this question. During the follow up period, children participated in standard of care early intervention services. The playfulness of the child increased significantly from initial meeting to follow-up, and most of the gains were maintained from posttest to follow-up. The playfulness scores had a very slight decrease from posttest to follow up, which was not significant. The slight decrease seen from posttest to follow up could have been a result of completion of the playgroup. The end of weekly playgroup sessions would mean a potential decrease in the number of play opportunities for the participants. Some families used this extra time to explore other community play opportunities. Overall, the children were more playful at follow-up than when they entered into the study.

These findings suggest that the change in child playfulness may be a result of community playgroup intervention. After the community-playgroup intervention
concluded, the increase in playfulness seen in the group of eight children leveled off or had a slight decrease. The implications of the sustainability period demonstrate that the playfulness gains that were made in the time of community playgroup intervention were not all lost after a 4-week follow-up. These results have implications for the sustainability of the playgroup in program development. It is unlikely that the child will constantly be involved in a playgroup, but the outcomes obtained from participation can carry over to other early intervention services as the child transitions into more social play and eventually school readiness.

**Is there a relationship between the playfulness of the child and the sensitivity and responsiveness of the caregiver?** An additional Pearson correlation was used to explore the relationship between the child playfulness scores and caregiver sensitivity and responsiveness scores at the initial meeting as well as at follow-up. No relationship was seen at initial meeting. In both standard-of-care early intervention and community-playgroup intervention, the caregiver interacted with the child and supported and encouraged the child’s play. As a number of studies demonstrate (Case-Smith, 2013, Fey et al., 2006; Yoder & Warren, 2002), the addition of a skilled provider modeling and coaching in different areas of development and interaction would enhance these opportunities. This result is evident in relationship between playfulness and caregiver interaction style at the end of the study.

There was a strong, positive correlation between playfulness and caregiver interaction style at the conclusion of the study. After follow-up of the community-playgroup intervention, the caregiver interaction style was related to the child’s
playfulness. These findings suggest that caregivers who are more sensitive and responsive or who change their interaction style to be more sensitive and responsive to their children are supporting their child’s playfulness. It could also be that more playful children have parents who are more sensitive and responsive. It is also possible that the children who had more sensitive/responsive caregivers received more benefit from intervention. This is in agreement with literature that related sensitive and responsive parenting to competence later in life (Pearce & Pezzot-Pearce, 1994). At the conclusion of this study, the caregivers who were more sensitive responders had children who demonstrated more playful behavior.

Conclusion

The community playgroup intervention and the playfulness of the child. The results from this study suggest that a community-based playgroup may be an effective intervention to increase playfulness in children ages 15 months to 3 years with special needs. The first 3 years of a child’s life are an important period for growth and development. Play is essential in a child’s life, and increasing a child’s approach to play at an early age will improve outcomes in all other areas of development. As children with special needs are identified earlier and the number of families in need of services in the community increases, it becomes even more important to establish effective intervention. This study provides strong support for the implementation of community playgroups by occupational therapists working in early intervention.

The results of this study show that all children who participated in the community playgroup intervention benefited regardless of age, gender, ethnicity, or diagnosis. The
playgroup in this study had children with a variety of abilities. These findings would imply that all children in early intervention should be offered the opportunity to participate in a community playgroup. It is possible that a wide range of children would benefit from participation in a community playgroup. This study also suggests that involvement in a community playgroup will allow the family additional opportunities to access the community and participate in play. As the caregiver and child become familiar with additional play environments in the community, the child has another secure base from which to explore and perhaps continue with playful interactions.

The community playgroup and the sensitivity and responsiveness of the caregiver. In this study, no statistically significant change was found that the interaction style of a caregiver was modified with playgroup intervention. Many caregivers who chose to participate in this playgroup were more sensitive responders to begin with. It is possible that the modified caregiver sensitivity scales used in this study were able to capture the overall interaction style, but were less sensitive to some of the small changes seen as caregivers were interacting with their children during play routines. These changes were seen as caregivers interacted with their children throughout the playgroup and at the post and follow-up video recording.

A key element to children’s participation in play is the inclusion of the caregiver. Including the caregiver in the playgroup is essential in supporting both caregiver and child outcomes. All of the caregivers who participated in the playgroup study were rated as moderate to high sensitive responders at the initial meeting. All caregivers were very encouraging to each other, and in some cases, they were providing ideas, sharing support,
and suggested additional play participation opportunities. It is possible that caregivers who were less sensitive/responsive did not choose to participate in play programs or playgroups offered in their communities. There are also the caregivers who are busy with other things, such as other children or a work schedule. Perhaps these caregivers and their children would benefit from the community playgroup, and it is possible that interaction styles of those caregivers might be modified from the support of the community playgroup setting.

**The relationship between the sensitivity and responsiveness of the caregiver and the playfulness of the child.** At the follow-up of this study, the caregiver sensitivity and responsiveness was related to the playfulness of the child. This indicated that the caregiver interaction style can be an important determinant in whether or not a child will benefit from intervention. Likewise, it is possible that more playful children encourage caregivers to be more sensitive and responsive. Playfulness has been described in the literature as similar to a personality trait, but one that can be influenced by the environment (Trelvas et al., 2003). Modeling and coaching a caregiver about sensitive responding in early intervention may influence the playfulness of the child. This would lead to better outcomes for both the caregivers and the child. When caregivers observed their child enjoying an activity in playgroup, they replicated the activity at home. For example, one child would smile and demonstrated increased visual attention to peers during the greeting hello song. His mother then began to use the same hello song to greet family members or other adults and peers. Another caregiver began to structure playtime similar to playgroup. The child would sit on his caregivers lap, and they would engage in
a familiar song, then the caregiver would bring out some play objects that she wanted the child to explore. This caregiver noticed that when she structured playtime like this, her child would spend more time interacting with her and the toys.

This positive relationship also had implications for intervention with both the caregiver and the child as a unit. Observing the natural interaction between caregiver and child can offer the opportunity to coach the parent and model sensitive responding. Working with the caregiver to respond to their child during play routines may be a priority. It is possible that as the parent is more responsive, the child may benefit more from intervention. In the community playgroup, the caregivers were able to discern the activities their child was interested in and enjoyed. This became an opportunity to take the child’s lead and scaffold play. In the post and follow-up video recordings, the caregivers demonstrated that they were building on some of the interests that the child demonstrated in playgroup. It appears that the caregiver interaction style and the child’s playfulness were more relational after intervention. This finding can help providers identify caregivers who may need additional support in order to promote best outcomes for the child. The earlier that the caregiver obtains necessary support and is coached in sensitive responding, the greater the likelihood of the child’s maximizing the benefits of early intervention.

**Implications for Occupational Therapy Practice**

The results from this study has several specific implications for the providers of early intervention services. These implications can be organized into (a) use of playgroups in early intervention, (b) play and playfulness as an outcome of intervention,
(c) person-environment occupation model to plan and implement intervention strategies, and (d) the play environment.

**Use of playgroups in early intervention.** Young children ages 15 months to 3 years typically experience play in a group of similar-age peers. Children with special needs may not be offered these same play opportunities. Caregivers of children with special needs may be focused on trying to manage their child’s specific needs or perhaps they are uncertain about how their child will play with others. The occupational therapist working in early intervention can implement playgroups as a way for caregivers and children to have successful play opportunities in a group setting. Therapist-supported playgroups based in the community setting where children play will also prepare caregivers and their children to join playgroups with typically developing children.

In this study, one caregiver had a child who was recently diagnosed with autism. Two other caregivers in this group who had children diagnosed with autism were able to share where they were in their journey and provide support. As a result of the interactions these families had during playgroup, the child who was recently diagnosed with autism attended a birthday party, acquired a safety-monitoring device, and participated in a weekly special equestrian program. There are many other anecdotal stories of children in the playgroup imitating songs, participating in play routines, and playing with objects at home and in other environments, thus increasing their play and playfulness as well as optimizing development in all areas of function. This would indicate that both the caregiver and the child benefited from community-playgroup participation.
The occupational therapist working in early intervention has additional information and training regarding the specific needs of children and their families. In this study, connecting families in small playgroups in the community proved to increase the playfulness of the child. Families are also able to meet other caregivers, share resources, and discover new places to play in the community. The playgroup can be planned, implemented, and supported as part of comprehensive early intervention in occupational therapy. The person-environment occupation model (PEO; Law et al., 1996) along with the semi-structured, eight-week playgroup outline (see Table 1) can be used to plan and implement the community playgroup. Occupational therapists have the ability to evaluate the play and playfulness of a child and determine the importance and significance of play in the routine of the family. Occupational therapy practitioners use knowledge about the factors within the child-caregiver dyad and the skills needed for successful play participation. As a profession, occupational therapists are able to consider the complexities of the context where play occurs and make necessary adaptations or modifications in order for successful play interactions. In the Occupational Therapy Practice Framework (OTPF; AOTA, 2014) the role of occupational therapy is the promotion of participation through engagement in occupation. The importance of play in the lives of children is clear, and play is the key to participation, health, and well-being throughout a lifetime. The occupational therapist-led community playgroup is one example of the unique contribution of occupational therapy that is described and explained in the OTPF (2014). In this study, the occupational therapist-led community playgroup was the catalyst that increased the
playfulness in the children and supported play participation in the community. When families participated in the community playgroup, they were also connected with other opportunities in the community. In this study, the caregivers and children in the community playgroup went on to participate in other activities, such as therapeutic riding, birthday parties, music class, and other playgroups. Occupational therapists working in early intervention are well suited for the role of advancing play in family routines and enabling play participation in the community.

Funding and payment for services are important considerations for the sustainability of any program or service. In early intervention, IDEA Part C, Medicaid, and private insurance are possible payers of service delivery. In this study, the community playgroups were part of comprehensive early intervention services. Payment for the community playgroup would follow the same guidelines and involve the same payers as early intervention services. There are, however, limits to the number of children in each playgroup per provider. In order to effectively implement a community playgroup, the provider needs to be aware of funding and payment at federal, state, and local levels. Private and community funding are also possibilities to cover the minimal costs of materials. Many items used in the playgroup can be donated from local resources. In this playgroup, it was very important to connect with community stakeholders. Many community members are willing to share resources, such as space, materials, and time in order to provide for the needs of the youngest members of the community.
**Play and playfulness as an outcome of intervention.** Play is essential to childhood, and play is the occupation that allows the child to participate in the world around them. An occupational therapist must be able to evaluate play and playfulness of a child in the natural environment. This evaluation will give information about how the child participates in the world around him or her and will provide information to direct family-centered outcomes. The child is most playful with familiar caregivers in a familiar environment, and the occupational therapist in early intervention has the ability to observe and assess how the child participates in play in this natural context (Bundy, 2010). This research builds on the importance of the occupation of play as an outcome as described by occupational science. In this study, the playfulness of the child was an outcome of intervention. The playfulness of the child increased, supporting occupational therapist-led community playgroup intervention. This has implications for the inclusion of outcomes related to play, playfulness, and play participation on the Individualized Family Support Plan, the document that outlines the early intervention services that the child and family receive.

As an application of occupational science, infant space theory (Pierce et al., 2009) described how infant and toddler interactions with space and objects within the home environment unfolded in play opportunities. Infant space theory informs early intervention practice with detailed descriptions of the child’s search for challenge as individual abilities develop. This study complements the idea that as the child develops, the possibilities for interactions increase. A child who is not yet mobile will only be able to interact with the immediate space around him or her, and a child who is new to
walking can use the house and the yard as a play space (Pierce et al., 2009). This study also supplements the infant space theory with the notion that with assistance from caregivers and older children continue to increase possibilities for physical and social interactions in play. This can occur in a larger space than just the home and yard with more interactions in the community where the caregiver and child live. The natural progression of the child at play would be from the home with family to the community where they live with peers. This might enable children to prepare for the demands of a preschool and school setting in the community where caregivers are replaced by other supportive adults. Occupational therapists have a role in supporting this natural transition.

A 15-minute observation of the caregiver and child engaged in a familiar play routine provides valuable information for the occupational therapist to plan intervention and to determine if a playgroup may be beneficial to support playfulness. A combination of standardized tests, such as the ToP, and observation can be used to organize information about areas where the child has difficulty and where he or she has strengths in this important area of occupation. Additional observation, evaluation, and intervention can take place as a child transitions from the comfort of play at home with caregivers to play participation in different environments in the community.

It is very important to collaborate with the family to determine goals for play, playfulness, and play participation. Collaboration with the family about the activities that are important about the child’s play will support family-centered care. The literature has described how families of children with special needs spend more time in other activities,
and how play may not be a priority in the daily routine (Brodin, 1999; Burke, 1996). The families who participated in the community playgroup participated in an average of 2.4 play activities outside the home during a 4-week period. Many of the caregivers verbalized that they were excited about the playgroup as it was a way that they could participate in additional play opportunities with their child in the community. When the choice of a playgroup is available, caregivers can determine what, where, and how they want to participate in play, and this communication can translate to outcomes related to play participation.

**Person-environment-occupation model to plan and implement.** In this study, the person-environment occupation model (Law et al., 1996) was used in order to plan and implement the community playgroup. The occupational therapist in early intervention can plan and implement a playgroup in the community using this same model. This model takes into consideration the influence of the person: the occupational therapist and other providers, all the playgroup participants, and the caregivers and their children. Using the model, the occupational therapist understands that each person (caregiver-child dyad) will have his or her own unique characteristics and circumstances that they will bring to the group. In this study, play observations of the caregiver and child were used to select developmentally appropriate play objects that were included in the weekly community playgroup. Additionally, objects that were preferred by the children or facilitated play were re-introduced each week. The occupational therapist will have insight into the individual differences, such as the caregiver’s interaction style
and the playfulness of the child. This information can be used to determine the environment and play objects to enable play participation.

The occupational therapist will be able to select the environment where the playgroup takes place. The occupational therapist is connecting the families to their communities through the use of a playgroup. It is necessary to work with existing community structures and supports that will be around after the playgroup has ended. The occupational therapist may even offer services to an established playgroup in the community. The community may have parks and recreation, a library, a community center, a church, or an aquatic center, and so forth that can be used to gather the participants for play. The community center used in this playgroup looked very much like a house in the community, which was a benefit. The families were also exposed to an all-inclusive playground, a swimming pool, and community programs that were all available at the same site. Often times a simple facility contract and a caregiver release of liability is all that is required. Occupational therapists should think about where children in the area typically play. This will vary from community to community. The idea is that families would be able to bring their children to this community location for play participation after the playgroup has ended. The playgroup can be advertised through early intervention and at targeted community locations, such as where the playgroup will be held. The occupational therapist can select children and caregivers that will facilitate social play opportunities. Finally, the occupational therapist can set up the environment to invite play with the addition of a few high-quality play objects that can elicit different types of play.
The occupation of play itself also needs time and consideration when planning and implementing a playgroup. The occupational therapist should know the developmental play level of each child. This knowledge can facilitate the occupational therapist in bringing together children with varying play skills. This will allow for scaffolding of play skills, allowing the therapist to model and coach the caregiver in the play routine. During the community playgroup sessions in this research study, play skills were modeled as the opportunity presented itself. At times, there were two or three children playing together, and reciprocal play and social interaction was modeled. On another occasion, a child was focused on pretend play with a specific object, and coaching the caregiver about how to join in and expand upon the child’s lead took place. Research has supported the idea that children can learn play skills that are modeled by their caregiver. Shared interests by a number of children in the group can also be used in play routines. A favorite song, dance, simple game, or play object can be used to take the child’s lead and facilitate group play participation.

**Intervention strategies.** The community playgroup has implications for occupational therapy providers who are considering implementing effective intervention strategies. The playgroup is a method of service delivery supported by the *Occupational Therapy Practice Framework, Third Edition* (AOTA, 2014). Strategies used in this method of service delivery can include participation in the playgroup, modeling playful behaviors, adapting the environment for social play, and coaching the caregiver in behavior management strategies. The literature established that children with special needs will benefit from participation in semistructured play (Lantz et al., 2004; Wolfberg,
2003; Yang et al., 2003; Zurcher et al., 2001), and this study supports that concept. The community playgroup is an additional opportunity for children to participate in semistructured play with their caregiver and peers within the community. This community playgroup also had time built in for the child to independently explore and initiate play. Participation in the playgroup can be an intervention strategy to increase a child’s playfulness through the use of modeling different play routines. This can be done with song, dance, and the use of a variety of play objects. The playgroup also can be used to increase social play opportunities with peers or obtain social outcomes important to the family. The community playgroup can provide an opportunity for caregivers to practice managing the behavior of their child in another setting in the community. The caregivers in this community playgroup were able to observe each other. One caregiver made a comment about how another caregiver was wonderful at being consistent about redirecting her son. Caregivers also provided encouragement to each other, which was evident in comments about how well one young child did in warm up and sitting song compared to an earlier performance. Often, suggested strategies were shared both by the occupational therapist and other caregivers.

In the context of the playgroup, the therapist can model playful behaviors to the caregiver and the child. For example, the occupational therapist may initiate a familiar song using hand motions and exaggerated gestures and tone with the caregiver and child. The therapist would wait for the child to interact and then respond accordingly. Afterwards, the caregiver and child would have the opportunity to sing the song together. The occupational therapist may pretend to have a birthday party with play cupcakes and
blow out the candles; the playgroup caregivers and children would be encouraged to join
the pretend party. In the community playgroup, the pretend playtime was used each week
to model pretend play interactions with objects and coach caregivers on what to try next.
Using play objects that are also available to the caregiver at home is beneficial as
caregivers will be able to replicate the play scenario at home. In some cases, other
caregivers will model playful interactions and play routines.

The playgroup can provide an opportunity for occupational therapists to observe a
child’s play in a group setting and coach caregivers on play participation in the
community. In this study, caregivers were given a practice skill at each session that they
engaged in and were then encouraged to try at home. At the following session,
caregivers reflected about how incorporating the practice skill worked or did not work at
home. One child really enjoyed working on the forward roll with mom at home and
would initiate the sequence by stating “stand up tall” to communicate to mom he was
ready to roll. Additional opportunities for coaching emerged from interactions.
Caregivers in this playgroup had children who did not sit for warm-up or song. The
occupational therapist engaged in problem-solving strategies with the caregiver, these
strategies were carried out, and then there was a time of reflection at the end of playgroup
in casual conversation. One successful strategy for circle time was allowing the child to
walk away for a minute, and then having the caregiver playfully fly him back to the circle
like an airplane to finish. Occupational therapists can coach caregivers through
observation, problem solving, strategy implementation, and reflection in the community
playgroup.
**The play environment.** Working within the context of early intervention, occupational therapy providers can create an invitation to play in the natural environment. One surprising finding in this study was that children only participated in an average of 1.9 play activities (defined by the caregiver) outside the home within a 4-week period. Some of the activities included the park, the beach, a walk outside, visit with friends, and music class. This would support other literature that suggested children with special needs may not have the same play opportunities as their peers (Brodin, 1999; Burke, 1996). By encouraging families to participate in a playgroup, the occupational therapist is connecting the family with the community. Whereas this study used one consistent location for the 8-week playgroup, it would be beneficial to have playgroups in different community settings as well.

The environment can be used to encourage and support playful behaviors. The literature has suggested certain play objects can have the potential to encourage interactions (Kim et al., 2003). In this playgroup, balls, bubbles, and balloons were used to create a playful environment in an otherwise mostly empty room. Use of a rectangular blue mat created a smaller space where the children learned exciting things happened. The use of a semistructured format also encouraged participation as children anticipated familiar routines when they saw the play objects, such as the small ball pit or music toys.

The occupational therapist working in early intervention can use the playgroup as a way for children to practice their social skills. Play becomes increasingly social with age. Many children now transition from the home environment with their caregiver to a preschool setting. Often, children have little experience interacting with peers in a
semistructured schedule like the one they will encounter in the preschool setting. Occupational therapists working in early intervention can use the playgroup to promote a successful transition to preschool. The playgroup can allow children the opportunity to practice shared attention in circle time with the familiar caregiver nearby. Participating in the playgroup with the caregiver can facilitate the transition from play at home with the caregiver to play at school with peers.

**Implications for Further Research**

The results of this exploratory study were based on a small sample size of eight dyads participating in the community playgroup. It is recommended that additional research be conducted in a different geographical area with a larger sample size. Research that investigates the effectiveness of outcomes of children in early intervention programs that use community playgroups as part of their service delivery would be beneficial. This could better determine long-term child outcomes from community playgroup participation at transition out of early intervention and differences between other early intervention programs that do not offer community playgroups.

Future research can explore how different playgroup contexts may support or inhibit playfulness. For example, does a playgroup held outdoors have the same effectiveness as a playgroup indoors? This would also include playgroups at different locations in the community, such as the library, the pool, and the park. Another possibility is playgroups that rotate locations in the community. Are they all effective in increasing the playfulness of the child? Are there additional benefits to varying the playgroup environment over time?
Researchers may want to look at the effect of playgroups on child factors, such as sensory processing, social participation, and support for transition into more social play. Additional measures that describe sensory processing or social participation may be helpful in determining the influence of a playgroup on these areas of the child or participation. Sensitive measures of caregiver sensitivity and responsiveness can help to determine the effects of short-term programs on interaction style. More research needs to be done to determine if a playgroup supports transition into the preschool environment.

There is also a need for qualitative research from the caregiver’s perspective about play, playfulness, and play participation of young children with special needs in the community. Information about where typically developing children play in the community is necessary. Additionally, research could identify some of the barriers that families of children with special needs face that limit play participation. There are likely common themes that families can identify that will provide occupational therapists and other providers with information to guide intervention and provide supports to facilitate play participation.

Results that show little or no change in interaction style of the caregiver indicate a need to explore what interventions are effective in modifying caregiver sensitivity and responsiveness in early intervention. The development of a new measure might allow for detection of smaller changes in interaction style. Also warranting further investigation would be why some families choose not to participate in playgroup.

Future research also can explore how to nurture and support playfulness in a child. This can begin with early social relationships with caregivers and family at home.
This study determined that the playgroup was effective in increasing the child’s playfulness, but it would be worthwhile to look at the effectiveness of other intervention strategies on playfulness. There are also implications for research on the effectiveness of daycare playgroups on child playfulness.

**Limitations**

The limitations of this study are related to the small sample size. Smaller samples are unable to provide adequate statistical power for a fine-tuned analysis of the effectiveness of a playgroup. This research suggests that a community playgroup is appropriate and effective intervention for children of various ages and abilities.

A child’s socioeconomic status may influence playfulness. Transportation to playgroup and caregiver working were identified reasons that a child was not able to participate in playgroup sessions. The current study had participants with a range of household incomes. It is possible that families without transportation or families that had all caregivers working would not be able to participate in the community playgroup. Some families traveled around 25 miles to attend the playgroup.

This sample had limited ethnic diversity. All eight participants were either White or Hispanic, limiting the generalizability to other ethnic groups. This playgroup was limited to participants who lived in a geographical area, so ethnic groups not present in the area of Southwest Florida where the study took place were not represented. This study also did not include families who did not have at least one caregiver who spoke English, which may have limited the participation of other caregiver–child dyads.
Research has revealed the importance of early intervention in developmental outcomes of children. All of the participants in the playgroup were already enrolled in early intervention, so the effect of playgroups on children not enrolled in an early intervention program could not be determined. Some children in the population are at risk or have special needs yet have not been identified, and these families are usually not aware of community playgroups in order to benefit from participation.

Participants in this study elected to participate. One might conclude that these caregivers valued the playgroup or play more than those who chose not to participate in the playgroup. Because they were motivated to participate and contacted the researcher, the participants might have been more likely to respond to intervention.

**Recommendations**

This research sought to fill a gap in the literature on playgroups in early intervention and provide information on effectiveness. The results supporting the effectiveness of the playgroup on playfulness suggest that playgroups have an important role in the provision of services to families enrolled in early intervention. Further, occupational therapists who are providers to children enrolled in early intervention can develop and implement playgroups based on the needs of their clients and the community supports. Occupational therapists should advocate for their clients to participate in playgroups.

There is a need for early intervention programs to develop and support playgroups as part of comprehensive early intervention implementation. Evidence regarding the effectiveness of the community playgroup on the playfulness of the child can translate to
program development. Ongoing playgroups that occupational therapy providers develop and implement can be available to all families receiving services within a geographical area. It would be beneficial to have playgroups at different times, on different days, and in different environments so that all families can have the opportunity to benefit.

Families should advocate to members of the community for safe places to access for play. Community stakeholders should work with early intervention programs to share resources. Policy makers at the state and national levels should advocate for funding to support programs, such as the playgroup, with effectiveness evidence to support it as best practice. Legislation needs to support all children participating in play and benefiting from playful interactions.

Summary

This quasi-experimental, pretest-and-posttest, repeated measures design measured the effectiveness of a community playgroup on the playfulness of children ages 15 months to 3 years old enrolled in early intervention. A literature review supported the idea that a community playgroup that included the caregivers was an effective intervention for children in early intervention. The eight children who participated in the community playgroup in Southwest Florida were more playful at the conclusion of the study based on the ToP. Caregiver sensitivity and responsiveness as measured by the NICHD adapted scale codes remained relatively stable throughout the study, but it is noted that all caregivers were moderately high-to-high responders to their children. At the conclusion of the study, the caregivers who were more sensitive and responsive had children who were more playful.
The underlying conclusion from this study is that the community playgroup increased the playfulness of the participating special-needs children, more so than just standard-of-care early intervention alone. The playfulness increases seen in children as a result of the playgroup intervention were, for the most part, maintained after the playgroup concluded. Community playgroups have shown effectiveness in early intervention. The community playgroup can be utilized by the occupational therapist in order to improve the playfulness of the child, encourage play participation, and influence health and well-being throughout a lifetime.

Chapter 5 concludes this research study. The findings of this study support the effectiveness of a community playgroup as part of comprehensive occupational therapy in early intervention. Recommendations suggest that all families and children; early intervention providers; occupational therapists; community stakeholders; and local, state, and national policy makers participate in the funding, program planning, implementation, and participation of community playgroups. Further suggestions include additional research on the impact of program-wide playgroups, playgroups with specific populations and community locations, and the experience of play participation as described by the families.
References


### Appendix A

**Family Information and Activity Log**

**Subject code:**

**Your child’s gender:**  M  F  (please circle)

**Your child’s ethnicity:**  
- American Indian
- Asian
- Black
- Hispanic/ Latino
- Native Hawaiian/ Pacific Islander
- White/ Non-Hispanic

**Family income:**  
- less than 10,000
- 10,000 to 19,999
- 20,000 to 29,999
- 30,000 to 39,999
- 40,000 to 49,999
- 50,000 to 59,999
- 60,000 to 69,999
- 70,000 to 79,999
- 80,000 to 89,999
- 90,000 to 99,999
- 100,000 to 149,999
- 150,000 to 200,000

**Weekly activity log:**  Please write in any extra activities (therapy, park, playdate, etc.)

<table>
<thead>
<tr>
<th>Week</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments**
Appendix B:

Eight-Week Community Playgroup Protocol and Materials

Introduction/Hello—Bring group together with simple hello song (hello, hello, say hello or the like) each of the caregivers will introduce themselves and the child, and the group waves hello.

Warm-Up—Same each week to music, starts with arms bounce up and down, arms side to side, little circles forward and back, reach and stretch, twist body, give a big hug, stomp feet, open close legs, kick feet, rock side to side on caregivers lap

Play Skill—Modeling demonstration with caregiver practice

1. Baby sit up (holding arms gently pull baby and assist them to pull to sit)
2. Upside down (place child on caregiver legs, caregiver bend legs to invert them slightly)
3. Lap roll over (place child’s head sideways in caregivers lap, caregiver gently flips child from face up to face down)
4. Elevator (lying on back caregiver lifts baby up overhead)
5. Forward roll
6. Headstand
7. Log roll
8. Ball bounce

Sitting Song

1. Itsy Bitsy Spider
2. The Wheels on the Bus
3. Open/Shut Them
4. Tony Chestnut
5. Twinkle, Twinkle, Little Star
6. 5 Little Monkeys
7. Skinnamariky Dinky Dink
8. Row, Row, Row Your Boat
Standing Dance

1. Head, Shoulders, Knees, and Toes
2. If You’re Happy and You Know it
3. Teddy Bear Teddy Bear
4. Mulberry Bush
5. Hokey Pokey
6. Down by the Station
7. Pop goes the Weasel
8. Ring around the Rosey

Explore/Sensorimotor Play—Same each week. Different types of balls and plastic pool, bean bags, a plastic disc to slide on, scooter board, a large ball to bounce on or push, rings, cones, hula hoops, mats/stools to climb on, parachute, tunnel, push/pull toys, ride-ons

Construction/Pretend Play—Same each week with construction toys. Pretend play items change each week. Bring out blocks, puzzles, Lego/Duplo, music toys every week. Pretend play new each week.

<table>
<thead>
<tr>
<th>Food items, carton</th>
<th>Dress up</th>
<th>Baby</th>
<th>Birthday party</th>
<th>Animals</th>
<th>Puppets</th>
<th>Cooking/ baking</th>
<th>Outdoor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grocery boxes, cans</td>
<td>Clothing</td>
<td>Baby dolls</td>
<td>Wrapping paper</td>
<td>Stuffed animals</td>
<td>Assorted puppets, cardboard box stage for puppet shows</td>
<td>Bowls</td>
<td>Towels</td>
</tr>
<tr>
<td>Fruits and veggies</td>
<td>Hats</td>
<td>Shoes</td>
<td>Tape</td>
<td>Plastic animals</td>
<td></td>
<td>Measuring cups and spoons</td>
<td>Beach toys</td>
</tr>
<tr>
<td>Shopping carts/baskets</td>
<td>Scarves,</td>
<td>Bottles</td>
<td>Small toys to wrap</td>
<td>Fish</td>
<td></td>
<td>Wisk</td>
<td>Shells</td>
</tr>
<tr>
<td>Shop bags</td>
<td>Ties</td>
<td>Baby utensils</td>
<td>Party hats</td>
<td>Circus tent – mat and parachute</td>
<td></td>
<td>Wooden spoon</td>
<td>Rocks</td>
</tr>
<tr>
<td>Cash register</td>
<td>Jewelry</td>
<td>Blankets</td>
<td>Blow toys Plates</td>
<td></td>
<td></td>
<td>Oven mitts</td>
<td>Leaves</td>
</tr>
<tr>
<td>Play money</td>
<td></td>
<td>Baby gear:</td>
<td>cups, napkins Piñata</td>
<td></td>
<td></td>
<td></td>
<td>Sticks</td>
</tr>
<tr>
<td>Wallets</td>
<td></td>
<td>stroller, high chair, crib</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>purses</td>
<td></td>
<td>Bath</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Goodbye Song—Bubbles, Puppet, and Goodbye (each child’s name), Goodbye (name), Goodbye (name), say Goodbye.
Appendix C

The ToP

Table 2. ToP protocol sheet.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>EXT</th>
<th>INT</th>
<th>SKILL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is actively engaged</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decides what to do</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feels sufficiently safe to keep playing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tries to overcome barriers or obstacles to persist with an activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modifies activity to maintain challenge or make it more fun</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engages in playful mischief or teasing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engages in activity for the process rather than primarily for the end product</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretends to be someone else; to do something else; that an object is something else; that something else is happening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incorporates objects or other people into play in unconventional or variable ways</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negotiates with others to have needs/desires met</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engages in social play</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supports play of others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enters a group already engaged in an activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initiates play that others take up</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clowns or jokes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shares toys, equipment, friends, ideas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gives readily understandable cues (facial, verbal, body) that say, &quot;This is how you should act toward me.&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responds to others' cues</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrates positive affect during play</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interacts with objects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transitions from one play activity to another</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. From Test of Playfulness (ToP) 4.2 manual revised 11/10 by A. Bundy, 2010, p. 9, Lidcombe, Australia: University of Sydney. Reprinted with permission.
Appendix D

ToP Keyform

<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>engaged ext</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>decides ext</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>safe ext</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>mischief/trolling ext</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>process ext</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>unconventional ext</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>social play ext</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>clowns/jokes ext</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>gives cues ext</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>engaged int</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>persists int</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>social int</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>affect int</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>interacts w obj int</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>engaged skill</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>modifies skill</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>mischief/trolling skill</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>pretends skill</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>unconventional skill</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>negotiates skill</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>social play skill</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>supports skill</td>
<td>0.2</td>
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</tr>
<tr>
<td>enters skill</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>initiates skill</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>shares skill</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>gives cues skill</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>reads cues skill</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>interacts w obj skill</td>
<td>0.4</td>
<td></td>
</tr>
</tbody>
</table>

Appendix E

Caregiver-Child Structured Interaction Qualitative Rating Scales
Adapted From NICHD Study of Early Child Care Research Network
Modified by A. Quittner for the CDaCI study
Adapted from Quittner version by J. Baker for the Messinger Sib Study and reprinted with permission.

I. Mother Rating Scales

1. Sensitivity/Responsivity

The key defining characteristic of sensitivity is that it is child-centered. The sensitive mother is tuned in to her child and manifests awareness of her child’s needs, moods, interests, and capabilities. She allows this awareness to guide her behavior with her child.

In the toddler years, developmental issues center on the child’s needs for autonomy and control, independence, mastery, and self-regulation. The sensitive mother is responsive to these needs and the child’s own agenda. The need for dependency on mother is present as well and struggles between conflicting needs may be present. The sensitive mother is flexible in supporting and responding to the opposing desires that can be present simultaneously. A sensitive mother of toddlers structures her child’s physical and social environment so that the child has legitimate, interesting options for play, so the child’s preferences can be honored within reason, and so the child can remain effectively engaged in playful or goal-directed activity. The sensitive mother also offers frequent praise and encouragement, withholds criticism, and provides the right mix of support and independence so that her child can experience success and pride and develop effective self-regulation skills.

If her child initiates social gestures verbally or nonverbally (e.g., looks at mother, asks to be held, shows mother objects, speaks to mother, touches mother affectionately); makes demands, desires or requests known; asks questions or asks for assistance, the sensitive mother responds appropriately.

If the child appears disengaged, the sensitive mother takes time to reengage her child in a manner that demonstrates awareness of and sensitivity to the child’s mood and preferences for play style and content. For example, if her child is uninterested, the mother may show new combinations of the toys, new activities, or other engaging opportunities; help the child decide what to become involved with; or help the child make the transition to a new activity. When her child is interested and involved with toys, the
sensitive mother allows him/her to independently explore them. When the child is independently engaged, the sensitive mother will still check in with her child visually and shows that she is actively taking an interest in the child’s activities.

Insensitive mothers ignore their child, respond in a listless manner, or respond with developmentally inappropriate comments and behavior. Alternatively, the insensitive mother could be overstimulating and intrusive; for example, by continuing to engage her child even when the child is providing clues that s/he is seeking to end the interaction or desires to work autonomously.

Observers must also consider the genuineness of the mother’s responses to her child. Sensitivity that does not appear genuine is denoted as “apparent sensitivity.” Apparent sensitivity is marked by a “disconnect” between WHAT the mother is saying and the MANNER in which she says it. This apparent sensitivity is belied by the mother’s affect, which may be flat, unnaturally sweet, pretentious, or hyperexaggerated. Here, the observer can sense that the mother’s behavior is inauthentic.

Markers of maternal sensitivity include (a) acknowledging the child’s affect; (b) responsiveness to the child’s talk and/or activity; (c) facilitating, but not over controlling the child’s play; (d) appropriate timing of activities to reflect the child’s interest; (e) changing the pace when the child appears understimulated, overexcited, or tired; (f) picking up on the child’s interests; (g) shared positive affect; (h) providing an appropriate level of stimulation and appropriate range and variety of activities; (i) timely discipline that matches the nature of the misdeed and the child’s ability to understand and benefit from it; and (j) general flexibility in handling compliance and autonomy issues.

1. Very Low. Mother displays no ability to sense or respond to child’s emotional states or cues. This mother can be detached and aloof or overtly hostile to or rejecting of the child’s emotional needs and bids for support. Alternatively, the mother may be so preoccupied with self that she appears incapable of taking the child’s perspective or even perceiving what the child is feeling and thinking. Stated differently, there is no affective attunement by the mother and the interaction is completely adult-centered. This rating is rare and is often difficult for the observer to see.

2. Low. Mother displays one of the behavioral styles described in #1, but the interaction contains instances where some sensitivity to the child’s behavior or affect is present. Mother may make brief or weak attempts to respond to the child’s actions or to facilitate play. The overall tone of this interaction is a failure of emotional attunement with the child, but the failure is less severe and less pervasive than #1.

3. Moderately Low. This mother’s ability to read the child’s emotional cues is weaker than that of the “average” mother. While she sometimes acknowledges the child’s affect or appropriately responds to his overtures, there are a number of instances in which she fails to do so. Thus, the interaction is marked by several occasions in which the mother is
either inappropriately adult-centered or emotionally detached. In addition, her attempts to respond to her child’s emotions may seem inauthentic or “staged.”

4. **Moderate.** The “moderate” rating is used for mothers who display inconsistent sensitivity. Inconsistent mothers exhibit equal portions of appropriate and sensitive behavior and behavior reflecting an indifference to or a lack of awareness of the child’s actions or emotions. These mothers may occasionally make positive statements in a bored tone, smile in a less than genuine manner, or otherwise display half-hearted interest.

5. **Moderately High.** This rating is used for mothers whose interactions with her child, though on the positive side of the continuum, show a few instances of detachment, preoccupation, or adult-centeredness. This mother is “good enough” in tuning in to her child’s cues, but does not exhibit the “special” quality associated with a higher rating.

6. **High.** This code is similar to a #7; however, the interaction lacks the consistently “exceptional” quality which is associated with a #7, generally because the observer notices instances in which the mother is inattentive or has minor lapses in responding to the child’s actions or speech or acknowledging his emotions. This rating is appropriate for highly attuned mothers with some lapses in attention or affective involvement.

7. **Very High.** This rating is appropriate for interactions that have an “exceptional” quality which psychologists deem optimal. The mother is emotionally present throughout the interaction and is consistently and genuinely attuned to the child’s emotional cues. This is demonstrated most forcefully by a sense of synchrony in the dyad between child behavior and maternal response. The mother maintains interested eye contact, and the interaction is marked by warm smiles and a feeling of emotional intimacy and respect. This being said, do not wait for a “perfect” mother before giving this rating – if you cannot pinpoint something that the mother “missed” during the interaction, a #7 should be assigned.