PLAY THERAPY FOR CHILDREN WITH AUTISM SPECTRUM DISORDER:

A SINGLE-CASE DESIGN

Jenifer N. Ware

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APPROVED:

Dee Ray, Co-Major Professor
Natalya Lindo, Co-Major Professor
Jonathan Ohrt, Committee Member
Jan Holden, Chair of the Department of Counseling and Higher Education
Jerry Thomas, Dean of the College Of Education
Mark Wardell, Dean of the Toulouse Graduate School
The purpose of this study was to explore the impact of child-centered play therapy (CCPT) on the social competence, empathy, and self-regulation of children diagnosed with autism spectrum disorder (ASD). The constructs of social competence, empathy, and self-regulation were measured using the Social-Emotional Assets Rating Scale (SEARS). This study utilized a single-case design; the researcher collected data throughout the duration of the study, including baseline, treatment, and follow-up phases. The sample included 5 children ranging from ages 6 to 8 years old: 3 Caucasian males, 1 African-American female, and 1 Latin-American female. Mothers of the participants completed the parent form of the SEARS once per week throughout all phases of the study. During the treatment phase of the study, the children participated in CCPT approximately 2 times per week for 30 minutes each time. Visual analysis of the data indicated play therapy was beneficial for three participants, as they demonstrated improvements in social competence, empathy, and self-regulation. Two participants responded to the intervention with mixed results. Discussion includes implications for clinical practice and future research as well as limitations of the study.
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by

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Winnie The Pooh said it well…you are braver than you believe, stronger than you seem, and smarter than you think. The journeys of this doctoral program, dissertation, and life in general have been filled with challenges, self-discovery, laughter, sorrow, and joy. I could not have made it through this process without the encouragement and support of many people for which I am eternally grateful. I dedicate this to you.

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PLAY THERAPY FOR CHILDREN WITH AUTISM SPECTRUM DISORDER: A SINGLE-CASE DESIGN

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by deficits in social communication and social interactions as well as restricted and repetitive behaviors, interests, or activities. ASD “encompasses disorders previously referred to as early infantile autism, childhood autism, Kanner’s autism, high-functioning autism, atypical autism, pervasive developmental disorder not otherwise specified, childhood disintegrative disorder, and Asperger’s disorder” (American Psychiatric Association, APA, 2013, p. 53). The Centers for Disease Control and Prevention (CDC; 2014) estimates 1 in 68 children in the United States has ASD. This prevalence has been on the rise, as past estimates were 1 in 110 in 2006, 1 in 125 in 2004, and 1 in 150 in 2000 (CDC, 2014). These rates are considerably higher than 50 years ago when Lotter (1966) found a prevalence rate of 4.5 per 10,000. Additionally, the CDC (2014) reported a higher incidence in boys with 1 in 42 boys and 1 in 189 girls having ASD.

As described in the most current edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; APA, 2013), children with ASD struggle with social communication and social interaction. Dating back to the first observations of children with ASD, Kanner (1943) described that these children had an atypical way of relating to others. Current research also supports children with ASD struggle with peer relationships (Konig & Magill-Evans, 2001; Orsmond, Krauss, & Seltzer, 2004). Social communication and interaction involves social-emotional reciprocity and nonverbal communicative behaviors, both of which are difficult for children with ASD. They have lower levels of empathy (Baron-Cohen & Wheelwright, 2004) and may be less
responsive to others due to a lack of awareness of others’ emotions or not knowing how to respond (Loveland, 2005). In addition to the struggle of understanding and responding to others, children with ASD also have difficulty regulating their own emotions and behaviors (Volkmar, Paul, Klin & Cohen, 2005). This can be a result of sensory overload (Grandin, 1995) or difficulty with shifting their attention (Bolick, 2004).

As the prevalence of ASD increases so does the need for appropriate interventions to help the associated impairments. Historical approaches to treating autistic symptoms have primarily included behavioral interventions that focus on the child’s deficits. Some psychodynamic approaches have also been documented. Although researchers have demonstrated that behavioral strategies are effective in building specific skills (see Foxx, 2008; Reichow, Doehring, Cicchetti, & Volkmar, 2011), there remains a need to address the interpersonal dynamics and struggles of children with ASD. Some experts in the field of ASD have proposed play-based interventions for working with children with ASD (Gallo-Lopez & Rubin, 2012; Greenspan & Wieder, 2006), providing support for using play therapy as a method of treatment.

Landreth (2012) defined play therapy as a dynamic interpersonal relationship between a child and therapist trained in play therapy, emphasizing the relationship as an essential element for therapeutic change. With the development of this safe relationship, the child has the opportunity to fully express and explore one’s feelings, thoughts, experiences, and behaviors. “Play provides a developmentally responsive means for expressing thoughts and feelings, exploring relationships, making sense of experiences, disclosing wishes, and developing coping strategies” (Landreth, 2012, p. 12). In play, children have the opportunity to make sense of their experiences and feel a
sense of control of their world, which is vital to emotional development. Play therapy may be an effective treatment method for children on the autism spectrum due to their difficulties with verbal communication and reduced cognitive skills. From a child-centered perspective, children with ASD are challenged in relationships (Ray, Sullivan, & Carlson, 2012). Child-centered play therapy (CCPT) is a relationship-based intervention where children with ASD can have the opportunity to feel fully accepted by the therapist, a condition that is often unavailable to these children (Ray et al., 2012). The play therapist works to create an environment where a child can feel safe, providing an opportunity for self-expression in ways that are most comfortable and meets one's personal level of development. Once children experience this unconditional acceptance, safety, and freedom of expression, they have an opportunity to develop self-understanding and make changes from an intrinsic need. These changes then become integrated into the person of the child and will not dissipate when therapy ends or rewards are no longer available (Ray et al., 2012).

Children with ASD have significant challenges with social and communication behaviors. Current treatment approaches are primarily behavioral and lack long-term efficacy once rewards are removed (Strain & Schwartz, 2001). There appears to be a gap in the treatment of children with ASD due to the lack of focus on interpersonal dynamics. Focusing on these interpersonal dynamics is an important aspect of treatment because it can lead to improved self-understanding and communication with others. Due to their extensive difficulties with social communication and interaction, children with ASD need interventions that target these specific areas that lead to consistent relationships. Improved communication and self-expression can help children
with ASD develop positive and consistent relationships, become more resilient, and cope with challenges in life. Ray, Stulmaker, Lee, and Silverman (2013) suggested that CCPT is specifically designed to help children increase empathy and self-regulation.

Very little research has been conducted using play therapy for children with ASD. Within this limited research, some researchers utilized more directive play therapy approaches in their treatment of children with autism and found it to be helpful (Bromfield, 1989; Kenny & Winick, 2000). Specific to CCPT, Josefi and Ryan (2004) completed a case study of a 6-year-old boy with autism and found that non-directive play therapy (i.e., CCPT) was helpful for him in a variety of areas, including emotional development and acceptance of boundaries. Although these studies provide support for utilizing play therapy with this population, there is a strong need for more research to better understand how and to what degree that play therapy is effective for children with ASD.

The purpose of the current study was to evaluate the effectiveness of CCPT for children diagnosed with ASD. CCPT is a nondirective form of treatment that has not been explored with this population and attends to an area that is often overlooked. Through an accepting and empathic relationship with a therapist, a child with ASD may likely discover self-enhancing ways of behaving, communicating, and relating to others. Specifically, I examined the effectiveness of CCPT on the child’s level of empathy, self-regulation, and social competence.
Methodology

Participants

Research participants included five children recruited from a local autism clinic and speech and hearing clinic located on the campus of a large state university in the southwestern United States. Participants met the following criteria: (a) received a diagnosis of ASD from a physician or mental health professional according to the DSM-5 (APA, 2013); (b) ages between 5 and 9 years old; (c) met criteria for Tier 2 or Tier 3 on the Social-Emotional Assets and Resilience Scales – Parent form (SEARS-P; Merrell, 2011); and (d) were not involved in any counseling services. I gained university human subjects approval prior to the start of the study. Additionally, parents or legal guardians received and signed informed consents for participants prior to the start of the study. Individual information for each participant is listed below. Pseudonyms were used to help maintain confidentiality.

Participant 1. Bella was an 8-year-old Latin American female who resided with her biological parents and younger brother. Bella was diagnosed with ASD at 3 years old by a developmental pediatrician and became enrolled in early intervention services in school at that time. Starting at 3 years old, Bella received speech therapy, Applied behavior analysis (ABA), biomedical, and occupational therapies. Her mother reported that her progress fluctuated while receiving these treatments, but Bella had not shown great improvement in her interpersonal skills. At the beginning of this study, Bella was enrolled full-time in an autism treatment center and involved in ABA, speech therapy, and occupational therapy services. Due to the severity of Bella’s behavioral problems, such as tantruming, she was prescribed Risperdone, Buspar, and Intuniv.
Participant 2. Ethan was a 7-year-old Caucasian male who was adopted at birth by his mother and father. A physician at a children’s hospital diagnosed Ethan with ASD at 3 years old. He first started receiving speech therapy at 18 months old and then, at 2 years old, participated in ABA, occupational therapy, and physical therapy. When he was 3 years old, music therapy and adaptive physical education services were added for Ethan through the school district. In addition to ASD, Ethan had an auditory processing delay and sensory concerns, particularly regarding touch, auditory, and smells. He did not take any medications on a regular basis. At the start of the study, Ethan was involved in speech therapy as well as ABA, occupational therapy, and physical therapy through his school.

Participant 3. Rachel was a 9-year-old female of African American and Spanish descent who lived with her mother, older brother, and maternal grandmother. Rachel was diagnosed with ASD at 5 years old through her school system. She started speech therapy when she was 3 years old. From 6 to 8 years old, Rachel was enrolled in ABA services. At the start of the study, Rachel was involved in speech therapy services.

Participant 4. Ian was a 6-year-old Caucasian male who lived with his parents and two older sisters. He was diagnosed with ASD at 2 years old by a neurologist. According to his mother, Ian was developmentally normal until 19 months old when he suddenly became unresponsive and disconnected from others. He started speech therapy, occupational therapy, and physical therapy at that time. Starting at 2 years old, Ian received ABA services through various programs. At the start of the study, Ian was enrolled full-time at an autism treatment center where he received ABA and speech therapy services. In addition to ASD, Ian was diagnosed with pica disorder at 1 year old.
His mother also reported a sensory processing disorder that she noticed since he could crawl.

Participant 5. Hunter was a 6-year-old Caucasian male who lived with his adoptive parents. Hunter was adopted at birth and the adoption was finalized when he was 3 weeks old. Hunter received a formal diagnosis of ASD and Attention Deficit-Hyperactivity Disorder (ADHD) when he was 5 years old from a physician at a children’s hospital. He started medication for ADHD upon receiving his diagnosis, which helped improve his sleep and decrease his noncompliant behavior. Hunter started receiving speech therapy at age 3 ½ years old, occupational therapy when he was 4 years old, and ABA when he was 6 years old. At the start of the study, Hunter was enrolled full-time at an autism treatment center and received ABA, speech therapy, and occupational therapy.

Instrumentation

The Social-Emotional Assets and Resilience Scales. The Social-Emotional Assets and Resilience Scales (SEARS; Merrell, 2011) is a strength-based assessment that assesses the social-emotional competencies for children and adolescents. Parents, guardians, or other home-based caregivers complete the parent form of the SEARS (SEARS-P) for children and adolescents aged 5-18. The SEARS-P allows for repeated measure administration unrestricted by length between administrations. It has 39 items and includes the following three subscales: Self-Regulation/Responsibility (SR/R; 22 items), Social Competence (SC;10 items), and Empathy (E; 7 items).
Scores are grouped into three tiers. Tier 1 represents average to high functioning students, Tier 2 signifies students in the at-risk range, and students in Tier 3 are categorized as high risk.

The SEARS-P has strong internal consistency (α = .96). The internal consistency reliability coefficients for the subscales are as follows: Self-Regulation/Responsibility (α = .95), Social Competence (α = .89), and Empathy (α = .87). The SEARS-P also has strong test-retest reliability (r = .93). The test-retest reliability coefficients for the subscales are as follows: Self-Regulation/Responsibility (r = .92), Social Competence (r = .88), and Empathy (r = .90). The SEARS-P was correlated with the parent rating form of the Social Skills Rating System (SSRS; Gresham & Elliott, 1990) and the Home and Community Social Behavior Scales (HCSBS: Merrell & Caldarella, 2002), providing evidence for convergent validity for the SEARS-P (Merrell, 2011). Merrell (2011) specifically promoted the use of the SEARS with children who exhibit symptoms of disorders such as high-functioning autism, pervasive developmental disorder, or Asperger’s disorder.

Procedures

I utilized an experimental single-case methodology for this study with a reversal/withdrawal ABA design. After the participants were selected, parents signed informed consents and waived assent due to the developmental level of the participants. Data for each participant was collected and analyzed separately to understand the unique changes in that individual. First, a participant’s parent or caregiver participated in a parent interview to gather demographic and developmental information. The study then started with an initial baseline phase of measurement in
which participants did not engage in CCPT. A parent of each participant completed a SEARS-P one time per week. As recommended by Kennedy (2005), the baseline phase continued for a minimum of three weeks in order to gain an average data point for each participant. Baseline phase was extended if there was strong variability in the data. After completion of the baseline phase, the treatment phase began. In the treatment phase, participants engaged in 30-minute play therapy sessions twice a week for approximately 10 weeks. Occasionally, participants only engaged in one play therapy session in a particular week due to school closings, participant illness, or absences. Parents of each participant continued completing a SEARS-P once per week at the end of each week. After completing approximately 20 play therapy sessions, the participants returned to a non-treatment follow-up phase. Some participants had fewer than 20 play therapy sessions due to entering the study at a later time and also needing longer baseline phases. During the follow-up phase, participants no longer engaged in CCPT and parents of participants continued completing the SEARS-P each week for three weeks. Table 1 provides information for each participant’s protocol during this study. After the follow-up phase was completed, each parent participated in a post interview to gather information about any perceived changes.

All children in this study received individual CCPT according to Ray’s (2011) *Child-Centered Play Therapy Treatment Manual*. The playroom was equipped with toys according to suggestions made by Landreth (2012), representing many categories including nurturing, mastery, aggression, imaginary, and creative expression to allow for a wide range of emotional expression. The room was also equipped with a camera to record all sessions. In addition to serving as the primary researcher, I also served as the
play therapist facilitating CCPT with the participants in this study. I completed three years of doctoral work in counseling, 20 hours of graduate-level coursework in play therapy, and 9 years of experience utilizing play therapy. Additionally, I am a state-licensed counseling supervisor and registered play therapist supervisor. After the conclusion of the study, one video recording per child was randomly selected for a treatment fidelity review. The fidelity reviewer held a master’s in counseling and completed 2 years of doctoral coursework including 2 years of supervised clinical work in CCPT. The reviewer rated therapist responses with the Play Therapy Skills Checklist (Ray, 2011) to ensure the therapist’s responses fell within the verbal categories of CCPT protocol. Sessions adhered to CCPT protocol 99% of the time.

Table 1

<table>
<thead>
<tr>
<th>Participant</th>
<th>Baseline</th>
<th>Treatment</th>
<th>Follow-Up</th>
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<tr>
<td></td>
<td># of Weeks</td>
<td># of Weeks</td>
<td># of Sessions</td>
</tr>
<tr>
<td>Bella</td>
<td>4</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>Ian</td>
<td>3</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>Hunter</td>
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<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Ethan</td>
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<td>8</td>
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</tr>
<tr>
<td>Rachel</td>
<td>7</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

Data Analysis

For this study, I used visual data analysis as the primary method of data analysis, examining the level, trend, and variability to analyze between and within-phase patterns (Kennedy, 2005). The level of data refers to the mean score of the data within a phase. The trend of data is the slope of the best fitting straight line for the data within a phase and interpreted according to $R^2$. According to Cohen (1988), a $R^2$ value of .01 indicates
a small effect, $R^2$ value of .09 demonstrates a medium effect, and a $R^2$ value of .25 indicates a large effect. The data within a phase is considered more stable when data points are closer to the trend line. Variability is the fluctuation of the data. The greater the variability within a phase, the more data points are needed to document a predictable within-phase pattern. Variability is determined through visual inspection and interpretation can be informed through standard deviations of level means.

Along with examining within-phase patterns, between-phase patterns were also analyzed once the intervention phase started and continued throughout the remainder of the study. The first pattern is termed overlap, which is the proportion of data in one phase that overlaps with data in the previous phase. The weight of the overlap is greatest when trend and variability are minimal. Additionally, low overlap suggests a larger effect (Horner, Swaminathan, Sugai, & Smolkowski, 2012). A second pattern is the immediacy of the effect, which is any change in data patterns following manipulation of the independent variable. Typically, the more immediate the effect, the more likely the change is attributed to manipulation of the independent variable (Horner et al., 2012).

Finally, effect size was calculated using nonoverlap of all pairs (NAP). Used in conjunction with visual analysis, effect size calculations produce a value for the strength of the relationship between two variables. To calculate NAP, I paired each data point in the baseline phase with each data point in the treatment phase, examining each pair to determine the number of nonoverlapping pairs. As suggested by Parker and Vannest (2009), I assigned one point for each overlap and half a point for each tie. After adding up the points to determine the sum of overlap, I subtracted this number from the total possible pairs and divided it by the total number of pairs to determine the NAP. Parker
and Vannest provided the following conservative and “very tentative NAP ranges” (p. 264) for interpretation of single case effect sizes: 0-.65 are considered weak effects, .66-.92 are medium effects and .93 -1.0 are strong effects.

Results

Each participant’s parent completed a SEARS-P each week that generated one score for each of the identified constructs. I separately evaluated each construct by assessing the level, trend, variability, immediacy of effect, and overlapping data. Additionally, I calculated an effect size using the NAP statistic. Due to the amount of data analyzed, only results for substantial findings are presented in this section.

Participant 1: Bella

Table 2 presents Bella’s results, including the means, standard deviations, trend, and NAP effect size for each subscale. For two subscales, Social Competence and Empathy, means increased from the baseline phase to the intervention phase and then slightly decreased during the follow-up phase. For Self-Regulation/Responsibility, the mean continually increased across all phases of the study. Trend analysis revealed an upward trend for all subscales with large effect sizes. There was moderate variability between phases for Self-Regulation/Responsibility and low variability for Social Competence and Empathy. Additionally, NAP effect sizes for all subscales indicated a medium treatment effect. Figure 1 is a graphical illustration of the treatment effect across phases.
Table 2

*Bella’s Results Across Phases*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Follow-Up</th>
<th></th>
<th></th>
<th>R²</th>
<th>NAP</th>
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<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
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<tr>
<td>Self-Regulation/Responsibility (SR/R)</td>
<td>22.75</td>
<td>1.71</td>
<td>25.45</td>
<td>2.09</td>
<td>26.00</td>
<td>3.61</td>
<td>.27</td>
</tr>
<tr>
<td>Social Competence (SC)</td>
<td>16.75</td>
<td>2.63</td>
<td>17.09</td>
<td>2.66</td>
<td>17.00</td>
<td>2.00</td>
<td>.22</td>
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<td>Empathy (E)</td>
<td>19.25</td>
<td>2.50</td>
<td>22.00</td>
<td>2.20</td>
<td>20.00</td>
<td>1.73</td>
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</tbody>
</table>

*Note.* Increased scores indicate improvement. NAP = Nonoverlap of All Pairs. \( R^2 = \) Trend across baseline and intervention phases.

*Figure 1.* Bella’s scores across phases (increased scores indicate improvement).

Participant 2: Ethan

Table 3 presents Ethan’s results, including the means, standard deviations, trend, and NAP effect size for each subscale. All means increased from the baseline phase to the intervention phase and then increased again during the follow-up phase. Trend analysis revealed upward trends for all subscales with large effect sizes for Self-Regulation/Responsibility and Empathy and a medium effect size for Social Competence.
Competence. There was moderate variability between phases for Self-Regulation/Responsibility and Social Competence and low variability for Empathy. The NAP effect sizes for all subscales indicated a medium treatment effect. Figure 2 graphically portrays the treatment effect across phases.

Table 3

Ethan’s Results Across Phases

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Follow-Up</th>
<th>( R^2 )</th>
<th>NAP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( M )</td>
<td>( SD )</td>
<td>( M )</td>
<td>( SD )</td>
<td>( M )</td>
</tr>
<tr>
<td>Self-Regulation/Responsibility (SR/R)</td>
<td>23.50</td>
<td>1.52</td>
<td>26.25</td>
<td>1.91</td>
<td>27.00</td>
</tr>
<tr>
<td>Social Competence (SC)</td>
<td>25.50</td>
<td>3.08</td>
<td>27.88</td>
<td>1.64</td>
<td>28.33</td>
</tr>
<tr>
<td>Empathy (E)</td>
<td>19.33</td>
<td>2.16</td>
<td>22.13</td>
<td>2.75</td>
<td>25.67</td>
</tr>
</tbody>
</table>

Note. Increased scores indicate improvement. NAP = Nonoverlap of All Pairs. \( R^2 \) = Trend across baseline and intervention phases.

Figure 2. Ethan’s scores across phases (increased scores indicate improvement).
Participant 3: Rachel

Table 4 presents Rachel’s results, including the means, standard deviations, trend, and NAP effect size for each subscale. All means continually increased across phases with the exception of Self-Regulation/Responsibility, which slightly decreased from the baseline to intervention phases and then increased in the follow-up phase. Trend analysis revealed a slight downward trend for Self-Regulation/Responsibility and upward trends for Social Competence and Empathy with medium and large effect sizes, respectively. There was low variability for Self-Regulation/Responsibility, high variability for Social Competence and moderate variability for Empathy between phases. Additionally, NAP effect sizes indicated a weak treatment effect for Self-Regulation/Responsibility and Social Competence and a medium treatment effect for Empathy. Figure 3 graphically displays the treatment effect across phases.

Table 4

Rachel’s Results Across Phases

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Follow-Up</th>
<th>R²</th>
<th>NAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Regulation/Responsibility (SR/R)</td>
<td>31.43</td>
<td>31.33</td>
<td>33.00</td>
<td>.03</td>
<td>.45</td>
</tr>
<tr>
<td>Social Competence (SC)</td>
<td>24.86</td>
<td>25.83</td>
<td>33.33</td>
<td>.13</td>
<td>.48</td>
</tr>
<tr>
<td>Empathy (E)</td>
<td>24.00</td>
<td>28.00</td>
<td>32.67</td>
<td>.25</td>
<td>.74</td>
</tr>
</tbody>
</table>

Note. Increased scores indicate improvement. NAP = Nonoverlap of All Pairs. $R^2 =$ Trend across baseline and intervention phases.
Figure 3. Rachel’s scores across phases (increased scores indicate improvement).

Participant 4: Ian

Table 5 presents Ian’s results, including the means, standard deviations, trend and NAP effect size for each subscale. Each subscale displayed a different pattern across phases. For Self-Regulation/Responsibility, the mean decreased from the baseline to intervention phases and then increased in the follow-up phase. The opposite pattern occurred for Social Competence with an increase from baseline to intervention phases followed by a decrease in the follow-up phase. There was no change in Empathy across phases. There was high variability between phases for Self-Regulation/Responsibility, moderate variability for Social Competence, and no variability for Empathy. NAP effect sizes indicated a weak treatment effect for all subscales. Figure 4 displays a graphical image of the treatment effect across phases.
Table 5

*Ian’s Results Across Phases*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Baseline</th>
<th></th>
<th>Intervention</th>
<th></th>
<th>Follow-Up</th>
<th></th>
<th>R²</th>
<th>NAP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Regulation/Responsibility (SR/R)</td>
<td>34.00</td>
<td>2.65</td>
<td>31.77</td>
<td>0.60</td>
<td>32.00</td>
<td>0.00</td>
<td>.38</td>
<td>.14</td>
</tr>
<tr>
<td>Social Competence (SC)</td>
<td>27.67</td>
<td>1.15</td>
<td>28.85</td>
<td>3.13</td>
<td>26.00</td>
<td>1.73</td>
<td>.03</td>
<td>.54</td>
</tr>
<tr>
<td>Empathy (E)</td>
<td>13.00</td>
<td>0.00</td>
<td>13.00</td>
<td>0.00</td>
<td>13.00</td>
<td>0.00</td>
<td>NT</td>
<td>.50</td>
</tr>
</tbody>
</table>

*Note.* Increased scores indicate improvement. NAP = Nonoverlap of All Pairs. R² = Trend across baseline and intervention phases. NA = No trend.

![Figure 4. Ian’s scores across phases (increased scores indicate improvement).](image)

**Participant 5: Hunter**

Table 6 presents Hunter’s results, including the means, standard deviations, and NAP effect size for each subscale. For Empathy, the mean decreased from the baseline phase to the intervention phase and then slightly increased in the follow-up phase. Self-Regulation continually decreased throughout all phases and Social Competence continually increased throughout the entire study. There was moderate variability between phases for Self-Regulation/Responsibility and Social Competence, and high
variability for Empathy. Additionally, NAP effect sizes indicated a weak treatment effect for all subscales. Figure 5 graphically displays the treatment effect across phases.

Table 6

Hunter’s Results Across Phases

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Self-Regulation/Responsibility (SR/R)</td>
<td>20.25</td>
<td>1.50</td>
<td>19.27</td>
</tr>
<tr>
<td>Social Competence (SC)</td>
<td>19.75</td>
<td>2.22</td>
<td>21.18</td>
</tr>
<tr>
<td>Empathy (E)</td>
<td>29.75</td>
<td>4.79</td>
<td>25.91</td>
</tr>
</tbody>
</table>

*Note:* Increased scores indicate improvement. NAP = Nonoverlap of All Pairs. \( R^2 \) = Trend across baseline and intervention phases.

Figure 5. Hunter’s scores across phases (increased scores indicate improvement).

Summary of Results

Table 7 provides a summary of results for all participants in this study. Three participants demonstrated results that indicated play therapy was a beneficial intervention and two participants had mixed results. The two participants with mixed
results demonstrated higher means for Social Competence during intervention but weak effect sizes overall. Mean scores for Social Competence improved for all participants during the intervention phase. Although slopes were negative on some subscales, effect sizes indicated there was some positive effect. The NAP calculation involved individual pairings between each data point in the baseline phase and each data point in the intervention phase. This results in a score that represents the probability that a data point in the intervention phase will exceed a data point in the baseline phase (Parker & Vannest, 2009).

Table 7

Summary of All Participants’ Results

<table>
<thead>
<tr>
<th>Participant</th>
<th>SR/R</th>
<th>SC</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bella</td>
<td>Y</td>
<td>Y</td>
<td>.83</td>
</tr>
<tr>
<td>Ethan</td>
<td>Y</td>
<td>Y</td>
<td>.88</td>
</tr>
<tr>
<td>Rachel</td>
<td>N</td>
<td>Y</td>
<td>.45</td>
</tr>
<tr>
<td>Ian</td>
<td>N</td>
<td>N</td>
<td>.14</td>
</tr>
<tr>
<td>Hunter</td>
<td>N</td>
<td>N</td>
<td>.30</td>
</tr>
</tbody>
</table>

Note. SR/R = Self-Regulation/Responsibility; SC = Social Competence; E = Empathy; NAP = nonoverlap of all pairs; Y = mean was higher than mean of baseline phase, N = mean was lower than mean of baseline phase.

Discussion

The purpose of this study was to explore the impact of CCPT on the social competence, empathy, and self-regulation of children diagnosed with ASD. Social competence, empathy, and self-regulation were measured using the SEARS-P (Merrell, 2011). Results indicated that play therapy was a beneficial intervention for three participants, with mean gains on all three subscales, Self-Regulation/Responsibility, Social Competence, and Empathy. The other two participants responded to the
intervention with mixed results. Social competence appeared most positively impacted by play therapy, as all participants demonstrated improvement during intervention. Among the three participants for which intervention demonstrated effectiveness, the largest gains were made in the area of empathy.

Impact on Social Competence, Empathy, and Self-Regulation

Social competence. Individuals with ASD have persistent deficits in social communication and social interaction (APA, 2013), making it difficult to attain social competence. As a result, children with ASD can often feel isolated from their peers and experience feelings of loneliness (Locke, Ishijima, Kasari, & London, 2010). In CCPT, children are able to communicate in ways they are most comfortable, including nonverbal communication. This is particularly helpful for children with ASD, as they often struggle with communicating in ways that are understood by others. Through this safety and freedom of expression, children can engage and communicate with the play therapist in their own unique ways and eventually broaden that outward to their home and school environments. With the relationship as the central aspect of the intervention (Landreth, 2012; Ray, 2011), children involved in CCPT have the opportunity to experience the play therapist’s attempt to relate to them and understand their unique perspectives of the world. In this study, play therapy was beneficial in improving social competence for all participants, as the means for all participants increased during the intervention phase. This is likely a result of the relational focus of the treatment and each opportunity to feel accepted and understood within this relationship. Although all participants demonstrated improvement in social competence during the play therapy intervention, the effect sizes were mostly weak due to high variability in scores.
Empathy. Children with ASD have difficulty empathizing and understanding the situations of others (Baron-Cohen & Wheelwright, 2004; Blacher, Kraemer, & Schalow, 2003; Gillberg, 1992; Wing, 1981), creating difficulty in their social interactions and relationships. Within CCPT, children have the opportunity to experience empathy within the play therapy relationship as well as grow in their ability to empathize with others. Part of the role of the play therapist is to be aware of the child's feelings and then facilitate self-awareness and self-understanding within the child (Axline, 1947). The development of awareness is an important part of empathy development and can theoretically be developed through participation in CCPT. In this study, play therapy was successful in increasing empathy for three participants, according to the effect sizes for the Empathy subscale. For the participant with the lowest effect size, Hunter, his mother reported that he made great improvements in all areas, including empathy, but this was not reflected in his data. The other participant with a low effect size, Ian, was likely affected by a behavioral change that occurred about halfway through the study that was possibly related to sensory concerns.

Self-regulation. Emotional and behavioral self-regulation is a difficult task for children with ASD for many reasons, including overstimulation and trouble regulating or shifting their attention (Bolick, 2004). Multiple research studies have confirmed that children with ASD have deficits in their abilities to self-regulate (Jahromi, Bryce, & Swanson, 2013; Konstantareas & Stewart, 2006; Samson, Huber, & Gross, 2012). CCPT is theoretically aligned with the concept of self-regulation, contributing to the effectiveness of the intervention. Once a child feels safe within the play therapy relationship, they have the opportunity to develop an increased ability to regulate their
emotions and behaviors. Ray et al. (2013) concluded that specific CCPT responses of returning responsibility and limit-setting contribute to the development of self-regulation. In this study, play therapy was beneficial in improving self-regulation for two participants, as their means increased during the intervention phase. Two of these participants had effect sizes in the moderate range and their effect sizes were the highest of all effect sizes in the study. Hence, for those participants that experienced improvement as a result of the intervention, it was highly successful. One of the participants, Rachel, had similar means between baseline and intervention phases and then demonstrated an increased mean in the follow-up phase. While scores did not reflect an improvement for two of the participants, one of those participant's mother reported vast improvement in the participant's ability to self-regulate.

Level of Functioning

Depending on where an individual falls on the autism spectrum, one can demonstrate various levels of impairment in the areas of social communication as well as restricted and repetitive behaviors, interests, or activities (APA, 2013). In play therapy, these abilities affect how a child communicates and builds a relationship with the play therapist. Play therapy meets children at their level of development and allows them to express themselves in ways that are most comfortable (Landreth, 2012). In this study, I noticed differences among participants based on their level of functioning. The participants with the lowest levels of functioning and no verbal communication appeared slower to warm up, engaging in independent play at the start of play therapy, not making much effort to engage with me. As the sessions progressed, they slowly made more eye contact and approached me more frequently, showing a desire to engage and
be in relational contact with me. The highest functioning participant in this study
demonstrated progress at the fastest pace upon the start of the play therapy
intervention phase.

When examining the data in the follow-up phases, it was apparent that the
participants could have possibly benefited from extending play therapy treatment for a
longer amount of time. Three participants demonstrated a decrease in scores, indicating
regression, in at least one construct in the follow-up phase. For the two participants with
the fewest number of weeks in the treatment phase, scores displayed an improvement
at the end of the treatment phase, signifying that play therapy started to have a greater
impact. An extended length of treatment would have allowed for the possibility of
greater improvement and/or stabilization of data. The three participants with the longest
treatment phases were the lowest functioning individuals within the study, two being
nonverbal. Due to their level of functioning, they may have needed more play therapy
sessions to build a therapeutic relationship and demonstrate improvement. Hull (2011)
identified that children with ASD have difficulty building relationships with others and
trusting unfamiliar people; therefore taking longer to building a therapeutic alliance in
the beginning of play therapy.

Therapeutic Relationship

CCPT is a relationship-based intervention. In CCPT, the relationship between the
child and the play therapist is essential for change and serves as the primary agent of
change (Landreth, 2012; Ray, 2011). As the play therapist displays acceptance of the
child within the relationship, the child can then begin valuing and accepting oneself. Of
particular importance for children with ASD is that the play therapist works to
understand and experience the child’s world. The therapeutic alliance is even more important when working with children with ASD given the barriers that have to be overcome (Hull, 2011).

In this study, I was able to form therapeutic relationships that were meaningful during the play therapy process. Each relationship was unique based upon the characteristics and communication of each participant and grew throughout the therapeutic process. Most participants demonstrated connection through nonverbal interactions, such as touching my face and looking into my eyes while their faces were close to mine. Due to the participants’ limited abilities to verbally communicate, most communicated through these types of actions, indicating a desire for relationship.

Parent Receptivity

Parents of the participants in this study were open and receptive to the idea of play therapy. Most parents had little understanding about play therapy prior to participation in the study but were open to learning about it and allowing their child to participate. One parent whose profession involved working with children was knowledgeable about play therapy, believed it to be a helpful intervention for children in general, and reported observing improvements in her child. Three parents specifically requested that their children continue play therapy after completion of the study due to their perceptions that play therapy was beneficial for their children. Parental perception of treatment is important, as parents are “more influenced by what they perceive as meaningful change in their child’s functioning rather than empirical evidence that is presented in the literature” (Bowker, D’Angelo, Hicks, & Wells, 2011, p. 1381).

Additional Services
Children with ASD are often involved in multiple treatments to address a variety of concerns, including speech therapy, occupational therapy, ABA, and physical therapy. All participants in this study were involved in at least one of the aforementioned services before entering into this study. Unlike behavioral interventions that are typically task-based, developmental interventions are choice-based and child-directed (Mastrangelo, 2009). The National Autism Center (NAC; 2009) found that relationally based interventions are developmentally appropriate for children with ASD and demonstrated favorable outcomes for improved emotional regulation.

Similar to the developmental interventions identified by the NAC (2009), CCPT is also developmentally appropriate and child-directed. In CCPT, the focus is on the relationship between the child and the play therapist, as it serves as the primary agent of change (Landreth, 2012; Ray, 2011). The goal of CCPT regarding the participants in the current study was to help them improve their abilities to connect and relate to others, not to change their problematic behaviors. Through the therapeutic relationship within play therapy, children can develop feelings of security and control, communicate and explore their innermost feelings, and increase their self-awareness. More specifically, children have the opportunity to understand themselves and make changes from an intrinsic need, which is different from the concept of external reinforcement in most behavioral interventions.

Limitations

As with all studies, there are limitations to this study that readers should consider. The first limitation concerned the design of this study. Due to the single-case design and data analysis of individual participants, this study has minimal external
validity, limiting the ability to generalize the findings. Another limitation involved the number of play therapy sessions for the participants. Two of the participants had longer baseline phases due to variability in scores and had shorter intervention phases due to time limitations of the study. One participant in particular had scores indicating improvement at the end of the intervention phase and may have made more progress if she would have remained in play therapy for more sessions. Longer baseline and intervention phases of this study would have allowed for more exploration of variability that would typically be expected with this population.

The instrument used in this study served as another limitation. Although the psychometric properties of the instrument were strong and the SEARS-P was recommended for use with children with ASD, it may not have been a good fit for lower functioning individuals with ASD. Many of the questions were difficult for parents to answer about children with limited or no verbal ability. Additionally, the instrument may not have been sensitive enough to detect small changes that may have occurred within children with a lower level of functioning. For data analysis in this study, I used the NAP statistic. Parker and Vannest (2012) provided extremely conservative interpretation results for this statistic, which may have suppressed the positive interpretation of the data. Lastly, the primary researcher, as opposed to an objective review team, made determinations regarding variability and data stabilization in order to decide when to move on to the next phase.

Clinical Implications

As a result of this study, clinical implications are indicated for conducting play therapy for children with ASD. First, it appears that play therapy can be a beneficial
intervention for increasing social competence, empathy, and self-regulation. Another clinical implication of this study is the need for children with ASD to participate in play therapy for a longer period of time to allow more time to develop the therapeutic relationship. Due to their difficulties with communication and social interaction, they often take longer to develop a therapeutic alliance with the play therapist (Hull, 2011). With the therapeutic relationship being of primary importance in CCPT (Landreth, 2012; Ray, 2011), play therapists must be patient and consider the needs of the children, as they take longer to engage in relationship. Regarding the difference in levels of functioning among participants, it appears that play therapy may be more effective or show effectiveness more quickly for children with higher levels of functioning. The higher functioning participants in this study were able to communicate more easily and engage with the play therapist more quickly. They also demonstrated a faster and more marked increase in scores on the SEARS-P compared to the lower functioning participants.

Implications for Future Research

Due to the limited number of studies examining the effects of play therapy for children with ASD, this study serves as a foundation for future studies in this area. Prospective research can further examine the effectiveness of play therapy in a variety of ways. First, researchers may consider focusing on higher functioning children with ASD. For studies with lower functioning individuals, researchers should use an assessment that is better able to detect small changes. As the research foundation grows, studies can be conducted with a larger number of participants to generate
findings that can be generalized to more of the ASD population. Future studies may also include more play therapy sessions to assess the impact of longer-term play therapy.

Because researchers report that children with ASD have increased comorbid symptoms of anxiety and mood disorders (Barnhill, 2001; Bellini, 2006; Ghaziuddin, 2002; Stewart, Barnard, Pearson, Hasan, & O'Brien, 2006), future researchers may consider measuring the effect that play therapy has on symptoms related to these types of mental health diagnoses. Along with examining play therapy for children with ASD by measuring progress and outcome, future researchers may also consider analyzing the interactions between the client and play therapist. The therapeutic interactions may increase understanding of the process of play therapy with this population.

Conclusion

The prevalence rate of children with ASD is continually on the rise with a current estimate of 1 in 68 children (CDC, 2014). Children with this diagnosis struggle with social communication and interactions along with restricted and stereotyped behavior (APA, 2013) and can result in struggles with peer relationships (Konig & Magill-Evans, 2001; Orsmond et al., 2004), lowered levels of empathy (Baron-Cohen & Wheelwright, 2004), and difficulty with self-regulation (Volkmar et al., 2005). The purpose of this study was to examine the effectiveness of CCPT with children with ASD, specifically examining social competence, empathy, and self-regulation. Results provide support for play therapy as an intervention that can help children develop improvements in these areas. Although results were not consistent for all participants, three demonstrated improvement in all areas measured. Most parents reported observed improvement in
their child, with the majority commenting on improved self-regulation and interaction with others.

References


APPENDIX A

EXTENDED REVIEW OF THE LITERATURE
In 1943, Kanner (1943) introduced the term early infantile autism in his paper titled “Autistic Disturbances of Affective Contact.” In this paper, Kanner wrote detailed descriptions of 11 children who appeared unique compared to previous reports, including their behaviors and family history. He identified one of the core concerns of infantile autism was the inability of these children to relate to others in a normal way. He also identified that many of these children had speech delays or spoke in peculiar ways, such as repeating phrases. Kanner noticed that these children had a strong desire for sameness, having little tolerance for change. Once they experienced something, they needed to experience it the same way each time. He suspected that this might be related to the children’s remarkable rote memory.

While Kanner researched and wrote about autism in the United States, Hans Asperger conducted similar research in Austria. In 1944, one year after Kanner (1943) published *Autistic Disturbances of Affective Contact*, Hans Asperger (1941/1944) wrote his paper, “'Autistic Psychopathy’ in Childhood.” In this paper, Asperger described four boys who had relatively normal intellectual functioning and speech but struggled with social communication and exhibited behaviors similar to what Kanner described. Due to World War II, Asperger’s paper was not translated into English until 1991. Similar to Kanner, Asperger used the terms autism and autistic psychopathy to describe children he observed. Although Kanner's 1943 paper was published before Asperger's 1944 paper, Asperger talked about children with autistic psychopathy for many years prior to the publication of that paper (Feinstein, 2010). In 1938, Asperger (1938) gave a lecture at the Vienna University Hospital that was then published under the title “Das psychisch abnorme kind” in the Vienna Weekly that same year. Feinstein (2010) reported that
Asperger used the term “autistic” as early as 1934 in letters to colleagues during his visits to Leipzig and Potsdam in Germany. Kanner wrote that he started observing these children in 1938 while Asperger was working with these children in his clinic as early as 1930 (Feinstein, 2010).

Kanner (1943) identified that many children with autism were previously diagnosed with schizophrenia. He differentiated these disorders by describing a person with schizophrenia to have a history of essentially average development and experience a change in behavior, whereas the children in his study had “shown their extreme aloneness from the very beginning of life, not responding to anything that comes to them from the outside world” (p. 248). Kanner and Eisenberg (1957) differentiated children with early infantile autism from those with childhood schizophrenia by describing a detachment present in children with autism during the child’s first year of life. They also differentiated this syndrome from oligophrenia, or mental retardation, by the children’s potential for good intellectual abilities. After follow-up studies, Kanner and Eisenberg identified the children’s inability to relate to others in an ordinary fashion as the primary pathology. Kanner and Eisenberg described five characteristics that were unique to children with early infantile autism. The first difference was their extreme detachment and lack of engagement or interest in others, which was different from other children with behavioral concerns. Second, they noted these children lacked the purposeful use of language for communicating with others. In some cases, children’s speech never developed while in other cases children developed language and used it in peculiar ways, such as repeating words or phrases. Third, these children had an obsessive desire for things to remain the same and a lack of spontaneity. A fourth
characteristic of these children was a “fascination for objects which were handled with skill in fine motor movements” (p. 56). Lastly, Kanner and Eisenberg noted that these children had good cognitive potential.

**Diagnosis of Autism Spectrum Disorder**

Although autistic-like characteristics can be seen in children throughout history, there was no official diagnosis for it until 1980, when the American Psychiatric Association (APA; 1980) published the third edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III)*. The *DSM-III* (1980) was revolutionary because it included a new class of childhood onset disorders termed pervasive developmental disorders (PDD) where infantile autism was included for the first time. Other disorders included in this category were residual infantile autism, childhood onset pervasive developmental disorder (COPDD), and residual COPDD. This publication was a noteworthy advance for the field of autism, as it formally recognized autism as different from childhood schizophrenia. Residual infantile autism was a term used to describe children that previously but no longer met criteria for infantile autism. COPDD was included to account for the rare children who developed symptoms of autism after 30 months of age. Atypical PDD was a term used for children who did not meet criteria for any specific diagnosis within the PDD category but had difficulties most associated with this category.

In 1987, APA published the *DSM-III-R* (APA, 1987), changing terminology and criteria for autism. The updates included attending to age and development in relation to an individual’s symptoms. Infantile autism was replaced with the term autistic disorder, allowing for the diagnosis of autism in children who developed it at a later age. COPDD
was dropped and atypical PDD was changed to PDD-not otherwise specified (PDD-NOS). Autistic disorder included 16 criteria across 3 different domains: qualitative impairment in reciprocal social interaction, qualitative impairment in verbal and nonverbal communication and in imagination, and restricted repertoire of activities and interests. The diagnosis required that a child meet 8 of the 16 criteria.

Extensive research and field trials contributed to changes in the DSM-IV (APA, 1994) and DSM-IV-TR (APA, 2000). The definition of autistic disorder changed to once again include an age of onset, prior to 3 years old. PDD was a category that consisted of autistic disorder, Asperger’s disorder, pervasive developmental disorder-not otherwise specified (PDD-NOS), Rett’s disorder, and childhood disintegrative disorder (APA, 2000). Professionals in the field increasingly but inconsistently used the term autism spectrum disorder (ASD), as it was not yet a formal diagnosis.

APA (2013) recently published an updated edition of the diagnostic manual, DSM-5, where the aforementioned autistic related neurodevelopment disorders were formally grouped into a single category, ASD. For this diagnosis, there are now two areas of impairment. The first is impairment is social communication and social interaction, which involves symptoms such as social-emotional reciprocity, nonverbal communicative behaviors, and development of relationships. The second area is restricted, repetitive behaviors, interests, or activities. This includes symptoms such as repetitive motor movements, inflexibility with routine, and restricted areas of interest. There is no longer an emphasis on language delay because it is not specific to ASD and can be seen in children with and without ASD (Lauritsen, 2013). Additionally, there is no longer a set age criteria. According to the diagnostic criteria, symptoms must be present
in the “early developmental period” (APA, 2013, p. 50), but this is not specifically defined and exceptions can be made due to lack of symptom recognition until later in life. The specific diagnostic criteria for ASD are outlined in Figure A.1.

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history) examples are illustrative, not exhaustive; see text):

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.

2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.

3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social context; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Specify current severity:
Severity is based on social communication impairments and restricted, repetitive patterns of behavior (see Table 2).

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive; see text):

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).

2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).

3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).

4. Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

Specify current severity:
Severity is based on social communication impairments and restricted, repetitive patterns of behavior (see Table 2 [herein, Table A.2]).
C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).
D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.
E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Note: Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger’s disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder.

Specify if:
With or without accompanying intellectual impairment
With or without accompanying language impairment
Associated with a known medical or genetic condition or environmental factor (Coding note: Use additional code to identify the associated medical or genetic condition.)
Associated with another neurodevelopmental, mental, or behavioral disorder (Coding note: Use additional code[s] to identify the associated neurodevelopmental, mental, or behavioral disorder[s].)
With catatonia (refer to the criteria for catatonia associated with another mental disorder, pp. 119-120, for definition) (Coding note: Use additional code 293.89 [F06.1] catatonia associated with autism spectrum disorder to indicate the presence of the comorbid catatonia.)

Figure A.1. DSM-5 criteria for autism spectrum disorder (299.00). Reproduced from APA (2013), p.50-51.

As implied by the word spectrum, the characteristics of this disorder can have a wide range. To help give a more detailed description of symptoms, diagnostic procedures now require a severity recording. APA (2013) developed three levels of severity for ASD. Level 1 is the least severe, requiring support, and Level 3 is the most severe, requiring very substantial support. A more detailed description of the severity levels is outlined in Table A.1.
Table A.1

*DSM-5 Severity Levels for Autism Spectrum Disorder*

<table>
<thead>
<tr>
<th>Severity Level</th>
<th>Social Communication</th>
<th>Restricted, Repetitive Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 3</td>
<td>Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs only and responds to only very direct social approaches.</td>
<td>Inflexibility of behavior, extreme, difficulty coping with change, or other restricted/repetitive behaviors markedly interfere with functioning in all spheres. Great distress/difficulty changing focus or action.</td>
</tr>
<tr>
<td>Level 2</td>
<td>Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced or abnormal responses to social overtures from others. For example, a person who speaks simple sentences whose interaction is limited to narrow special interests, and who has markedly odd nonverbal communication.</td>
<td>Inflexibility of behavior, difficulty coping with change, or other restricted/repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action.</td>
</tr>
<tr>
<td>Level 1</td>
<td>Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions, and clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions. For example, a person who is able to speak in full sentences and engages in communication but whose to-and-fro conversation with others fails, and who attempts to make friends are odd and typically unsuccessful.</td>
<td>Inflexibility of behavior causes interference with functioning in one or more contexts. Difficulty switching between activities. Problems of organization and planning hamper independence.</td>
</tr>
</tbody>
</table>

Although ASD has been differentiated from mental retardation (MR), it is frequently associated with the diagnosis. According to requirements of the DSM-5 (APA, 2013), the individual providing the diagnosis of ASD must specify if one has ASD with or without intellectual impairment. The need for this specification indicates that ASD has associated intellectual impairments in some number of individuals. Previous versions of the DSM did not include intellectual functioning as part of the diagnostic criteria but many researchers and clinicians observed a relationship between the two in some children.

Research regarding prevalence rates of mental retardation for children with ASD has been quite varied. Past research revealed a prevalence rate of approximately 70% to 80% for mental retardation with this population (Fombonne, 2003; National Research Council, 2001). Fombonne (2003) conducted a systematic review and found 20 studies that assessed intellectual functioning of individuals with ASD. Although there was a lack of consistency among assessments in the various studies, he concluded that generally 30% of individuals with ASD had no intellectual impairment, 30% had mild to moderate intellectual impairment, and 40% had severe intellectual impairment. When considering the broad spectrum of ASD, Chakrabarti and Fombonne (2001) found approximately 30% of children with PDD had some degree of MR. The variability of these results may be related to the severity level of the population in the studies. For example, those with a previous diagnosis of Asperger’s Disorder or PDD-NOS may have had a higher level of cognitive functioning compared to those with classic autism. Additionally, Bryson, Bradley, Thompson, and Wainwright (2008) found that 28% of adolescents with intellectual disabilities also qualified for a diagnosis of autism.
Exkorn (2005) stated that it is difficult to accurately measure the intelligence of children with ASD. He explained that intelligence tests require children to “interact, imitate, and use both receptive and expressive language skills, such as following instructions or verbally responding to answers – all skills that may be missing or delayed in children with ASD” (Exkorn, 2005, p. 33). Edelson (2006) questioned claims about the frequent association of autism and mental retardation, stating that there had not been a systematic examination of these claims. She conducted a study to look more closely at the empirical evidence for these claims, using a sample of 215 articles published from 1943 to 2003. As a result of her analysis, she found that 74% of the articles reporting a prevalence of MR in individuals with autism were nonempirical in nature and 26% came from empirical studies. Of the empirical studies found, researchers used developmental scales, adaptive scales, and other alternative measures of intelligence and reported an average prevalence of 75.28%. Edelson concluded that more empirical data is needed to better understand the true number of individuals with autism that also qualify for mental retardation.

Social and Emotional Abilities of Children with ASD

As identified in the diagnostic criteria, children with ASD struggle with social interactions, communication, and stereotyped behaviors. Although it can vary among individuals, social functioning is often the most severe type of impairment for individuals with ASD (Mash & Barkley, 2003). Struggles with social behaviors include social and emotional reciprocity, understanding nonverbal behaviors, and engaging with others in socially appropriate ways. These challenges can affect children’s mood and self-concept in a variety of ways. Children with ASD experience heightened anxiety (Bellini,
2004; Kim, Szatmari, Bryson, Streiner, & Wilson, 2000) and depression (Kim et al., 2000; Stewart, Barnard, Pearson, Hasan, & O'Brien, 2006). Attwood (2007) identified that children with ASD often struggle expressing their emotions, which can result in feelings of loneliness, sadness, and isolation, possibly prolonging symptoms of depression.

Due to the significant social-emotional challenges of children with ASD, it is likely that they are less successful in coping with difficult situations and challenges in life. Research indicates that children with higher social-emotional abilities are more resilient in life, coping better with challenges. The Center for Social Emotional Foundations for Early Learning (2011) described healthy social-emotional development as a process that involves multiple areas. First is the capacity for children to form secure relationships with adults and peers. Second is the experience, regulation, and expression of emotions in socially and culturally appropriate ways. Last is the exploration of and learning from the environment. Children with ASD struggle with many of these areas related to social and emotional development (Blacher, Kraemer, & Schalow, 2003; Losh & Capps, 2006; Wing, 1981).

Social Competence

Social development has always been a primary focus of understanding autism. When describing infantile autism, Kanner (1943) stated that “the outstanding, ‘pathognomonic,’ fundamental disorder is the children’s inability to relate themselves in the ordinary way to people and situations from the beginning of life” (p. 242). Even as descriptive characteristics and diagnostic criteria have changed, social dysfunction has remained a significant aspect of ASD (Volkmar, Paul, Klin, & Cohen, 2005). Children
with ASD struggle with a variety of social deficits that contribute to decreased levels of intimacy in social relationships.

Research has demonstrated that individuals with ASD struggle with peer relationships (Konig & Magill-Evans, 2001; Orsmond, Krauss, & Seltzer, 2004). Locke, Ishijima, Kasari, and London (2010) found individuals with ASD experienced an increased sense of loneliness and lesser friendship quality in comparison to typically developing peers. Contributing to fewer social relationships with peers, children with ASD are less likely to initiate contact with peers and are more likely to approach adults rather than children (Hauck, Fein, Waterhouse, & Feinstein, 1995; Jackson et al., 2003).

Children with ASD struggle relating to others in socially acceptable and appropriate ways. They often miss or misinterpret social cues and social behaviors of others, misunderstand the wants and needs of others, and inadequately express their own wants and needs. For example, a child may enter into a conversation without establishing relevance, leaving the listener feeling confused, or begin speaking before the other person has completed his or her sentence. It is also common that children with ASD say or do things without considering or understanding the feelings of others, misinterpreting or failing to read nonverbal cues (Bradshaw, Shic, & Chawarska; 2011; McGee, Feldman, & Chernin, 1991). Additionally, children with ASD often have restricted areas of interest and tend to talk frequently about those limited subjects even if others are disinterested, not recognizing their lack of interest or engagement in the conversation (Volkmar et al., 2005). Children with ASD also struggle with socially complex situations that require flexibility and spontaneous understanding.
ASD can often regurgitate and role-play social skills in a laboratory or clinic setting, but then have trouble applying those skills in real-world settings (Volkmar et al., 2005).

**Empathy**

Social competence and empathy are related, as “successful social interaction requires the ability to attribute mental states to others in order to explain and predict their behavior” (Sucksmith, Allison, Baron-Cohen, Chakrabarti, & Hoekstra, 2013). Reading nonverbal behavior and understanding others is a key component to successful relationships. Empathy “refers to the reactions of one individual to the observed experiences of another” (Davis, 1983). Individuals with ASD demonstrate impairment in their ability to empathize with others (Baron-Cohen & Wheelwright, 2004; Blacher et al., 2003; Gillberg, 1992; Wing, 1981). Baron-Cohen and Wheelwright (2004) conducted a study with higher functioning individuals with ASD, describing them as individuals with an ASD diagnosis and normal intelligence. Using the Empathy Quotient, they found that individuals with ASD had significantly lower levels of empathy compared to the control group. Research indicates that a child’s empathy is a significant factor in protecting against impairment (Ezpeleta, Granero de la Osa, & Guillamon, 2000).

Smith (2009) said that empathy is at the heart of human behavior, identifying two components: cognitive empathy and emotional empathy. Cognitive empathy is the process of understanding the perspective of others and emotional empathy is the emotional response to the affective state of others. Dziobek et al. (2008) used the Multifaceted Empathy Test (MET) and found impaired cognitive empathy in individuals with ASD. MET is a photo-based measure using pictures that show people in “emotionally charged situations” (Dziobek et al., 2008, p. 466). To assess cognitive
empathy, researchers in this study showed these pictures to participants and asked them to infer the mental state of people in the pictures. To assess emotional empathy, participants were asked to rate their emotional reactions after hearing the correct answer. Individuals with ASD scored significantly lower on the cognitive empathy task compared to the control group and demonstrated no significant differences in the emotional empathy task. Dziobek and colleagues (2008) concluded that individuals with ASD have difficulties with cognitive empathy but a “comparable amount of concern for the distress of others as do neurotypicals” (p. 470).

Loveland (2005) summarized that children with ASD may not respond to the distress of others due to a lack awareness of others’ emotional states or decreased ability to know how to respond empathically. Some researchers have connected empathy to Theory of Mind (ToM), which is one’s ability to understand the feelings, intentions, and motivations of others (Baron-Cohen & Wheelwright, 2004). Rogers, Dziobek, Hassenstab, Wolf, and Convit (2007) stated that ToM is roughly equivalent to cognitive empathy but not emotional empathy. Mindblindness is a term used to describe those without theory of mind, blind to others’ thoughts, beliefs, knowledge, desires, and intentions (Baron-Cohen, 1995). Baron-Cohen, Leslie, and Frith (1985) conducted the first study of mindblindness in children with ASD. Since then, over 30 experimental studies have demonstrated impairments in the ability of individuals with ASD to empathize with others, including deficits in the following areas: joint attention, use of mental state terms in language, production and comprehension of pretense, understanding that seeing leads to knowing, distinguishing mental from physical entities, making the appearance-reality distinction, understanding false belief,
understanding beliefs about beliefs, understanding complex emotions, and showing concern at another’s pain (Volkmar et al., 2005).

Self-Regulation

Self-regulation is the ability to modify one’s own emotional and behavioral reactions. Volkmar et al. (2005) identified three different reasons that children need emotional regulatory abilities. First, children need to be able to remain calm and regulated during potentially stressful circumstances. Second, children need to ask for help or respond to the support of others when faced with stressful situations that may be overstimulating or causing dysregulation. Third, children need to be able to utilize self-regulation and/or mutual regulation when needing to recuperate from overly stressful events.

Bolick (2004) described self-regulation as one’s ability to “establish and maintain the level of arousal/alertness, attention, activity, and affect (or emotion) that is appropriate for the situation at hand” (p. 25). She conceptualized self-regulation to involve “the four A’s” of arousal/alertness, attention, activity, and affect. Arousal refers to one’s level of alertness and is often associated with the fight or flight response (Bolick, 2004). For people with ASD, this response may be related to sensory overload. Temple Grandin, a high-functioning woman with ASD, gave specific accounts of how easily she becomes over-stimulated and distracted due to her atypical processing of auditory, visual, and tactile information (Grandin, 1995). Regarding attention, those with ASD often struggle regulating or shifting their attention, focusing on something other than the task at hand (Bolick, 2004). They often get caught up in the many thoughts, feelings, and sensations they experience and do not focus on what is going on at the moment.
Activity level is another area that children with ASD struggle to regulate, as they can appear extremely hyperactive in one moment and then lethargic in the next moment as they try to figure out what feels just right for them (Bolick, 2004). Regulating emotions in a socially and developmentally appropriate way is often difficult for those with ASD (Bolick, 2004; Volkmar et al., 2005).

Loveland (2005) identified that self-regulation encompasses regulation of social responding and emotional reactivity. She further explained that children with ASD struggle in both areas, contributing to their social-emotional struggles, increased vulnerability, and comorbid psychopathology. Research findings indicate deficits in self-regulation for individuals with ASD (Jahromi, Bryce, & Swanson, 2013; Konstantareas & Stewart, 2006; Samson, Huber, & Gross, 2012). Jahromi and colleagues (2013) used parent report and direct observation to assess self-regulation and engagement in a sample of children that included children with ASD. They found children with ASD had a significantly lower level of self-regulation compared to typically developing peers. They also found emotional regulation was positively related to emotional engagement, behavioral engagement, and prosocial behavior with peers. Konstantareas and Stewart (2006) examined affect regulation and temperament in children with ASD compared to children without ASD. In this study, the researchers created a frustrating situation for the participants by presenting an attractive toy and then quickly, in an unexpected and abrupt manner, asking the child to return the toy. The results showed children with ASD displayed less adaptive skills and greater variability in affect regulation compared to the control group.
The prevalence of ASD has steadily increased over time. In 1966, Lotter (1966) identified 4.5 per 10,000 people with ASD. By 2000, the rate of children diagnosed with ASD increased to 1 in 150 and is currently 1 in 68 (CDC, 2014). Although the exact cause of the increased prevalence of ASD is unknown, Brock, Jimerson, and Hansen (2006) identified the following factors as contributing to an increase in prevalence rates: changes in diagnostic criteria, heightened public awareness, increased willingness and ability to diagnose, availability of resources, and unidentified environmental factors.

As the number of individuals with ASD increases, so does the need to attend to the social and emotional struggles of this population. In addition to the central characteristics of the ASD diagnosis, many individuals with ASD experience emotional distress including symptoms of anxiety (Bellini, 2004; Kim et al., 2000) and depression (Kim et al., 2000; Stewart et al., 2006). Attwood (2007) reported approximately 65% of adolescents with Asperger’s syndrome also experience a mood disorder. Leyfer and colleagues (2006) conducted a study on the patterns of comorbidity among individuals with ASD and found that 71% of the participants had at least one psychiatric disorder in addition to ASD. They found that specific phobia was the most common psychiatric disorder among children with ASD with 44% meeting the diagnostic criteria. Obsessive Compulsive Disorder (OCD) was a close second at 37%. The third most common comorbid psychiatric disorder was Attention Deficit Hyperactivity Disorder (ADHD) at a rate of 31%. Ten percent of children with ASD had at least one episode of major depression. If left untreated, these numbers are likely to escalate. Therefore, it is
imperative to find effective interventions to treat the social and emotional concerns of children with ASD.

Table A.2

**NAC National Standards Report on Treatments for ASD**

<table>
<thead>
<tr>
<th>Established</th>
<th>Emerging</th>
<th>Unestablished</th>
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<tbody>
<tr>
<td>Antecedent Package</td>
<td>Augmentative and Alternative Communication Device</td>
<td>Academic Intervention</td>
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<tr>
<td>Behavioral Package</td>
<td>Cognitive Behavioral Intervention Package</td>
<td>Auditory Integration Training</td>
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<tr>
<td>Comprehensive Behavioral Treatment for Young Children</td>
<td>Developmental Relationship-Based Treatment</td>
<td>Facilitated Communication</td>
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<tr>
<td>Joint Attention Intervention Modeling</td>
<td>Exercise</td>
<td>Gluten- and Casein-Free Diet</td>
</tr>
<tr>
<td>Naturalistic Teaching Strategies</td>
<td>Exposure Package</td>
<td>Sensory Integrative Package</td>
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<tr>
<td>Peer Training Package</td>
<td>Imitation-based Interaction</td>
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<tr>
<td>Pivotal Response Treatment Schedules</td>
<td>Initiation Training</td>
<td></td>
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<tr>
<td>Self-Management</td>
<td>Language Training (Production)</td>
<td></td>
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<tr>
<td>Story-Based Intervention Package</td>
<td>Language Training (Production &amp; Understanding)</td>
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<td></td>
<td>Massage/Touch Therapy</td>
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<td>Multi-component Package</td>
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<td></td>
<td>Music Therapy</td>
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<td></td>
<td>Peer-mediated Instructional Arrangement</td>
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<td></td>
<td>Picture Exchange Communication System</td>
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<td>Reductive Package</td>
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<td>Scripting</td>
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<td>Sign Instruction</td>
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<td></td>
<td>Social Communication Intervention</td>
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<td>Social Skills Package</td>
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<td></td>
<td>Structure Teaching</td>
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<td></td>
<td>Technology-based Treatment</td>
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<td></td>
<td>Theory of Mind Training</td>
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</table>

Many different educational and behavioral treatments now exist for children with ASD and the quantity, quality, and consistency of research specific to children with ASD is quite varied (National Autism Center; NAC, 2009). The NAC conducted a systemic review of educational and behavioral treatments for individuals with ASD less than 22 years old. The review included 775 studies and classified each study into one of four
categories based on strength of evidence: Established, Emerging, Unestablished, and Ineffective/Harmful. Established treatments included sufficient evidence “available to confidently determine that a treatment produces beneficial treatment effects for individuals on the autism spectrum” (p. 32). Emerging treatments included one or more studies demonstrating effectiveness but lacked consistency from additional high quality studies in order to draw conclusions about the treatment. Unestablished treatments provided “little or no evidence available to make firm conclusions about treatment effectiveness” (p. 32). Ineffective/Harmful treatments had sufficient evidence to conclude that the treatment is ineffective or harmful. The NAC found no treatments for the Ineffective/Harmful category; the treatments in the other categories are listed in Table A.2.

The NAC (2009) identified some emerging treatments that focus on relational and expressive interventions, such as developmental relationship-based treatment and music therapy. The developmental relationship-based treatments category included seven studies described as involving “a combination of procedures that are based on developmental theory and emphasize the importance of building social relationships” (NAC, 2009, p. 60). Specific treatment programs within this category may include the following: the Denver Model, DIR (Developmental, Individual Differences, Relationship-based)/Floortime, Relationship Development Intervention, and Responsive Teaching. These programs can take place in a variety of settings and target communication, higher cognitive functions, interpersonal, motor skills, play, and self-regulation tasks (NAC, 2009). The NAC (2009) reported favorable outcomes for children ages 0 to 5 years old and for diagnostic classifications of Autistic Disorder and PDD-NOS.
Additionally, they found favorable outcomes in the areas of general symptoms and sensory or emotional regulation.

Treatments for individuals with ASD may also be categorized by the type of intervention. Ospina et al. (2008) conducted a systematic review that included 101 studies for the purpose of evaluating the effectiveness of behavioral and developmental interventions for ASD. Because a uniform organization system does not currently exist, they developed their own classification system to categorize interventions. Using previous literature and consultation with experts to inform the process, Ospina et al. (2008) created the following continuum of classifications from behavioral to developmental, respectively: Applied Behavior Analysis (ABA) interventions, communication-focused interventions, contemporary ABA, developmental approaches, environmental modification programs, integrative programs, sensory motor interventions, and social skills development interventions. Table A.3 includes the specific interventions included in the classifications.

Ospina and colleagues (2008) found that numerous treatment programs existed for ASD, some focusing on specific behaviors and others more comprehensive in nature. Within these treatments, it appeared that most children made progress, although it was variable and the sustainability of changes over time was unknown. Overall, they concluded there was a lack of agreement concerning the effect of interventions and, therefore, no clear answer about the most effective intervention for symptoms associated with ASD. They reported that research lacked scientific rigor, had limited replications, and variable outcomes. The authors encouraged practitioners to choose
treatments based on the unique needs of each child and family until more reliable evidence becomes available.

Table A.3

*Interventions Included in Systematic Review Conducted by Ospina et al. (2008)*

<table>
<thead>
<tr>
<th>Classification</th>
<th>Intervention</th>
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<tbody>
<tr>
<td>Applied Behavior Analysis (ABA)</td>
<td>Discrete Trial Training (DT)</td>
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<tr>
<td></td>
<td>UCLA/Lovaas</td>
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<tr>
<td>Communication-Focused Interventions</td>
<td>Computer-Assisted Instruction</td>
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<td></td>
<td>Picture Exchange Communication System (PECS)</td>
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<td></td>
<td>Sign Language Training</td>
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<tr>
<td>Contemporary ABA</td>
<td>Cognitive Behavioral Therapy (CBT)</td>
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<tr>
<td></td>
<td>Discrete Trial Training (DT; contemporary)</td>
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<td></td>
<td>Incidental Teaching (IT)</td>
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<td></td>
<td>Pivotal Response Training (PRT)</td>
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<tr>
<td>Developmental Approaches</td>
<td>Developmental Individual-difference Relationship-based Interventions (DIR)</td>
</tr>
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<td></td>
<td>Imitative Interaction</td>
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<tr>
<td></td>
<td>Incidental Teaching (IT)</td>
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<td>Milieu Therapy</td>
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<td>More Than Words</td>
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<td></td>
<td>Responsive Training</td>
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<td></td>
<td>Scottish Centre Program</td>
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<tr>
<td>Environmental Modification Programs</td>
<td>Work Placement</td>
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<td></td>
<td>Discrete Trial Training + floor time or Pivotal Response Training (PRT)</td>
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<td></td>
<td>Lego Therapy</td>
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<td></td>
<td>Social skills program</td>
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<td></td>
<td>Treatment and Education of Autistic related Communication-handicapped Children (TEACCH)</td>
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<tr>
<td>Sensory Motor Interventions</td>
<td>Auditory Integration Training (AIT)</td>
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<td></td>
<td>Exercise</td>
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<td></td>
<td>Restricted Environmental Stimulation therapy (REST)</td>
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<td></td>
<td>Sensory Integration (SI)</td>
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<tr>
<td>Social Skills Development Interventions</td>
<td>Social Stories</td>
</tr>
</tbody>
</table>

Different from behavioral interventions that are typically task-based and directed by the person providing the service, developmental interventions are child-directed and choice-based, allowing more flexibility within the session (Mastrangelo, 2009). As
identified by the NAC (2009) and Ospina et al. (2008), relationally based interventions emerged as evidence-based and developmentally appropriate for children with ASD. Other research also supports using a relationally based intervention to enhance the social and emotional functioning of children with ASD (Mahoney & Perales, 2003; Pajereya & Nopmaneejumruslers, 2011; Pajereya & Nopmaneejumruslers, 2012; Solomon, Necheles, Ferch, & Bruckman, 2007). Pajereya and Nopmaneejumruslers (2012) stated that the “prototypical social-pragmatic approach is represented by the Developmental, Individual-difference, Relationship-based (DIR) model of Greenspan and Wieder” (p. 1185). Greenspan and Wieder’s (2006) DIR model is based on the assumption that working with one’s emotions can influence the core developmental foundations for relating, thinking, and communicating. The model “examines the functional developmental capacities of children in the context of their unique biologically based processing profile and their family relationships and interactive patterns” (Wieder & Greenspan, 2003). Wieder & Greenspan, (2003) provided a detailed description of the model’s name that includes the foundational principles of the model. The “D” represents a child’s developmental capacities, including shared attention and engagement, back and forth interactions, problem solving, creating play ideas, and abstract thinking. The “I” represents the child’s individual differences in sensory motor processing and regulation. The “R” represents the necessary relationships and environment needed for healthy emotional, social, and cognitive development.

Greenspan and Wieder (1997) conducted a systematic review of 200 children they had seen for consultation or treatment over a period of eight years. They classified the outcomes into three groups: good to outstanding, medium, and ongoing difficulties.
The good to outstanding group consisted of 58% of the children in the study. They demonstrated improvements in many areas, including relational abilities, cognitive tasks, empathy, and social problem-solving. The medium group consisted of 25% and made slower but significant progress. Children in this group demonstrated improvements in problem-solving, became warm and loving, and communicated more effectively with others. The last group of children with ongoing difficulties consisted of 17% and included children with the most complicated neurological disorders, such as seizures. Many of these children made some improvements in communication using gestures or simple words and relational abilities, but also demonstrated problems in others areas. In a follow-up study, Wieder and Greenspan (2005) reported that children with ASD can make improvements to core deficits with the DIR model. They found that the children in this study developed high levels of empathy, excelled academically, and demonstrated appropriate coping skills.

**Strength-Based Approach**

Numerous strategies and programs exist regarding the treatment of autism, many of which are behavioral in nature and focus on specific deficits in children with ASD. Foxx (2008) explained that ABA is frequently used to decrease problem behaviors by using methods such as positive reinforcement, shaping, fading, prompting, and maintenance strategies. Additionally, many research studies focus on the lack of social skills of children with ASD, typically with the goal of building specific skills (Cotugno, 2009; Glass, Guli, & Semrud-Clikeman, 2000; Hauck et al., 1995; Stichter, O’Connor, Herzog, Lierheimer, & McGhee, 2012).
Although many of these interventions have demonstrated some degree of effectiveness in helping children with ASD learn specific skills, there appears to be a lack of focus on the strengths and capabilities of these children. While these children may be challenged in some areas, there are likely areas of strength that can be encouraged and used to help build success and resilience. Lanou, Hough, and Powell (2012) argued that just as it is important to address a child’s deficits, it is also important to build upon strengths and talents to validate and motivate them.

Seligman and Csikszentmihalyi (2000), advocates for positive psychology, argued that psychology has become increasingly focused on mental illness and should include an emphasis on the strengths and assets of individuals. Strength-based approaches align with the positive psychology movement with the goal of identifying positive social, emotional, and behavioral characteristics. Epstein and Sharma (1998) defined strength-based assessment as a “measurement of those emotional and behavioral competencies, skills, and characteristics that create a sense of personal accomplishment; contribute to a sense of personal accomplishment; contribute to satisfying relationship with family members, peers, and adults; enhance one’s ability to deal with adversity and stress; and promote one’s personal and academic development” (p. 3). Jimerson, Sharkey, Nyborg, and Furlong (2004) stated that strength-based assessments and interventions allow for a more balanced understanding of youth development by focusing on strength building instead of deficits.

Using Play Therapy as an Intervention for Children with ASD

Play as a Medium for Expression
Play is an innate drive that fuels human thought and action throughout the life cycle (Elkind, 2007). As one of our most basic forms as humans, play is crucial for healthy physical, intellectual, and social-emotional development. Brown (2009) described play as essential to growth, helping one learn and adapt to the world, promoting healthy brain development. Learning occurs as children use play to explore themselves and the world around them. Through play, children are able to communicate and express dimensions of their personality. Rubin (2012) described various developmental functions of play for children. Cognitively, children develop methods of understanding and problem solving as they manipulate, organize, and eventually use objects to represent people, place, and things in their real and imagined worlds. Socially, children learn how to connect with others as they play with ideas and objects. Emotionally, play gives children the opportunity to explore and express a variety of feelings. Regarding language and literacy, children have opportunities to develop narrative and storytelling skills as they play.

Landreth (2012) described play as spontaneous, enjoyable, and assimilating the world to match a child’s concepts. Many children with ASD, however, are seen engaging in repetitive, stereotypical, unimaginative, and isolated play. It is important to be aware that a child’s play can vary depending on severity within the autism spectrum. Research has indicated that children with ASD can engage in symbolic, pretend, and joint-imaginative play, given the appropriate conditions (Hobson, Lee, & Hobson, 2009; Libby, Powell, Messer, & Jordan, 1998). Rubin (2012) raised the question of whether play deficits in children with ASD represent a skill deficiency or a lack of interest, which
may be partly caused by the sensorimotor appeal of toys outweighing their symbolic and functional interest.

Play Therapy

Play therapy is a developmentally appropriate form of counseling children (Landreth, 2012). Children naturally communicate through play and activity; therefore, play therapy is for children what talk therapy is for adults. It is designed to meet the child at his or her level and allow for communication in ways that are most comfortable for that child. Through play, children can develop an understanding and awareness of their experiences, enabling the process of gaining insight, learning, problem solving, coping, and mastery (Ray, Bratton, Rhine, & Jones, 2001). Play is concrete, whereas words are abstract. Because young children do not yet understand abstract reasoning, play can allow them to use concrete objects to represent individual experiences within their environment. It gives them manageable ways to discover their inner worlds, allowing increased feelings of security and control. Through play, children communicate and explore their innermost feelings about themselves and their experiences. Concrete play gives a child the opportunity to explore and learn to cope by transforming unmanageable situations to manageable ones, bridging the gap between concrete experience and abstract thought.

Landreth (2012) defined play therapy as a dynamic interpersonal relationship between a child and therapist trained in play therapy, emphasizing the relationship as an essential element. With the development of this safe relationship, the child has the opportunity to fully express and explore one’s feelings, thoughts, experiences, and behaviors. “Play provides a developmentally responsive means for expressing thoughts
and feelings, exploring relationships, making sense of experiences, disclosing wishes, and developing coping strategies.” (Landreth, 2012, p. 12). For children, toys are words and play is their language. In play, children have the opportunity to make sense of their experiences and feel a sense of control of their world, which is vital to a child’s emotional development.

There are multiple approaches to counseling children and utilizing play therapy, including child-centered play therapy (CCPT; Landreth 2012; Ray 2011), Adlerian play therapy (Kottman, 2003), developmental play therapy (Brody, 1993), Gestalt play therapy (Oaklander, 1988), Jungian play therapy (Allan, 1997), cognitive-behavioral play therapy (Knell, 1993), and psychoanalytic play therapy (Bromfield, 1989). Each approach has a unique way of conceptualizing the needs of children, the play therapy process, and therapeutic goals. According to Ray (2011), the most popular forms of play therapy are child-centered, cognitive-behavioral, and Adlerian approaches.

Bratton, Ray, Rhine, & Jones, (2005) conducted a meta-analysis of 93 play therapy studies and found that play therapy was an effective treatment for children’s problems. Large effect sizes of .80 were found in those receiving play therapy versus non-treatment groups. As part of the study, the researchers categorized treatments according to theoretical models and found that humanistic interventions demonstrated a substantially larger effect size (ES = 0.92) compared to nonhumanistic treatments (ES = 0.71). These findings support CCPT as an effective intervention for children with emotional and behavioral difficulties. Bratton and Ray (2000) conducted a meta-analysis and found that play therapy is an effective method of treatment in the specific areas of self-concept, behavioral change, cognitive ability, social skills, and anxiety. Additionally,
many studies demonstrated the effectiveness of play therapy for treating anxiety (Baggerly, 2004; Jones & Landreth, 2002; Post, 1999; Shen, 2002), depression (Baggerly, 2004), internalizing behavior problems (Garza & Bratton, 2005; Packman & Bratton, 2003), externalizing behavioral problems (Garza & Bratton, 2005; Kot, Landreth, & Giordano, 1998), social problems (Fall, Navelski, & Welch, 2002), academic achievement (Blanco & Ray, 2011), aggressive behavior (Schumann, 2010), and attention difficulties (Ray, Schottelkorb, and Tsai, 2007).

Child-Centered Play Therapy

CCPT is based on the work of Carl Rogers, who developed person-centered theory. This approach views humans as positive and resourceful, capable of self-direction to achieve effective and productive lives. The belief is that people are constantly changing and working towards increased awareness, always involved in the process of self-actualizing. Rogers (1957) felt this self-directed growth could happen with the use of a therapeutic relationship and identified the following six conditions as necessary for therapeutic change: (a) two persons, therapist and client, are in psychological contact; (b) the client is in a state of incongruence, feeling vulnerable or anxious; (c) the therapist is congruent or integrated in the relationship; (d) the therapist experiences unconditional positive regard for the client; (e) the therapist experiences an empathic understanding of the client’s internal frame of reference and attempts to communicate this experience to the client; and (f) the client receives the therapist’s communication of empathic understanding and unconditional positive regard.

Virginia Axline (1947) was the first person to specifically apply the concepts of person-centered therapy to working with children. She referred to this approach as
nondirective play therapy and identified eight basic principles that guide the play therapist in conducting non-directive play therapy with children:

1. The play therapist develops a warm and caring relationship, establishing good rapport with the child.
2. The play therapist experiences unconditional acceptance of the child.
3. The play therapist creates a feeling of permissiveness in the relationship so the child can feel safe and open to explore and express oneself completely.
4. The play therapist is aware of the child’s feelings and reflects those feelings in a way that helps the child gain awareness and self-understanding.
5. The play therapist respects the child’s ability to solve personal problems if given the opportunity and believes it is the child’s responsibility to make choices to institute change.
6. The play therapist follows the child, allowing the child to direction his or her own behavior or conversation.
7. The play therapist appreciates the gradual nature of the therapeutic process and does not attempt to rush the process.
8. The play therapist establishes only those therapeutic limits that help the child recognize the world of reality and one’s responsibility in the relationship.

Guerney (2001) and Landreth (2012) expanded on Axline’s (1947) work, establishing what is currently known as CCPT. Landreth developed specific facilitative responses that he identified as “essential to the child-centered play therapy process” (p. 215). These responses include reflecting nonverbal play behavior/tracking, reflecting content, reflecting feelings, building self-esteem, facilitating decision making and returning
responsibility, and limit setting. Others also recognized the importance of Axline’s eight principles as the foundation for child-centered play therapy (Cochran, Nordling, & Cochran, 2010; Van Fleet, Sywulak, Sniscak, & Guerney, 2010). Additionally, Ray (2011) emphasized the importance of understanding Rogers’ (1951) 19 theoretical propositions and their application to play therapy.

According to Landreth (2012), the therapist has a responsibility to communicate the following messages to the child: I am here, I hear you, I understand, and I care. Landreth identified the following objectives of the therapeutic relationship: (a) to establish an atmosphere of safety for the child, (b) to understand and accept the child’s world, (c) to encourage the expression of the child’s emotional world, (d) to establish a feeling of permissiveness, (e) to facilitate decision making by the child, and (f) to provide the child with an opportunity to assume responsibility and to develop a feeling of control. The child-centered play therapist allows the child to lead but is emotionally active and involved throughout the session.

In CCPT, the relationship between the child and play therapist is essential to change. As the therapist demonstrates and provides an accepting relationship, the child can start to value and accept oneself. Cochran et al. (2010) stated that the primary goal of CCPT is to “create an atmosphere wherein the child has an authentic relationship with his therapist, one where he is deeply understood and valued, and free to express all feelings without judgment or reproach” (p. 58). Landreth (2012) stated “the relationship is the therapy” (p. 82). He emphasized the importance of being with the child and fully experiencing his or her world. The relationship between the child and the
play therapist provides an environment where the child can feel safe and free to explore and express oneself.

Utilizing this therapeutic relationship, CCPT is an intervention where children can communicate and relate to the play therapist in whatever way is most comfortable for them. As they feel increasingly understood and safe, their level of motivation to engage with the external world increases (Ray, Sullivan, and Carlson, 2012). This has the potential to impact the quality and quantity of social interactions and relationships. As the therapeutic relationship strengthens, children have the opportunity to experience empathy within the relationship and then generalize it outwards to others. Within this safe relationship, children can also develop an increased ability to regulate their emotions and behaviors.

*Play Therapy for Children with ASD*

Ray et al. (2012) conceptualized children on the autism spectrum as challenged in relationships, seeing behavioral symptoms as characteristic of pervasive relationship limitations. With communication as the primary concern, they argued that CCPT is a relationship-based intervention where the therapeutic relationship and method of communicating within that relationship serve as the therapeutic factors for change. They go on to discuss several reasons why CCPT can be an effective intervention. First, the child will have the opportunity to experience unconditional acceptance from the therapist, which is seldom experienced by children with ASD. Their motivation to interact with others in the world can increase once they experience safety and understanding within the therapeutic relationship. This concept is especially relevant to those higher functioning individuals, as they usually have a strong desire to socially
connect with others but lack the knowledge of how to do it (Attwood, 1998; Grandin, 1995). Ray and colleagues go on to explain that children are not forced to talk in CCPT and can still nonverbally communicate if that is what they are comfortable doing. Due to the impaired meaningful symbolic interaction of many children on the autism spectrum, the nonverbal interaction between the child and therapist can help improve a child’s communication. Another aspect of CCPT that is valuable for children with ASD is that they have the opportunity to understand themselves and make changes from an intrinsic need, which is a different approach from behavioral interventions. When establishing this internal reward, changed behavior becomes integrated into who they are and will not dissipate when rewards are no longer received or therapy ends (Ray et al., 2012).

Based on the literature searches conducted by the author and others, very little research has been conducted on using play therapy for children with autism (Mitteldorf, Hendricks, & Landreth, 2001). Since the introduction of CCPT, 62 outcome studies have explored its effectiveness and have concluded that it is an effective intervention for children (Ray, 2011). Although few studies have been conducted with the specific population of children with ASD, many research studies have been conducted regarding a wide variety of emotional and social difficulties. Children on the autism spectrum often demonstrate many of these symptoms and characteristics. It is likely that children on the autism spectrum can benefit from play therapy to address many of these concerns, whether or not they are directly related to their primary diagnosis on the autism spectrum.
Although there is a lack of literature on play therapy and children with ASD, some researchers have documented case studies and results of their work with children with autism. Virginia Axline (1964) wrote *Dibs: In Search of Self*, where she described her success in using play therapy with a boy who was extremely withdrawn from teachers and peers. Dibs, a 5-year old male, struggled to communicate effectively and socially interact with others in appropriate ways. He was frequently misunderstood by those around him and was even thought to be mentally retarded. Axline’s description of Dib’s behavior is consistent with the current understanding of ASD. In her book, Axline described the process of play therapy with Dibs. Through this process, Dibs was able to feel safe and comfortable enough to be himself and show his giftedness and emotions.

Josefi and Ryan (2004) described a case study with a boy who had been diagnosed with autism. This boy, who they called “John,” was 6 ½ years old when he started child-centered play therapy and participated in 19 non-directive play therapy sessions over a period of 5 months. They determined that non-directive play therapy was helpful for John in the following areas: autonomy, initiation of joint attention, concentration, enjoyment, interaction with the therapist, and in the development of symbolic or pretend play. They also reported that John demonstrated a high level of acceptance of boundaries in the playroom, indicating an improvement in emotional development. Josefi and Ryan identified that “non-directive play therapy may provide children with autism, similarly to children who have other emotionally troubling issues in their lives, with: (a) emotional security and relaxation, (b) an enhanced and attentive adult environment in which playing together is emphasized, and (c) the acceptance by
therapists of children’s ability to instigate therapeutic change for themselves under favorable conditions” (p. 545).

Research Supporting CCPT for Children with ASD

To date, there are no large group research studies using CCPT for children with ASD. However, there are studies that support the use of CCPT for improving core concerns related to ASD, such as social skills, relationship, and overall impairment. Many studies have demonstrated the effectiveness of CCPT in improving social behaviors (Cox, 1953; Fall, Navelski, & Welch, 2002; Schmidtchen & Hobrucker, 1978; Trostle, 1988), a primary concern for children with ASD. As described earlier, children with ASD often struggle with self-regulation and would benefit from improving their ability to control their emotions and behaviors. CCPT has demonstrated effectiveness in improving locus of control. Post (1999) found that children in a control group demonstrated decreases in their externalized locus of control compared to children who participated in CCPT. Baggerly and Jenkins (2009) found that children demonstrated improved internalization of control after engaging in CCPT. They explained that internalization of control includes “being emotionally secure, accepting constraints, accommodating others, responding constructively to others, and maintaining internalized standards” (p. 51)

Researchers demonstrated that CCPT is effective for children with various impairments. For example, Swan (2011) conducted a study investigating the impact of CCPT on children with an intellectual disability. She utilized a single-case design and found that hyperactivity and irritability problem behaviors decreased in children with intellectual disabilities after participating in CCPT. Ray, Stulmaker, Lee, & Silverman
(2013) conducted a study utilizing CCPT for children with severe functional impairment. They found that those who participated in the treatment group demonstrated statistically significant improvement in overall functioning, improvement in academic progress, and less classroom problems. Functional impairment is highly correlated with self-regulation (Anastopoulos et al., 2011), constructs that both affect children with ASD and can be positively impacted with CCPT. Additionally, Ray et al. (2013) explained that self-regulation and empathy are directly tied to a child’s level of functioning and home and school. When a child has high levels of both empathy and self-regulation, one can experience and/or understand the feelings and situation of another and also separate themselves enough to make decisions about the most appropriate response.

Summary

From the time autism was first described in the 1930s and 1940s, prevalence has gone from an extremely rare condition to one of the more common childhood disorders. With the prevalence of ASD on the rise, it is important to understand the origin and treatment of the disorder in order to continue learning and developing the most effective treatments. Although the exact cause of ASD is still unknown, research has advanced enough to understand that it is likely a combination of genetic, neurobiological, and neuroanatomical factors.

Traditional approaches to treating autistic symptoms have primary included behavioral approaches. Although some studies demonstrate the effectiveness of behavioral strategies for building specific skills, play therapy is an intervention that is proposed to address social and relational concerns, vital issues for children with ASD. Play therapy may be an effective treatment method for children on the autism spectrum.
due to their difficulty with verbal communication and reduced cognitive skills. The play therapy environment gives them an opportunity to express themselves in ways that are most comfortable and meet their level of development. CCPT specifically provides the child with ASD the experience of being in relationship with a therapist who is accepting, empathic, and encouraging of the holistic person of the child.

Depending on where an individual falls on the autism spectrum, children can demonstrate various levels of impairment in the areas of social interaction, stereotyped behaviors, and communication. In play therapy, children are free to express themselves in ways that align with their developmental stage and they are able to choose activities that meet their needs for expression. While little research exists on the utilization of play therapy with this population, research supports using play therapy to address many symptoms that children on the autism spectrum often exhibit, such as anxiety, depression, behavior problems, and social concerns. However, research examining the relationship between CCPT and social-emotional behaviors of children with ASD has yet to be conducted.
APPENDIX B
EXTENDED METHODOLOGY
The purpose of this study was to investigate the impact of Child-Centered Play Therapy (CCPT) on children with an Autism Spectrum Disorder (ASD). Specifically, the researcher examined the effectiveness of CCPT on the child’s level of empathy, self-regulation, and social competence. The study utilized an experimental single-case design. The proposed methodology is outlined below, including the research question, selection of participants, instrumentation, treatment procedures, data collection, and data analysis.

Research Question

The research question for this study was as follows: What is the impact of CCPT on the social competence, empathy, and self-regulation of children diagnosed with ASD?

Definition of Terms

Autism Spectrum Disorder

For the purpose of the study, ASD was defined in accordance with the *DSM-5* (APA, 2013). The child must have received this diagnosis by a mental health professional or physician.

Child-Centered Play Therapy

CCPT was defined using Landreth's (2012) definition:

Play therapy is defined as a dynamic interpersonal relationship between a child (or person of any age) and therapist trained in play therapy procedures to provide selected play materials and facilitates the development of a safe relationship for the child (or any person of age) to fully express and explore self (feelings, thoughts, experiences, and
behaviors) through play, the child’s natural medium of communication, for optimal growth and development. (p. 11)

For the purpose of this study, CCPT was operationalized by the CCPT manual (Ray, 2011).

Self-regulation/Responsibility

In accordance with the Social-Emotional Assets and Resilience Scales (SEARS; Merrell, 2011), self-regulation/responsibility, was a “child’s self-awareness, metacognition, intrapersonal insight, self-management, direction, ability to accept responsibility, and ability to think before acting” (p. 4). For the purpose of this study, self-regulation/responsibility was operationalized by the Self-regulation/Responsibility subscale on the SEARS.

Social Competence

In accordance with the SEARS (Merrell, 2011), social competence was a “child’s ability to maintain friendships with his or her peers, engage in effective verbal communication, and feel comfortable around groups of peers” (p. 4). For the purpose of this study, social competence was operationalized by the Social Competence subscale score on the SEARS.

Empathy

In accordance with the SEARS (Merrell, 2011), empathy was a “child’s ability to understand and relate to others’ situations and feelings” (p. 4). For the purpose of this study, empathy was operationalized by the Empathy subscale score on the SEARS.
Participants

Research participants included six children recruited from a local autism clinic and speech and hearing clinic located on the campus of a large state university in the southwestern United States. Participants met the following criteria: (a) received a diagnosis of ASD from a physician or mental health professional according to the DSM-5 (APA, 2013), (b) ages between 5 and 9 years old, (c) met criteria for Tier 2 or Tier 3 on the Social-Emotional Assets and Resilience Scales – Parent form (SEARS-P), and (d) were not involved in any counseling services. The researcher gained human subjects approval by the University of North Texas Institutional Review Board (IRB) prior to the start of the study. Additionally, parents or legal guardians received and signed informed consent for participants prior to the start of the study. Individual information for each participant is listed below. Pseudonyms were used to help maintain confidentiality.

Participant 1

*Background Information.* Bella was an 8-year-old Latin American female who resided with her biological parents and younger brother. She qualified for this study due to her diagnosis of Autism Spectrum Disorder (ASD) and SEARS-P scores falling in the High Risk Range. Bella and her parents moved to the United States from South America when she was approximately 1 year old.

Developmentally, Bella achieved some of her early milestones, such as crawling and walking, at the expected ages. Her speech was slow to develop, and she stopped saying new words at approximately 21 to 24 months old. At the time of the study, Bella was unable to speak in sentences. When Bella was approximately 21 months old,
Bella’s mother noticed that Bella was not very interested in interacting with others and frequently cried and threw tantrums.

Bella was diagnosed with ASD at 3 years old by a developmental pediatrician and became enrolled in early intervention services in school at that time. Since she was 3 years old, Bella received speech and occupational therapies and her mother reported that her progress had fluctuated. From ages 3 to 4 ½ years old, Bella saw a Defeat Autism Now (DAN) doctor that utilized a biomedical approach to treating autism with vitamins and supplements. Bella’s mother reported discontinuing this treatment for Bella due to the family relocating and did not resume treatment because she did not see results. At 6 ½ years old, Bella became involved in Applied Behavior Analysis (ABA) treatment in her school setting and her mother reported no progress. From ages 7 to 8 years old, Bella was under the care of a doctor that treated autism with antiviral medication to decrease inflammation in the brain. After a year of this treatment, Bella’s mother reported no change and stopped the treatment. At 8 years old, Bella’s mother chose to disenroll her from public school and enroll her in an autism treatment center where she could receive more individual attention. At the beginning of this study, Bella was involved in ABA, speech therapy, and occupational therapy services. Due to the severity of Bella’s behavioral problems, she was prescribed Risperdone, Buspar, and Intuniv. She started taking Risperdone when she was 6 years old and the other medications at 7 years old.

Regarding social and emotional abilities, Bella interacted with her brother and a few other children at the autism treatment center but had no close friends. She preferred to play alone but had recently shown increased interest in others. Bella’s
mother reported that Bella was affectionate with her parents and brother and primarily communicated through gestures and using a picture book. Her mother described her as affectionate, compliant, active, and loving music. Results of the SEARS-P indicated that Bella fell within the Tier 3 category, which qualified her for inclusion in the present study.

Participant 2

*Background Information.* Ethan was a 7-year-old Caucasian male who was adopted at birth by his mother and father. Ethan’s biological mother experienced many stressors during her pregnancy, including the death of her mother, relocating, ending a marital relationship, and starting a new relationship. Ethan had four biological siblings that were removed from his biological parents’ care and had no contact with them. His biological mother reported taking pain relievers during her pregnancy for headaches and experienced no complications during Ethan’s birth. Ethan’s biological paternal grandfather had a diagnosis of schizophrenia.

Ethan’s mother first suspected he may have ASD when he was 9 months old due to his poor eye contact, lack of facing people when held, not imitating the sounds of others, and more interest in toys than interaction with people. A physician at a children’s hospital formally diagnosed Ethan with ASD when he was 3 years old. Ethan first received services through Early Childhood Intervention (ECI) when he was 1 year old, where someone came to the house one time per week to play with and evaluate him. He started speech therapy when he was 18 months old. Additionally, when he was 2 years old, Ethan started receiving ABA, occupational therapy, and physical therapy through ECI. At 3 years old, Ethan moved to a different state and then received ABA, speech therapy, occupational therapy, music therapy, and adaptive physical education.
through the school district. In addition to ASD, Ethan had an auditory processing delay and sensory concerns, particularly regarding touch, auditory, and smells. At the time of the study, Ethan did not take any medication on a regular basis.

Ethan’s mother reported that he had trouble making friends and preferred to play alone but watched other children and later attempted to imitate their play skills. He liked to be chased but did not understand the reciprocal action of chasing back. When with his parents, he was loving and very affectionate, giving hugs and kisses, and snuggling with them when watching TV or reading books. His mother stated that he was “as present as he can be.” Ethan struggled expressing himself and used as few words as necessary. He was willing to use more words if needed to get what he wanted. His mother believed that Ethan did not demonstrate empathy for others and was unable to understand how being rough in his actions could possibly hurt others. He also had trouble following instructions and rules. Ethan had many strengths, including his willingness to try hard when learning new things, ability to problem-solve, and general happy nature. His parents loved his smile and sense of humor. Results of the SEARS-P indicated that Ethan fell within the Tier 3 category, which qualified him for inclusion in the present study.

Participant 3

Background Information. Rachel was a 9-year-old female of African American and Spanish descent. At the time of the study, she lived with her mother, older brother, and maternal grandmother. Rachel's parents divorced when she was 3 years old and she saw her dad approximately twice a month. Rachel’s mother reported she was highly
stressed throughout her pregnancy with Rachel due to marital concerns, but there were no complications with the pregnancy or delivery of Rachel.

According to Rachel’s mother, all of Rachel’s early childhood developmental milestones appeared normal with the exception of her speech, as she continued to struggle with speaking in sentences. Early in childhood, Rachel’s mother noticed that it was difficult to get Rachel’s attention and that Rachel would not point to things. Her mother also noticed that she lined up her toys and tended to be obsessive-compulsive about some things.

Rachel started speech therapy through ECI when she was 3 years old. Additionally, she started receiving speech therapy services at a clinic outside of the school system at 5 years old and continues these services twice a week. When she was 4 years old, Rachel was enrolled in Preschool Programs for Children with Disabilities (PPCD) for pre-kindergarten and kindergarten. She was diagnosed with Autism Spectrum Disorder at 5 years old through her school system. For two years, from ages 6 to 8 years old, Rachel was enrolled in a program where she received ABA four days a week.

Rachel had never received a mental health diagnosis other than ASD. Her mother explained that Rachel tended to get sick easily but that had recently decreased with the start of probiotics. Rachel did not take any other medications. Regarding her social and emotional health, Rachel did not make friends easily and did not seem to care much about her peers. Rachel’s mother explained that her classmates usually liked her and she got along with them, but she did not have close friends. In the year prior to the study, Rachel started wanting to be around other people but continued doing her
own thing when around others. She got along well with her parents and brother. Also
during the year before the study, Rachel’s mother reported that Rachel had shown she
cared about others’ feelings. Some of her challenges at the time of the study included
her ability to control her temper and transition to new things. Some of her strengths
included her independence, unique confidence, care-free attitude, and silliness. Her
mother also described her as fairly well-behaved and good with numbers. Results of the
SEARS-P indicated that Rachel fell within the Tier 3 category, which qualified her for
inclusion in the present study.

Participant 4

Background Information. Ian was a 6-year-old Caucasian male who lived with his
parents and two older sisters, ages 14 and 17 years old. Ian’s mother reported taking
progesterone for the first three months of her pregnancy due to previous miscarriages
and had no complications. Ian was born one week early, was covered in meconium, and
had a little bit of jaundice. According to Ian’s mother, the doctors had no major concerns
and they were discharged within 24 hours of Ian’s birth. They later went back to the
hospital due to a genetic issue called Duarte Galactosemia, which affected Ian’s ability
to break down sugar in milk. This was only a concern for his first year of life and no
longer affected him at the time of the study.

Ian was diagnosed with Autism Spectrum Disorder by a neurologist when he was
2 years old. His mother described his social development as normal up until he was 19
months old when he suddenly lost his social skills and stopped saying words and
making sounds. He was suddenly unresponsive to others and became disengaged and
disconnected from others. Upon noticing these changes, Ian’s mother immediately
talked to his pediatrician and got him involved in ECI services. Ian later developed stemming behaviors when he was 3 years old.

Ian was involved in a variety of services from a young age. He started speech therapy, occupational therapy, and physical therapy at 19 months old through ECI. When he turned 3 years old, he became enrolled in PPCD through his local school district, continuing speech, occupational, and physical therapies through that program.

Ian started ABA services when he was 2 years old. Initially, he participated in ABA three to five days per week for three hours per day and continued for one and a half years. He later received in-home ABA services. When he was 4 years old, Ian was in an intensive outpatient program for one year at a children’s hospital where he participated in ABA twice a week for three hours per day. Then, starting at 5 years old, he started attending a full-time autism treatment center where he received ABA five days a week. At the time of the study, Ian was enrolled at an autism treatment center where he received speech therapy and ABA services.

In addition to ASD, Ian was diagnosed with Pica Disorder when he was 1 year old. His mother also reported that he had a sensory processing disorder that she had noticed since he could crawl. He had sensitive skin and was sensitive to oral sensations. He was also a sensory seeker and sought out loud noises. Regarding physical health, Ian was healthy with the exception of environmental allergies, acid reflux for which he was prescribed a topical cream, and being allergic to casein. Other than the topical cream, Ian took no medications on a regular basis. He had participated in an overnight sleep study where his EEG showed no evidence of seizures. He had also completed an MRI, which came back normal.
According to Ian’s mother, he had no friends. He tended to play alone but would prefer to be around others. He sometimes tried and interacted with others in physical games, such as chase. Ian’s mother did not think that Ian understood the feelings of others. Regarding his strengths, Ian’s mother described him as sweet, laid back, likeable, silly, funny, and a good sport. She also stated that he was a visual learner and transitioned well. Results of the SEARS-P indicated that Ian fell within the Tier 3 category, qualifying him for inclusion in the present study.

Participant 5

**Background Information.** Hunter was a 6-year-old Caucasian male who lived with his adoptive parents. Hunter was adopted at birth and adoption was finalized when he was 3 weeks old. Other than spending time with his parents, Hunter spent a significant amount of time with his nanny, who had interacted with him on a daily basis since he was 3 months old. Hunter was also bonded with his grandparents, who he saw every six to eight weeks.

Hunter’s birth mother had a high level of stress during her pregnancy due to multiple hospitalizations for her kidney infections. She took prenatal vitamins and antibiotics throughout her pregnancy. When Hunter was born, he was purple and required a valve mask and ventilation for 90 seconds. He was born on time and weighed slightly over 5 pounds. He was globally delayed in his early development but stayed within the 5th percentile of normal development.

From birth, Hunter was a poor feeder and had an uncoordinated suck. He was diagnosed with Gastroesophageal Reflux Disease (GERD) at 3 weeks old, screamed constantly, and spit up a lot. He started medication at 3 weeks and continued taking it
daily. He remained a picky eater but was in the 50th percentile for his weight at the time of the study. Hunter always had difficulty sleeping. It was always difficult for him to go to sleep and he took short naps. He started taking melatonin as a sleep aid at 6 years old, which his mother reported as helpful.

Hunter started attending Mother’s Day Out when he was 18 months old and then went into PPCD at 4 years old. He started attending a full-time autism treatment center when he was 6 years old. Hunter’s mother first suspected he had ASD when Hunter was 9 months old due to his active avoidance of eye contact with people other than his parents and nanny. He first started receiving speech therapy when he was 3 ½, years old occupational therapy at 4 years old, and ABA when entering the autism treatment center at 6 years old.

Hunter received a formal diagnosis of ASD and Attention Deficit-Hyperactivity Disorder (ADHD) when he was five years old from a physician at a children’s hospital. He started medication for ADHD upon receiving his diagnosis, which helped improve his sleep and decrease his noncompliant behavior.

Hunter had friends in the past but they have all moved. He tended to play alone but tolerated others and sometimes shared toys. He tended to interact more with younger children or older children who babied him. Hunter’s mother reported that he appeared to care about others’ feelings and got upset if others cried, often trying to intervene. She further explained that his father had an illness that sometimes caused him pain and Hunter got upset when his dad was hurt.

Hunter struggled most with knowing how to communicate with others to get his needs and desires met. He had good, bonded relationships with his parents. His mother
described him as happy and well-adjusted. Results of the SEARS-P indicated that Hunter fell within the Tier 3 category, qualifying him for inclusion in the present study.

Instrumentation

The Social-Emotional Assets and Resilience Scales (SEARS)

The Social-Emotional Assets and Resilience Scales (SEARS) system (Merrell, 2011) is a strength-based assessment for children and adolescents ages 5 to 18 years old. It assesses the social-emotional competencies of children and adolescents from multiple perspectives, including self, teacher, and parent. There are four separate report forms, each with 35 to 41 items. The SEARS-Child (SEARS-C) is designed to be completed by children in grades 3 to 6 (8 to 12 years old). The SEARS-Adolescent (SEARS-A) is designed for students in grades 7 to 12 (13 to 18 years old). Teachers or other educators can complete the SEARS-Teacher (SEARS-T) for students in grades K to 12 (5 to 18 years old). Parents, guardians, or other home-based caregivers complete the SEARS-Parent (SEARS-P) for children and adolescents in grades K-12 (5 to 18 years old). Each full-length form has a corresponding Short Form with 12 items that generates a single score. On each form, a 4-point rating scale is given for each item: Never (0), Sometimes (1), Often (2), and Always (3).

The SEARS-P allows for repeated measure administration unrestricted by length between administrations in order to gather scores for social competence, empathy, and self-regulation. The SEARS-P has 39 items and includes the following three subscales: Self-Regulation/Responsibility (SR/R; 22 items), Social Competence (SC;10 items), and Empathy (E; 7 items).
The normative sample for the SEARS-P consisted of a total of 1,204 participants across the United States that were divided into two age groups to correspond with the SEARS-C and SEARS-A. The child group consisted of 649 children in grades K to 6 that were distributed across multiple geographic regions, including the South (38%), West (34%), Midwest (19%), and Northeast (9%). The ethnicities included in this sample were Caucasian (55.3%), African American (11.4%), Hispanic (13.3%), and Other (19.9%). The SEARS-P has strong internal consistency (α = .96). The internal consistency reliability coefficients for the subscales are as follows: Self-Regulation/Responsibility (α = .95), Social Competence (α = .89), and Empathy (α = .87). The SEARS-P also has strong test-retest reliability (r = .93). The test-retest reliability coefficients for the subscales are as follows: Self-Regulation/Responsibility (r = .92), Social Competence (r = .88), and Empathy (r = .90). Although no “gold standard” exists for measuring social and emotional assets and resilience, validity measures were conducted to gain construct validity and demonstrated that the SEARS system is “sensitive to theoretically expected group differences in scores” (Merrell, 2011, p. 74). Additionally, the SEARS-P was correlated with the parent rating form of the Social Skills Rating System (SSRS; Gresham & Elliott, 1990) and the Home and Community Social Behaviorubs (HCSBS: Merrell & Caldarella, 2002), providing evidence for convergent validity for the SEARS-P (Merrell, 2011).

The SEARS system was not designed to provide a specific diagnosis. Instead, scores are grouped into three tiers. Students in Tier 1 are Average to High Functioning and are “likely to have adequate to excellent relationships with peers, teachers, and others, to have appropriate self-regulation skills, to demonstrate age-appropriate self-
regulation skills, to demonstrate age-appropriate levels of personal responsibility, and they show appropriate empathy toward others” (Merrell, 2011, p.34). Students in Tier 2 are in the At Risk range and “may have some emerging social-emotional deficits that would benefit from a closer look” (Merrell, 2011, p. 35). Students in Tier 3 are categorized as High Risk and are “likely to have significant acquisition or performance deficits in their social competence, self-regulation, empathy, or responsibility skills” (Merrell, 2011, p. 35). Students in Tier 3 likely experience significant adjustment problems. Merrell (2011) specifically promoted the use of the SEARS with children who exhibit symptoms of disorders such as high-functioning autism, PDD, or Asperger’s Disorder.

Procedures

I utilized an experimental single-case methodology for this study with a reversal/withdrawal ABA design. After the participants were selected, parents signed informed consents and waived assent due to the developmental level of the participants (Appendix C). Data for each participant was collected and analyzed separately to understand the unique changes in that individual.

First, a parent or caregiver of each participant participated in a parent interview (Appendix D) to gather demographic and developmental information. The study then started with an initial baseline phase of measurement, where participants did not engage in CCPT. Parents of the participants completed a SEARS-P one time per week. Kennedy (2005) identified that the default response of researchers is three data points for the baseline phase but that it should be as long as necessary to establish a stable baseline. For this study, the baseline phase continued for a minimum of three weeks in
order to gain an average data point for each participant. The baseline phase extended beyond three data points if a stable baseline was not achieved and continued until a stable baseline was evident. After completion of the baseline phase, the treatment phase began.

In the treatment phase, participants engaged in 30-minute play therapy sessions twice a week for approximately 10 weeks. Occasionally, participants only engaged in one play therapy session in a particular week due to school closings, participant illness, or the participant or play therapist being out of town. Parents of each participant continued completing the SEARS-P once per week at the end of each week. After completing approximately 20 play therapy sessions, the participants returned to the no-treatment follow-up phase. If a stable treatment phase data pattern was not yet established, then the participants continued engaging in CCPT until one was established and then returned to the no-treatment follow-up phase. Some participants had fewer than 20 play therapy sessions due to them entering into the study at a later time and also needing longer baseline phases.

During the follow-up phase, participants no longer engaged in CCPT and parents of participants continued completing the SEARS-P each week for a minimum of three weeks or until an average data point was established. Table B.1 provides information for each participant’s procedure during this study. After the study was completed, each parent or caregiver participated in a follow-up interview (Appendix D) to gather information about any perceived changes.
Table B.1

*Participant Protocol Across Phases*

<table>
<thead>
<tr>
<th>Participant</th>
<th>Baseline</th>
<th>Treatment</th>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of Weeks</td>
<td># of Weeks</td>
<td># of Sessions</td>
</tr>
<tr>
<td>Bella</td>
<td>4</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>Ian</td>
<td>3</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>Hunter</td>
<td>4</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Ethan</td>
<td>6</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Rachel</td>
<td>7</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

*Description of CCPT Intervention*

The play therapist facilitating CCPT with the participants in this study completed three years of doctoral work in counseling, 20 hours of graduate-level coursework in play therapy, and had 9 years of experience utilizing play therapy. Additionally, she was licensed as a Licensed Professional Counselor – Supervisor (LPC-S) in the state of Texas and a Registered Play Therapist – Supervisor (RPT-S). All children in this study received individual CCPT according to Ray’s (2011) Child-Centered Play Therapy Treatment Manual.

As previously described, CCPT is a nondirective and developmentally appropriate approach to counseling children where the focus is on developing a safe relationship that allows the child to explore and express oneself. There is no attempt to control or change the child but instead to facilitate self-awareness and self-direction (Landreth, 2012). Ray (2012) identified the following eight categories of therapeutic verbal responses, all of which were used in this study: (a) tracking behavior; (b) reflecting content; (c) reflecting feeling; (d) facilitating decision making, returning responsibility; (e) facilitating creativity, spontaneity; (f) esteem building, encouraging; (g)
facilitating relationship; and (h) limit-setting. In addition to these verbal responses, the play therapist also used nonverbal skills, such as tone of voice and body language to provide congruence, unconditional positive regard, and empathy.

Children participated in two 30-minute play therapy sessions per week over approximately ten weeks. Session length was 30 minutes for each session and was video-recorded. After the conclusion of the study, one video recording per child was randomly selected for a treatment fidelity review. The fidelity reviewer held a master’s in counseling and completed two years of doctoral coursework including two years of supervised clinical work in CCPT. The reviewer rated therapist responses with the Play Therapy Skills Checklist (Ray, 2011) to ensure the therapist’s responses fell within the verbal categories of CCPT protocol. Sessions adhered to CCPT protocol 99% of the time.

Playroom and Materials

The playroom and toys used in this study were in accordance with Ray’s (2011) Child-Centered Play Therapy Treatment Manual. The playroom was approximately 9 by 10 feet and included shelves, a puppet theater, and a sandbox. The room was equipped with a camera to record all sessions. It is essential that the playroom be equipped with developmentally appropriate toys to allow children the ability to express themselves in ways that feel comfortable and natural. When selecting toys, the play therapist should ensure that each toy has a therapeutic purpose, helps children express themselves, and helps the therapist and child build a relationship (Ray, 2011). It is important to remember that children have different needs and can express themselves in a variety of ways. For example, Ray et al. (2013) found that girls more frequently play with toys that
are considered nurturing and relational and boys more often play with toys considered
violent or aggressive. The playroom used in this study was equipped with toys
according to suggestions made by Landreth (2012) and are detailed in Table B.2.

Table B.2

Toys in Playroom

<table>
<thead>
<tr>
<th>Airplane</th>
<th>Hats - fireman, policeman, tiara, crown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balls</td>
<td>Jewelry</td>
</tr>
<tr>
<td>Band-Aids</td>
<td>Masks</td>
</tr>
<tr>
<td>Barbie doll</td>
<td>Medical kit</td>
</tr>
<tr>
<td>Bean bag</td>
<td>Medical mask Nursing bottle (plastic)</td>
</tr>
<tr>
<td>Bendable doll family</td>
<td>Pacifier</td>
</tr>
<tr>
<td>Blunt scissors</td>
<td>Paints, easel, brushes</td>
</tr>
<tr>
<td>Brush</td>
<td>Play camera</td>
</tr>
<tr>
<td>Construction paper (several colors)</td>
<td>Play money and cash register</td>
</tr>
<tr>
<td>Crayons, pencils, paper</td>
<td>Pots, pans, silverware</td>
</tr>
<tr>
<td>Cymbals</td>
<td>Puppet theater</td>
</tr>
<tr>
<td>Dart gun</td>
<td>Rope</td>
</tr>
<tr>
<td>Dinosaurs, shark</td>
<td>Rubber knife</td>
</tr>
<tr>
<td>Dishes</td>
<td>Rubber snake, alligator</td>
</tr>
<tr>
<td>Doll bed, clothes, blanket</td>
<td>Sandbox, shovel, sieve, pail</td>
</tr>
<tr>
<td>Doll furniture</td>
<td>School bus</td>
</tr>
<tr>
<td>Dollhouse</td>
<td>Spider and other insects</td>
</tr>
<tr>
<td>Dolls, baby clothes</td>
<td>Stuffed animals</td>
</tr>
<tr>
<td>Dress-up clothes</td>
<td>Telephone (two)</td>
</tr>
<tr>
<td>Drums</td>
<td>Tissues</td>
</tr>
<tr>
<td>Egg cartons</td>
<td>Toy noise-making gun</td>
</tr>
<tr>
<td>Empty food containers</td>
<td>Toy soldiers and army equipment</td>
</tr>
<tr>
<td>Erasable nontoxic markers</td>
<td>Transparent tape, nontoxic</td>
</tr>
<tr>
<td>Flashlight</td>
<td>Watercolor paints</td>
</tr>
<tr>
<td>Hand puppets</td>
<td>Xylophone</td>
</tr>
<tr>
<td>Handcuffs</td>
<td>Zoo animals and farm animal families</td>
</tr>
</tbody>
</table>

Data Analysis

For this study, the researcher used visual data analysis as the primary method of
data analysis. According to Kratochwill et al. (2010), visual analysis involves four steps.
First, the researcher must have documentation of data with a predictable baseline
pattern. Second, the researcher examines the data in each phase to look for within-
phase patterns. Third, the data in one phase is compared to data in the adjacent phase to determine if there is an effect. Last, all data is integrated to determine if there are three demonstrations of an effect and three different points of time, which would indicate an experimental effect.

The data from the SEARS-P were plotted on a graph in Microsoft Word after each administration. The researcher examined the level, trend, and variability to analyze between and within-phase patterns (Kennedy, 2005). The level of data refers to the mean score of the data within a phase. More data points are required to demonstrate an effect where there is more within-phase variability, within-phase trend, or between-phase overlap (Horner & Swaminathan, Sugai, & Smolkowski, 2012). The trend of data is the slope of the best fitting straight line for the data within a phase and interpreted according to $R^2$. According to Cohen (1988), a $R^2$ value of .01 indicates a small effect, $R^2$ value of .09 demonstrates a medium effect, and a $R^2$ value of .25 indicates a large effect. The data within a phase is considered more stable when data points are closer to the trend line. Variability is the fluctuation of the data. As stated earlier, the greater the variability within a phase, the more data points are needed to document a predictable within-phase pattern. Variability is determined through visual inspection and interpretation can be informed through standard deviations of level means.

Along with examining within-phase patterns, between-phase patterns were also analyzed once the intervention phase started and continued throughout the remainder of the study. The first pattern is termed overlap, which is the proportion of data in one phase that overlaps with data in the previous phase. The weight of the overlap is greatest when trend and variability are minimal. Additionally, low overlap suggests a
larger effect (Horner et al., 2012). A second pattern is the immediacy of the effect, which is any change in data patterns following manipulation of the independent variable. Typically, the more immediate the effect, the more likely the change is attributed to manipulation of the independent variable (Horner et al., 2012).

Finally, effect size was calculated using Nonoverlap of All Pairs (NAP). Used in conjunction with visual analysis, effect size calculations produce a value for the strength of the relationship between two variables. Kelley and Preacher (2012) defined effect size as “a quantitative reflection of the magnitude of some phenomenon that is used for the purpose of addressing a question of interest” (p. 140). They called it a statistic with a purpose. To calculate NAP, I paired each data point in the baseline phase with each data point in the treatment phase. I examined each pair to determine the number of nonoverlapping pairs. As suggested by Parker and Vannest (2009), I assigned one point for each overlap and half a point for each tie. After adding up the points to determine the sum of overlap, I subtracted this number from the total possible pairs and divided it by the total number of pairs to determine the NAP. Traditionally, effect sizes in single-case designs have been generated from various nonoverlap procedures including PND, PEM, and PAND (Lenz, 2012). Scruggs and Mastropieri (1998) provided the following guidelines for interpretation of effect sizes: .90 and above denote very effective treatments, .70-.90 indicate moderate effectiveness, .50-.69 suggest debatable effectiveness, and scores below .50 are considered ineffective. Parker and Vannest provided the following conservative and “very tentative NAP ranges” (p. 264) for interpretation of single case effect sizes: 0-.65 weak effects; .66-.92 medium effects and
.93 -1.0 strong effects. For the purpose of this research study, I will interpret effect sizes according to interpretations set by Parker and Vannest.
APPENDIX C

UNABRIDGED RESULTS
This study utilized a single-case design to examine the impact of child-centered play therapy (CCPT) on children with Autism Spectrum Disorder (ASD). More specifically, the measure used was designed to specifically measure empathy, self-regulation, and social competence, as well as generate a total score for each individual. In this section, I present the findings for each individual participant, including the results of visual analysis and information gathered from follow-up parent interviews. I utilized visual analysis to separately examine each participant’s data. After using scoring software to score each assessment, I then graphed each participant’s scores from the SEARS-P on separate graphs. The SEARS-P included the following 4 subscales: Self-Regulation/Responsibility (SR/R), Social Competence (SC), Empathy (E), and Total. Results are presented according to each participant. After utilizing visual analysis, I calculated effect sizes for each construct using the Nonoverlap of All Pairs (NAP) statistic.

Participant 1: Bella

Bella participated in 4 weeks of a non-intervention baseline phase, 13 weeks of intervention phase where she participated in 22 play therapy sessions, and 3 weeks of a non-intervention follow-up phase. Table C.1 provides the means and standard deviations for each subscale in each phase of the study. For two subscales, Social Competence and Empathy, means increased from the baseline phase to the intervention phase and then slightly decreased during the follow-up phase. For the other two subscales, Self-Regulation/Responsibility and Total, means continually increased across all phases of the study. Figure C.1 provides a graphical representation of all data collected for Bella.
Table C.1

*Means and Standard Deviations for Bella’s SEARS-P Scores*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Self-Regulation/ Responsibility (SR/R)</td>
<td>22.75</td>
<td>1.71</td>
<td>25.45</td>
</tr>
<tr>
<td>Social Competence (SC)</td>
<td>16.75</td>
<td>2.63</td>
<td>17.09</td>
</tr>
<tr>
<td>Empathy (E)</td>
<td>19.25</td>
<td>2.50</td>
<td>22.00</td>
</tr>
<tr>
<td>Total</td>
<td>17.25</td>
<td>2.06</td>
<td>19.27</td>
</tr>
</tbody>
</table>

*Note.* Increased scores indicate improvement.

*Figure C.1.* Bella’s SEARS-P scores during baseline, intervention, and follow-up phases (increased scores indicate improvement).

Bella’s mother completed a SEARS-P each week that generated one score for each of the identified constructs. I separately evaluated each construct by assessing the
level, trend, variability, immediacy of effect, and overlapping data. Additionally, I calculated an effect size using the NAP statistic.

Self-Regulation/Responsibility

Figure C.2 presents the data levels and trend for Self-Regulation/Responsibility across phases of the study. Level analysis of graph indicated an increase from a mean of 22.75 in the baseline phase to 25.45 in the treatment phase followed by another increase to 26.00 in the follow-up phase. Trend analysis revealed an upward trend across the baseline and treatment phases of the study with a large effect size ($r = .52$, $R^2 = .27$), indicating a large relationship between play therapy and Bella’s increased ability to self-regulate. Analysis of variability between conditions revealed moderate variability between phases, with standard deviations (SD) of 1.71 in the baseline phase, 2.09 in the intervention phase, and 3.61 in the follow-up phase. The increase was not immediate, as the data did not visibly increase until the fourth data point of the intervention phase. Additionally, there was overlapping data between these two phases. The mean of the last three data points in the baseline ($M = 22.0$) was similar to the first three data points in the intervention phase ($M = 22.33$).

In addition to visual analysis, I calculated the NAP statistic to examine the degree of the treatment’s effectiveness. I paired each data point in the baseline phase with each data point in the treatment phase, totaling 52 pairs. The overlap sum was 9, when subtracted from the total number of possible pairs left 43 pairs. Therefore, $NAP = 43/52 = .83$, indicating a medium treatment effect.
Figure C.2. Bella’s self-regulation/responsibility scores across all phases (increased scores indicate improvement).

Social Competence

Figure C.3 illustrates the levels and trend for Social Competence across phases of the study. Level analysis of the graph revealed a mean increase from 16.75 in the baseline phase to 17.09 in the treatment phase and then a slight decrease to 17.00 in the follow-up phase. Trend analysis indicated an upward trend across the baseline and treatment phases of the study with a medium effect size ($r = .47$, $R^2 = .22$), indicating a moderate relationship between play therapy and Bella’s social competence. Analysis of variability between conditions demonstrated low variability with $SD = 2.63$ in the baseline phase, $SD = 2.66$ in the intervention phase, and $SD = 2.00$ in the follow-up phase. The increase was not immediate, as the data did not visibly increase until the fifth data point of the intervention phase. The data also demonstrated an immediate decrease upon removal of the intervention at the beginning of the follow-up phase.
When assessing overlapping data, the mean of the last three data points of the baseline phase \((M = 16.0)\) was higher than the mean of the first three data points of the intervention phase \((M = 14.67)\), indicating minimal overlap.

*Figure C.3.* Bella’s social competence scores across all phases (increased scores indicate improvement).

To calculate the effect size for play therapy and social competence, I used the NAP statistic and paired data point in the baseline phase with each data point in the treatment phase. This created 52 total pairs. The overlap sum was 23.5, which was subtracted from the total pairs, leaving 28.5 pairs. Hence, \(NAP = \frac{28.5}{53} = .55\), indicating a weak treatment effect.

**Empathy**

*Figure C.4* graphically displays the data levels and trend for Empathy across phases of this study. Level analysis of the graph demonstrated a mean increase from 19.25 in the baseline phase to 22.0 in the intervention phase and then a decrease to
20.00 in the follow-up phase. Trend analysis displayed an upward trend across the baseline and intervention phases of the study with a large effect size ($r = .50$, $R^2 = .25$), indicating a large relationship between play therapy and Bella’s increased empathy scores. Analysis of variability revealed low variability among phases with $SD = 2.50$ in the baseline phase, $SD = 2.20$ in the intervention phase, and $SD = 1.73$ in the follow-up phase. Data revealed an immediate increase upon introduction of play therapy in the intervention phase as well as an immediate decrease upon removal of play therapy in the follow-up phase. There was no overlapping data between phases. The mean of the last three data points in the baseline phase ($M = 18.0$) was well below the first three data points in the intervention phase ($M = 20.0$).

![Figure C.4](image-url) Bella’s empathy scores across all phases (increased scores indicate improvement).

To further examine the degree of the treatment effectiveness, I calculated the NAP statistic. I paired each data point in the baseline phase with each data point in the
intervention phase, totaling 52 pairs. The overall sum of overlap was 11, when
subtracted from the total pairs left 41 pairs. Thus, NAP = 41/52 = .79, indicating a
medium treatment effect

Total

Figure C.5 presents the data levels and trend for Total across phases of the
study. Level analysis of this graph revealed a mean increase from 17.25 in the baseline
phase to 19.27 in the treatment phase and then another slight increase to 19.33 in the
follow-up phase. Trend analysis revealed an upward trend across the baseline and
intervention phases with a large effect size ($r = .56$, $R^2 = .31$), indicating a large
relationship between play therapy and Bella’s Total scores. Analysis of variability among
phases demonstrated low variability with $SD = 2.06$ in the baseline phase, $SD = 2.20$ in
the intervention phase, and $SD = 1.41$ in the follow-up phase. The increase was not
immediate, as the data did not visibly increase until the fourth data point in the
intervention phase. The data revealed an immediate decrease in the follow-up phase as
the data visibly decreased with the first data point. Additionally, there was overlapping
data between the first two phases, as the mean of the last three data points in the
baseline phase ($M = 16.3$) was similar to the first three data points in the intervention
phase ($M = 16.0$).

To examine the effectiveness of play therapy on Bella’s total social-emotional
assets, I calculated the effect size using the NAP statistic. I paired each data point in the
baseline phase with each data point in the intervention phase, totaling 52 pairs. The
sum of overlap was 14.5, when subtracted from the total number of possible pairs left
37.5. Hence, NAP = 37.5/52 = .72, indicating a medium treatment effect.
Figure C.5. Bella’s total scores across all phases (increased scores indicate improvement).

Follow-Up Parent Interview

After completion of the study, Bella’ mother participated in a follow-up parent interview. She reported that Bella was making efforts to communicate more frequently with her picture book as well as using hand gestures and trying to verbalize words. She also reported that Bella’s behavior was improved and that she is interacting well with other kids at school. According to her mother, Bella threw approximately 10 tantrums per day yet her mother reported one or two tantrums per day at the conclusion of the study. Bella’s mother was unsure about any changes in Bella’s ability to relate to other’s situations or feelings, but did comment that she saw Bella attempt to interact and communicate with her brother. Overall, Bella’s mother was satisfied with Bella’s participation in the study and thought it was helpful for Bella to spend time with someone who tried to understand her and communicate with her.
Participant 2: Ethan

Ethan participated in 6 weeks of a non-intervention baseline phase, 8 weeks of intervention phase that included 14 play therapy sessions, and 3 weeks of a non-intervention follow-up phase. Table C.2 displays the means and standard deviations for each subscale in each phase of the study. All means increased from the baseline phase to the intervention phase and then increased again during the follow-up phase Figure C.6 is a graphical illustration of all data collected for Ethan.

Ethan’s mother completed a SEARS-P each week for the duration of the study that produced scores for each of the identified constructs. I separately evaluated each construct by assessing the level, trend, variability, immediacy of effect, and overlapping data. Additionally, I calculated an effect size using the NAP statistic to further evaluate the treatment’s effectiveness.

Table C.2

Means and Standard Deviations for Ethan’s SEARS-P Scores

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Self-Regulation/ Responsibility (SR/R)</td>
<td>23.50</td>
<td>1.52</td>
<td>26.25</td>
</tr>
<tr>
<td>Social Competence (SC)</td>
<td>25.50</td>
<td>3.08</td>
<td>27.88</td>
</tr>
<tr>
<td>Empathy (E)</td>
<td>19.33</td>
<td>2.16</td>
<td>22.13</td>
</tr>
<tr>
<td>Total</td>
<td>20.17</td>
<td>1.60</td>
<td>22.88</td>
</tr>
</tbody>
</table>

Note. Increased scores indicate improvement.
Figure C.6. Ethan’s SEARS-P scores during baseline, intervention, and follow-up phases (increased scores indicate improvement).

Self-Regulation/Responsibility

Figure C.7 portrays the data levels and trend for Self-Regulation/Responsibility across phases of the study. Level analysis revealed a mean increase from 23.50 in the baseline phase to 26.25 in the intervention phase followed by another increase to 27.0 in the follow-up phase. Trend analysis across the baseline and intervention phases indicated an upward trend with a large effect size ($r = .72$, $R^2 = .52$), indicating a substantial relationship between play therapy and Ethan’s ability to self-regulate. Analysis of variability revealed moderate variability between phases with $SD = 1.52$ in the baseline phase, $SD = 1.91$ in the intervention phase, and $SD = 0.0$ follow-up phases. The treatment effect was close to immediate, as the data visibly increased starting with the second data point in the intervention phase. There was minimal overlap of data. The mean of the last three data points in the baseline phase ($M = 23.67$) was
two points different than the mean of the first three data points in the intervention phase ($M = 25.67$).

![Figure C.7](image)

Figure C.7. Ethan’s self-regulation/responsibility scores across all phases (increased scores indicate improvement).

In addition to visual analysis, I calculated the effect size for play therapy and self-regulation/responsibility using the NAP statistic. First, I paired each data point in the baseline phase with each data point in the treatment phase, totaling 48 pairs. The overlap sum was 6, when subtracted from the total number of possible pairs left 42 pairs. Therefore, NAP = $42/48 = .88$, indicating a medium treatment effect.

Social Competence

Figure C.8 illustrates the data levels and trend of Social Competence across phases of the study. Level analysis indicated a mean increase across all phases of the study, from 25.50 in the baseline phase to 27.88 in the intervention phase to 28.33 in the follow-up phase. Trend analysis across the baseline and intervention phases

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displayed an upward trend with a medium effect size \( r = .38, R^2 = .14 \), indicating a moderate relationship between play therapy and social competence. Analysis of variability indicated moderate variability between phases with \( SD = 3.08 \) in the baseline phase, \( SD = 1.64 \) in the intervention phase, and \( SD = 2.31 \) in the follow-up phase. The effect was immediate, as the data visibly increased with the first data point in the intervention phase and visibly decreased with the second data point in the follow-up phase. There was no overlapping data between the baseline and intervention phases. The mean of the last three data points in the baseline phase \( (M = 24.0) \) was considerably lower than the average of the first three data points in the intervention phase \( (M = 27.67) \).

Figure C.8. Ethan’s social competence scores across all phases (increased scores indicate improvement).

In addition to visual analysis, I used the NAP statistic to calculate the degree of the treatment’s effectiveness for social competence. I paired each data point in the
baseline phase with each data point in the treatment phase, totaling 48 pairs. The overlap sum equaled 8, when subtracted from the total number of possible pairs left 40 pairs. Hence, NAP = 40/48 = .83, indicating a medium treatment effect.

Empathy

Figure C.9 displays data levels and trend for Empathy across phases of the study. Level analysis revealed a continual increase in means from 19.33 to 22.13 to 25.67 in the baseline, intervention, and follow-up phases, respectively. Trend analysis across the baseline and intervention phases revealed an upward trend with a large effect size \( r = .51, R^2 = .26 \), suggesting a substantial relationship between play therapy and Ethan’s level of empathy. Analysis of variability indicated low variability between phases with \( SD = 2.16 \) in the baseline phase, \( SD = 2.75 \) in the intervention phase, and \( SD = 2.52 \) in the follow-up phase. The treatment effect was nearly immediate, as the data visibly increased with the second data point in the intervention phase. The data also demonstrated an immediate increase in the follow-up phase with the first data point. There was almost no overlap of data between the baseline and treatment phases, as the mean of the last three data points in the baseline phase \( (M = 19.67) \) was markedly lower than the mean of the first three data points in the intervention phase \( (M = 22.33) \).

To further examine the degree of the intervention’s effectiveness, I calculated the effect size for play therapy and empathy using the NAP statistic. First, I paired each data point in the baseline phase with each data point in the intervention phase, totaling 48 possible pairs. The overlap sum was 10.5, when subtracted from the total number of
possible pairs left 37.5 pairs. Thus, NAP = 37.5/48 = .78, indicating a medium treatment effect.

Figure C.9. Ethan's empathy across all phases (increased scores indicate improvement).

Total

Figure C.10 displays the data levels and trend for Total across phases of the study. Level analysis revealed a continual increase in means across phases from 20.17 in the baseline phase to 22.88 in the intervention phase to 24.67 in the follow-up phase. Trend analysis across the baseline and intervention phases denoted an upward trend with a large effect size ($r = .66$, $R^2 = .44$), indicating a substantial relationship between play therapy and Ethan’s total social-emotional assets and resilience. Analysis of variability revealed low variability between phases with $SD = 1.60$ in the baseline phase, $SD = 2.03$ in the intervention phase, and $SD = 1.15$ in the follow-up phase. The effect was nearly immediate as the data visibly increased with the second data point in the
intervention phase and visibly decreased with the second data point in the follow-up phase. There was no overlapping data between the last three data points of the baseline phase \((M = 20.0)\) and the first three data points in the intervention phase \((M = 22.33)\).

![Graph showing SEARS-P scores over time]

**Figure C.10.** Ethan’s total across all phases (increased scores indicate improvement).

Additionally, I calculated the effect size for play therapy and total social-emotional assets using the NAP statistic by pairing each data point in the baseline phase with each data point in the intervention phase. This produced a total of 48 possible pairs. The overlap sum for Total was 6, when subtracted from the total number of possible pairs left 42 pairs. Hence, \(NAP = \frac{42}{48} = .88\), indicating a medium treatment effect.

**Follow-Up Parent Interview**

Upon completion of the study, Ethan’s parents participated in a follow-up interview. They explained that Ethan experienced some changes in his routine over the course of the study, including spring break and Ethan’s mother being home less often at
night for his bedtime routine due to her taking care of an ill family member. Ethan’s parents reported increased affection and initiation of interaction from Ethan at home as well as improved efforts to communicate. They described him as wanting to cuddle on the couch with them and making requests to read together and involve them in activities of interest to him. They reported Ethan’s increased ability to remain under control when frustrated. Overall, Ethan’s parents reported seeing some improvements in Ethan’s behavior but were unsure whether or not it was attributed to play therapy due to their lack of understanding of treatment goals while the study was underway.

Participant 3: Rachel

Rachel participated in 7 weeks of a non-intervention baseline phase, 6 weeks of an intervention phase that included 12 play therapy sessions, and 3 weeks of a non-intervention follow-up phase. Table C.3 presents the means and standard deviations for each subscale in each phase of the study. Means continually increased across phases for all subscales with the exception of Self-Regulation/Responsibility, which slightly decreased. Figure C.11 graphically displays all data collected for Rachel throughout the study.

Rachel’s mother completed a SEARS-P once per week for the durations of the study. Each SEARS-P generated scores for each of the identified constructs. I individually examined each construct assessing the level, trend, variability, immediacy of effect, and overlapping data. Additionally, I calculated an effect size using the NAP statistic.
Table C.3

*Means and Standard Deviations for Rachel’s SEARS-P Scores*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Self-Regulation/Responsibility (SR/R)</td>
<td>31.43</td>
<td>1.40</td>
<td>31.33</td>
</tr>
<tr>
<td>Social Competence (SC)</td>
<td>24.86</td>
<td>1.86</td>
<td>25.83</td>
</tr>
<tr>
<td>Empathy (E)</td>
<td>24.00</td>
<td>3.27</td>
<td>28.00</td>
</tr>
<tr>
<td>Total</td>
<td>25.71</td>
<td>0.49</td>
<td>26.67</td>
</tr>
</tbody>
</table>

*Note.* Increased scores indicate improvement.

*Figure C.11.* Rachel’s SEARS-P scores during baseline, intervention, and follow-up phases (increased scores indicate improvement).

Self-Regulation/Responsibility

*Figure C.12* illustrates the data levels and trend of Self-Regulation/Responsibility across phases of the study. Level analysis indicated almost equal means of 31.43 in the
baseline phase and 31.33 in the intervention phase. The mean then increased to 33.00 in the follow-up phase. Trend analysis of the baseline and intervention phases revealed a slight downward trend with a small effect size ($r = .16, R^2 = .03$), signifying a minimal relationship between play therapy and Rachel’s ability to self-regulate. Analysis of variability revealed low variability between phases with $SD = 1.40$ in the baseline phase, $SD = 0.52$ in the intervention phase, and $SD = 1.00$ in the follow-up phase. The effect was immediate with visible increases upon initiation of play therapy in the intervention phase and removal of play therapy in the follow-up phase. There was overlapping data between the baseline and intervention phases, as the mean of the last three data points in the baseline phase ($M = 31.67$) was similar to the first three data points in the intervention phase ($M = 31.33$).

![Figure C.12](image-url) Rachel's self-regulation/responsibility scores across all phases (increased scores indicate improvement).
In addition to visual analysis, I calculated the effect size for play therapy and self-regulation/responsibility using the NAP statistic to further evaluate the degree of treatment effectiveness. First, I paired all data points in the baseline phase with all data points in the intervention phase, totally 42 pairs. The overlap sum was 23, when subtracted from the total possible number of pairs, left 19 pairs. Therefore, NAP = 19/42 = .45, indicating a weak treatment effect.

Social Competence

Figure C.13 portrays the data levels and mean for Social Competence throughout phases of the study. Level analysis showed a mean increase from 24.86 in the baseline phase to 25.83 in the intervention phase, followed by a larger increase to 33.33 in the follow-up phase. Trend analysis across the baseline and intervention phases displayed an upward trend with a medium effect ($r = .36$, $R^2 = .13$), indicating a moderate relationship between the intervention and Rachel’s increased social competence. Analysis of variability indicated high variability between phases, as the $SD = 1.86$ in baseline phase, $SD = 5.64$ in the intervention phase, and $SD = 0.58$ in the follow-up phase. There was an immediate treatment effect as the data visibly increased with the first data point in the intervention phase but then decreased for the next four data points before increasing again. In the follow-up phase, the effect was immediate, as the data visibly decreased with the first data point. There was minimal overlap of data between phases with the mean of the last three data points in the baseline phase ($M = 25.67$) higher than the first three data points in the intervention phase ($M = 23.67$).
Along with visual analysis, I calculated the effect size for play therapy and social competence using the NAP statistic by pairing each data point in the baseline phase with each data point in the intervention phase. This produced 42 total possible pairs. The overlap sum was 22, when subtracted from the total number of possible pairs, left 20 pairs. Hence, NAP = 20/42 = .48, indicating a weak treatment effect.

Empathy

Figure C.14 graphically illustrates the data levels and trend for Empathy across phases of the study. Level analysis indicated a continual increase of the mean from 24.0 in the baseline phase to 28.0 in the intervention phase to 32.67 in the follow-up phase. Trend analysis across the baseline and intervention phases revealed an upward trend with a large effect size ($r = .50$, $R^2 = .25$), indicating a substantial relationship between play therapy and Rachel’s empathy. Analysis of variability demonstrated...
moderate variability between phases with $SD = 3.27$ in the baseline phase, $SD = 4.00$ in the intervention phase, and $SD = 2.89$ in the follow-up phase. The treatment effect appeared immediate with a visible increase with the first data point in the intervention phase and then a visible decrease with the first data point after the removal of play therapy in the follow-up phase. There was no data overlap between the baseline and intervention phases, as the mean of the last three data points in the baseline phase ($M = 21.67$) was markedly different than the first three data points in the intervention phase ($M = 26.0$).

Figure C.14. Rachel’s empathy scores across all phases (increased scores indicate improvement).

After conducting visual analysis, I used the NAP statistic to calculate the effect size for play therapy and empathy. I paired each data point in the baseline phase with each data point in the intervention. This created a total of 42 possible pairs. The overlap
sum was 11, when subtracted from the total number of possible pairs left 31 pairs. Hence, NAP = 31/42 = .74, indicating a medium treatment effect.

Total

Figure C.15 displays the data levels and trend for Total across phases of the study. Level analysis revealed a continual increase of the mean from 25.71 in the baseline phase to 26.67 in the intervention phase and 31.00 in the follow-up phase. Trend analysis across the baseline and intervention phases exposed an upward trend with a medium effect size ($r = .35, R^2 = .12$), indicating play therapy has a large relationship with Rachel’s total social-emotional assets. Analysis of variability revealed moderate variability between phases with $SD = 0.49$ in the baseline phase, $SD = 2.88$ in the intervention phase, and $SD = 1.00$ in the follow-up phase. The effect appeared immediate as the data visibly increased with the first data point in the intervention phase and visibly decreased with the first data point in the follow-up phase. There was overlap of data between phases. The mean of the last three data points in the baseline phase was the same as the first three points in the intervention phase ($M = 25.67$).

Additionally, I calculated the effect size for play therapy and total social-emotional assets using the NAP statistic. First, I paired each data point in the baseline phase with each data point in the intervention phase, totaling 42 pairs. The sum of overlap was 19, when subtracted from the total number of possible pairs, left 23 pairs. Thus, NAP = 23/42 = .55, indicating a weak treatment effect.
Follow-Up Parent Interview

Upon conclusion of the study, Rachel’s mother participated in a follow-up parent interview. She reported noticing specific changes within Rachel during her last three weeks of participation in play therapy. Rachel's mother noticed Rachel interacting more with her and her brother, wanting to talk and interact more with them. She also reported that Rachel did extremely well in her speech therapy during the time of the study and made more progress than she ever had before. Rachel’s mother noticed that Rachel made efforts to think before responding; giving an example of a time Rachel stated, “let me think about it” when asked a question. Rachel mother explained that this was progress, as she had never said anything like that before. Overall, Rachel’s mother reported that play therapy was helpful and wanted her to continue participation in play therapy.

Figure C.15. Rachel's total scores across all phases (increased scores indicate improvement).
Participant 4: Ian

Ian participated in 3 weeks of a non-intervention phase baseline phase, 13 weeks of intervention phase that included 21 play therapy sessions, and 3 weeks of a non-intervention follow-up phase. Table C.4 presents the means and standard deviations for each subscale within each phase of the study. Each subscale displayed a different pattern across phases and is described in detail in the sections below. Figure C.16 illustrates all data collected for Ian throughout this study.

Ian’s mother completed a SEARS-P each week for the duration of the study that generated scores for each of the identified constructs. I separately assessed each construct by examining the level, trend, variability, immediacy of effect, and overlap of data as well as calculating the effect size using the NAP statistic.

Table C.4

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Self-Regulation/ Responsibility (SR/R)</td>
<td>34.00</td>
<td>2.65</td>
<td>31.77</td>
</tr>
<tr>
<td>Social Competence (SC)</td>
<td>27.67</td>
<td>1.15</td>
<td>28.85</td>
</tr>
<tr>
<td>Empathy (E)</td>
<td>13.00</td>
<td>0.00</td>
<td>13.00</td>
</tr>
<tr>
<td>Total</td>
<td>26.00</td>
<td>1.73</td>
<td>24.77</td>
</tr>
</tbody>
</table>

*Note.* Increased scores indicate improvement.
Figure C.16. Ian’s SEARS-P scores during baseline, intervention, and follow-up phases (increased scores indicate improvement).

Self-Regulation/Responsibility

Figure C.17 displays the data levels and trend for Self-Regulation/Responsibility across phases of the study. Level analysis indicated a mean decrease from 34.0 in the baseline phase to 31.77 in the intervention phase. The means remained close to constant from the intervention phase ($M = 31.77$) to the follow-up phase ($M = 32.0$). Trend analysis revealed a downward trend with a large effect size ($r = .61$, $R^2 = .38$). The trend line was largely affected by the downward trend in the baseline phase, as scores became more stabilized in the intervention phase. Analysis of variability indicated high variability between phases with $SD = 2.65$ in the baseline phase, $SD = 0.60$ in the intervention phase, and $SD = 0.0$ in the follow-up phase. Data became visibly stable immediately after starting the intervention phase and also remained constant in the follow-up phase. There was minimal overlap of data, as the mean of the
last three data points in the intervention phase \((M = 34.0)\) was two points different than the mean of the first three data points of the intervention phase \((M = 32.0)\).

**Figure C.17.** Ian’s self-regulation/responsibility scores across all phases (increased scores indicate improvement).

In addition to visual analysis, I calculated the effect size using the NAP statistic by pairing each data point in the baseline phase with each data point in the intervention phase. This produced a total of 39 possible pairs. The overlap sum for Self-Regulation/Responsibility was 33.5, when subtracted from the total number of possible pairs left 5.5 pairs. Thus, \(NAP = 5.5/39 = .14\), indicating a weak treatment effect.

**Social Competence**

Figure C.18 portrays the data levels and trend for Social Competence throughout phases of the study. Level analysis revealed a mean increase from 27.67 in the baseline phase to 28.85 in the intervention phase followed by a mean decrease to 26.00 in the follow-up phase. Trend analysis across the baseline and intervention phases
revealed a downward trend with a small effect size \( (r = .17, R^2 = .03) \). This trend was influenced by substantial increases in scores in the beginning of the intervention phase followed by a decrease in scores about halfway through the phase. There was moderate variability between phases with \( SD = 1.15 \) in the baseline phase, \( SD = 3.13 \) in the intervention phase, and \( SD = 1.73 \) in the follow-up phase. Data visibly increased starting with the third data point in the intervention phase and then visibly decreased with the third data point in the follow-up phase. There was minimal overlap of data between the last three data points of the baseline phase \( (M = 27.67) \) and the first three data points of the intervention phase \( (M = 28.67) \).

![SEARS-P scores graph with weeks 1-19, baseline, intervention, follow-up phases, and statistics: M = 27.67, r = .17, R^2 = .02911, M = 29.18, NAP = .54, M = 26.00.](image)

*Figure C.18. Ian’s social competence scores across all phases (increased scores indicate improvement).*

Using the NAP statistic, I calculated the effect size to further evaluate the effectiveness of the intervention. I paired each data point in the baseline phase with each data point in the intervention phase, totaling 39 possible pairs. The overlap sum
was 18, when subtracted from the total number of possible pairs left 21 pairs. Therefore, NAP = 21/39 = .54, indicating a weak treatment effect.

Empathy

Figure C.19 represents the data levels and trend for Empathy across phases of the study. Analysis of level, trend, and variability revealed a constant mean of 13.0 throughout all phases with no variability and no directional trend. Due to the lack of change in data, there was no immediacy of effect and all data overlapped. I used the NAP statistic to calculate an effect size, pairing each data point in the baseline phase with each data point in the intervention phase. The overlap sum was 19.5 due to each pairing of equal numbers receiving half a point. When the sum of overlap was subtracted from the total number of possible pairs, it left 19.5 pairs. Therefore, NAP = 19.5/39 = .50, indicating a weak treatment effect.

Figure C.19. Ian’s empathy scores across all phases (increased scores indicate improvement).
Total

Figure C.20 depicts the data levels and trend of Total across phases of the study. Level analysis revealed a decrease in means across all phases from 26.00 in the baseline phase to 24.77 in the intervention phase to 24.33 in the follow-up phase. Trend analysis produced a downward trend ($r = .51$, $R^2 = .26$) that was influenced by the visible data increase starting with the second data point the intervention phase followed by a decrease approximately halfway through the phase. Analysis of variability revealed low variability with $SD = 1.73$ in the baseline phase, $SD = 1.09$ in the intervention phase, and $SD = 1.15$ in the follow-up phase. The data immediately decreased at the beginning of the intervention phase, but increased with the third data point in that phase. There was minimal overlapping data between the last three data points in the baseline phase ($M = 26.0$) and the first three data points in the intervention phase ($M = 24.67$).

![Graph showing data levels and trend of Total across phases](image)

*Figure C.20. Ian’s total scores across all phases (increased scores indicate improvement).*
After conducting visual analysis, I calculated the effect size using the NAP statistic. First, I paired each data point in the baseline phase with each data point in the intervention phase, totaling 39 possible pairs. The overlapping sum was 27, when subtracted from the total number of pairs left 12 pairs. Hence, \( \text{NAP} = \frac{12}{39} = .31 \), indicating a weak treatment effect.

Follow-Up Parent Interview

Ian’s mother participated in a follow-up interview after the conclusion of the study. She explained that Ian demonstrated a significant change in behavior approximately halfway through the study. She explained that Ian had multiple fits on a daily basis that were unusual for him, refused to get in the bathtub, which was previously his favorite time of day, and had trouble sleeping at night. Ian’s mother was unsure of the exact cause of this change in behavior but thought it was likely sensory related. According to Ian’s mother, Ian’s stopped refusing baths and started sleeping again at night during the last week or two of the intervention phase. Due to Ian’s general level of low functioning and inability to communicate, Ian’s mother reported having difficulty assessing any specific change in Ian’s level of self-awareness or ability to relate to others or think before acting. She identified having difficulty knowing what Ian thinks, therefore, feeling unsure of how to answer most of the questions in the interview. Ian’s mother identified that Ian makes slow progress over time but could not attribute his progress to anything specific. Overall, Ian’s mother was happy that Ian participated in play therapy and found it beneficial for him to form a relationship with the therapist and have repetitive, positive interactional experiences through the process.
Participant 5: Hunter

Hunter’s participated in 4 weeks of a non-intervention baseline phase, 12 weeks of intervention phase where he participated in 20 play therapy sessions, and 3 weeks of non-intervention follow-up phase. Table C.5 presents the means and standard deviations for each subscale in each phase of the study. Two subscales, Empathy and Total, had a mean that decreased from baseline to intervention and then slightly increased in the follow-up phase. Self-regulation continually decreased throughout all phases and Social Competence continually increased throughout the entire study. Figure C.21 portrays a graphical representation of all data collected for Hunter.

Hunter’s mother completed a SEARS-P on a weekly basis that generated a separate score for each of the four identified constructs. I separately evaluated each construct by assessing the level, trend, variability, immediacy of effect, and overlapping data. Additionally, I calculated an effect size using the NAP statistic to further evaluate the effectiveness of treatment.

Table C.5

*Means and Standard Deviations for Hunter’s SEARS-P Scores*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Self-Regulation/ Responsibility (SR/R)</td>
<td>20.25</td>
<td>1.50</td>
<td>19.27</td>
</tr>
<tr>
<td>Social Competence (SC)</td>
<td>19.75</td>
<td>2.22</td>
<td>21.18</td>
</tr>
<tr>
<td>Empathy (E)</td>
<td>29.75</td>
<td>4.79</td>
<td>25.91</td>
</tr>
<tr>
<td>Total</td>
<td>18.50</td>
<td>1.73</td>
<td>17.55</td>
</tr>
</tbody>
</table>

*Note.* Increased scores indicate improvement.
Figure C.21. Hunter’s SEARS-P scores during baseline, intervention, and follow-up phases (increased scores indicate improvement).

Self-Regulation/Responsibility

Figure C.22 is a graphical illustration of the levels and trend for Self-Regulation/Responsibility across phases of the study. Level analysis of the graph indicated a decreased mean from 20.25 in the baseline phase to 19.27 in the intervention phase, followed by another decreased mean of 18.33 in the follow-up phase. Trend analysis revealed a downward trend across the baseline and treatment phases of the study with a large effect \((r = .50, R^2 = .25)\). Analysis of variability between conditions revealed moderate variability with \(SD = 1.50\) in the baseline phase, \(SD = 1.10\) in the intervention phase, and \(SD = 0.58\) in the follow-up phase. Although the trend is downward, the data visibly increased with the third data point in the intervention phase. Additionally, there was overlapping data points between these two phases, as the mean of the last three data points in the baseline phase \((M = 19.67)\) was similar to the first three data points in the intervention phase \((M = 19.33)\).
Alongside visual analysis, I calculated the effect size using the NAP statistic by pairing each data point in the baseline with each data point in the treatment phase, totaling 44 pairs. The overlap sum was 31, when subtracted from the total number of possible pairs, left 13 pairs. Hence, NAP = 13/44 = .30, indicating a weak treatment effect.

Social Competence

Figure C.23 graphical portrays the data levels and trend for Social Competence across phases of the study. Level analysis revealed an increased mean of 19.75 in the baseline phase to 21.18 in the intervention phase, followed by an increase to 22.33 in the follow-up phase. Trend analysis revealed an upward trend across the baseline and treatment phases of the study with a medium effect size \( r = .39, R^2 = .15 \), indicating a moderate relationship between play therapy and Hunter’s increased social competence. Analysis of variability between conditions displayed low variability between phases with...
SD = 2.22 in the baseline phase, SD = 1.40 in the follow-up phase, and SD = 1.53 in the follow-up phase. The treatment effect was fairly immediate, as the data visibly increased starting with the second data point in the intervention phase. Additionally, there was overlapping data between phases with more overlap between the first two phases. The mean of the last three data points of the baseline phase (M = 20.67) was similar to the mean of the first three data points in the intervention phase (M = 20.33).

![Figure C.23. Hunter’s social competence across all phases (increased scores indicate improvement).](image)

To better understand the degree of the effectiveness of play therapy, I calculated the effect size using the NAP statistic. First, I paired each data point in the baseline phase with each data point in the treatment phase, making 44 total possible pairs. The overlap sum was 25, when subtracted from the total number of possible pairs, left 19 pairs. Therefore, NAP = 19/44 = .43, indicating a weak treatment effect.

Empathy
Figure C.24 displays the levels and trend for Empathy across phases of the study. Level analysis revealed a decrease in the mean from 29.75 in the baseline phase to 25.91 in the intervention phase, followed by an increase to 26.67 in the follow-up phase. Trend analysis across the baseline and intervention phases showed a downward trend with a moderate effect size ($r = .37$, $R^2 = .11$). Analysis of variability indicated high variability between phases with $SD = 4.79$ in the baseline phase, $SD = 2.07$ in the intervention phase, and $SD = 1.15$ in the follow-up phase. The data visibly decreased starting with the second data point of the intervention phase, although this was consistent with the downward trend of the data in the baseline phase. Additionally, there was little overlap of data between the first two phases, as the mean of the last three data points in the baseline phase ($M = 27.67$) was similar to the first three points in the intervention phase ($M = 24.0$).

Figure C.24. Hunter’s empathy scores across all phases (increased scores indicate improvement).
Additionally, I calculated the NAP statistic to examine the degree of treatment effectiveness. I paired each data point in the baseline phase with each data point in the treatment phase, making 44 total possible pairs. The overlap sum was 32, when subtracted from the total number of possible pairs, left 12 pairs. Thus, \( \text{NAP} = \frac{12}{44} = .27 \), indicating a weak treatment effect.

Figure C.25 illustrates the levels and trend for Total across phases of the study. Level analysis indicated a decrease in the mean from the baseline phase \((M = 18.50)\) to the intervention phase \((M = 17.55)\) and then a slight increase in the follow-up phase \((M = 17.67)\). Trend analysis across the baseline and intervention phases depicted a downward trend with a medium effect size \((r = .38, R^2 = .14)\). Analysis of the variability revealed moderate variability between phases with \(SD = 1.73\) of the baseline phase, \(SD = 0.82\) in the intervention phase, and \(SD = 0.58\) in the follow-up phase. The effect was not immediate, as the data did not visibly increase until the fourth data point in the intervention phase. Additionally, there was overlapping data between phases, with more overlap between the intervention and follow-up phases. The mean of the last three data points in the baseline phase \((M = 18.0)\) was similar to the first three data points in the intervention phase \((M = 17.0)\).

I calculated the NAP statistic to gain an enhanced understanding of the treatment’s effect by pairing each data point in the baseline phase with each data point in the intervention phase. This produced a total of 44 possible pairs. The overlap sum was 29, when subtracted from the total number of possible pairs left 15 pairs. Thus, \( \text{NAP} = \frac{15}{44} = .34 \), indicating a weak treatment effect.
Figure C.25. Hunter’s total scores across all phases (increased scores indicate improvement).

Follow-Up Parent Interview

Hunter’s mother participated in a follow-up interview upon completion of the study and reported many positive changes in Hunter. She identified that Hunter started having better days at school within a few weeks of starting play therapy, handling transitions better and remaining calmer throughout the day. Hunter’s mother reported that he is more involved with other children at his church and participates in group activities. She provided examples of times he verbalized his needs to his parents, reporting that his communication was improved. She also gave examples of time that Hunter was able to remain calm in situations that were unfamiliar, which were previously difficult for him. Overall, Hunter’s mother was highly satisfied with his progress and stated that he grew leaps and bounds. She reported that he gets good reports from school, is significantly more compliant, and interacts with peers more often.
Summary of Results

Table C.6 provides a summary of results for all participants in this study. Three participants demonstrated results that indicated play therapy was a beneficial intervention and two participants had mixed results. Mean scores for Social Competence improved for all participants during the intervention phase. Although slopes were negative on some subscales, effect sizes indicated there was some positive effect. The NAP calculation involved individual pairings between each data point in the baseline phase and each data point in the intervention phase. This results in a score that represents the probability that a data point in the intervention phase will exceed a data point in the baseline phase (Parker & Vannest, 2009).

Table C.6

Summary of All Participants’ Results

<table>
<thead>
<tr>
<th>Participant</th>
<th>SR/R</th>
<th>SC</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bella</td>
<td>Y</td>
<td>Y</td>
<td>.83</td>
</tr>
<tr>
<td>Ethan</td>
<td>Y</td>
<td>Y</td>
<td>.88</td>
</tr>
<tr>
<td>Rachel</td>
<td>N</td>
<td>Y</td>
<td>.45</td>
</tr>
<tr>
<td>Ian</td>
<td>N</td>
<td>N</td>
<td>.14</td>
</tr>
<tr>
<td>Hunter</td>
<td>N</td>
<td>N</td>
<td>.30</td>
</tr>
</tbody>
</table>

Note. SR/R = Self-Regulation/Responsibility; SC = Social Competence; E = Empathy; NAP = nonoverlap of all pairs; Y = mean was higher than mean of baseline phase, N = mean was lower than mean of baseline phase.

a Improved mean during intervention phase. b Improved mean during follow-up phase.
APPENDIX D

EXTENDED DISCUSSION
The purpose of this study was to explore the impact of child-centered play therapy (CCPT) on the social competence, empathy, and self-regulation of children diagnosed with Autism Spectrum Disorder (ASD). Social competence, empathy, and self-regulation were measured using the Social-Emotional Assets Rating Scale-Parent (SEARS-P; Merrell, 2011). This study utilized a single-case design and data was collected throughout the duration of the study, including baseline, treatment, and follow-up phases.

Results indicated that play therapy was a beneficial intervention for three participants, with mean gains on all three subscales, Self-Regulation/Responsibility, Social Competence, and Empathy. The other two participants responded to the intervention with mixed results. Social competence was the area that appeared most positively impacted by play therapy, as all participants demonstrated improvement during intervention. Among the three participants for which intervention demonstrated effectiveness, the largest gains were made in the area of empathy. Parents of participants reported observing a variety of improvements, including increased self-control and engagement with others. Four of the participants’ parents reported increased interactions with others, two of which specifically identified more interaction with peers. Three parents identified improved self-control, reporting things such as fewer tantrums and a calmer demeanor.

Play Therapy and Social Competence

According to the SEARS (Merrell, 2011), social competence encompasses a child’s comfort level around peers and one’s ability to effectively communicate and maintain friendships with them. Individuals with ASD have persistent deficits in social
communication and social interaction (APA, 2013), making it difficult to attain this social competence. Marsh & Barkley (2003) identified social functioning as the most severe type of impairment in individuals with ASD. Children with ASD typically experience difficulty with peer relationships, expressing emotions, and misunderstanding the social behavior of others. Additionally, children with ASD typically have restricted areas of interest, talking with others about their own interests without recognizing the disinterest of others (Volkmar, Paul, Klin, & Cohen, 2005). As a result, children with ASD can often feel isolated from their peers and experience feelings of loneliness (Locke, Ishijima, Kasari, & London, 2010).

In CCPT, children can develop an increased sense of social competence. They are able to communicate in ways they are most comfortable, including nonverbal communication. This is particularly helpful for children with ASD, as they often struggle with communicating in ways that are understood by others. With the relationship as the central aspect of the intervention (Landreth, 2012; Ray, 2011), children involved in CCPT have the opportunity to experience the play therapist’s attempt to relate to them and understand their unique perspectives of the world. This can be especially powerful for children on the autism spectrum, as they may rarely experience this attempt to relate from others in their environment. Within the therapeutic process, children can develop a sense of safety in the play therapy environment, freeing them to express themselves in ways that are most comfortable and meaningful for them. Through this safety and freedom of expression, children can engage and communicate with the play therapist in their own unique ways and eventually broaden that outward to their home and school environments.
In this study, play therapy was beneficial in improving social competence for all participants, as the means for all participants increased during the intervention phase. This is likely a result of the relational focus of the treatment and each child’s experience of the play therapist’s unconditional positive regard. Each child had the opportunity to feel accepted and understood within this relationship. Although all participants demonstrated improvement in social competence during the play therapy intervention, the effect sizes were mostly weak due to high variability in scores.

Three participants in this study had extremely limited verbal skills and, therefore, frequently communicated nonverbally through eye contact and behavioral gestures. In my role as play therapist for this study, I made several observations regarding the play sessions. For example, one participant became increasingly comfortable throughout the sessions as evidenced by her hugging me, touching my face, and making close eye contact. Another participant demonstrated relational engagement and communication by using gestures to direct what he wanted me to do. He prompted me to lay on the floor with him and then cuddled up next to me while smiling and laughing, demonstrating an increased level of comfort and desire for connection. One participant with some verbal ability initiated engagement by saying a short phrase and then gesturing for me to repeat it. He also said my name numerous times throughout the play therapy process, sometimes several times in one session. This participant’s mother explained that he repetitively uses the names of those he cares about as an attempt to initiate engagement. Through this therapeutic relationship, participants were able to feel cared for, develop an authentic relationship, and communicate with me, enabling them
to develop an increased motivation to interact with others in the world, improving their overall social competence.

**Play Therapy and Empathy**

Empathy, as defined by the SEARS (Merrell, 2011) involves a child’s capacity to understand and relate to the situations and feelings of others. Children with ASD have difficulty empathizing and understanding the situations of others (Baron-Cohen & Wheelwright, 2004; Blacher, Kraemer, & Schalow, 2003; Gillberg, 1992; Wing, 1981). This is partly due to a concept known as mindblindness, which is an impairment related to one’s ability to understand the feelings, intentions, and motivation of others. Often, children with ASD interact or observe another person without fully understanding their experience, creating difficulty in their social interactions and relationships. Loveland (2005) agreed that children might not respond empathetically to others due to a lack of awareness of others’ emotional states. In addition to the awareness factor, she also believed that children with ASD might not know how to empathically respond to others.

Within CCPT, children have the opportunity to experience empathy within the play therapy relationship as well as grow in their ability to empathize with others. The therapeutic relationship serves as an agent of change (Landreth, 2012; Ray, 2011) and empathy is part of that relationship. Rogers (1957) specifically identified empathy as one of the core conditions necessary for change, explaining that the therapist must experience and communicate empathy towards the client and the client must receive the therapist’s communication. Part of the role of the play therapist is to be aware of the child’s feelings and then facilitate self-awareness and self-understanding within the child.
(Axline, 1947). The development of awareness is an important part of empathy development and can theoretically be developed through participation in CCPT.

According to the effect sizes for the subscale of empathy in this study, play therapy was a successful intervention for three participants. For the participant with the lowest effect size, his mother reported that he made great improvements in all areas, including empathy, but this was not reflected in his data. With empathy being a central aspect of the CCPT intervention, it is theoretically consistent to expect that participants make improvements in this area. Three participants demonstrated this improvement. It is important to note that empathy is an internal experience (Baron-Cohen & Wheelwright, 2004) that can be difficult to observe and measure in others, particularly for children who are limited in their ability to verbally communicate.

In this study, participants demonstrated empathy in various ways. One participant heard a child crying in the hallway outside of the playroom and stopped her play to go to the door and listen. After listening at the door, the participant left the playroom and stood by the little girl crying on the floor of the hallway. While the participant was unable to use her words to communicate, her behavior demonstrated her understanding that the little girl was upset and it appeared she wanted to comfort her. This event occurred during two different sessions. Another participant demonstrated empathy during a session as he related to me through humor. The participant pretended he was going to pour sand outside of the sandbox while looking at me and giggling, attempting to relate through humor. As I saw his grin and reflected his desire to be silly, the participant laughed loudly and put the sand back in the sandbox. This interaction demonstrated his awareness of my perception and our mutual empathic understanding.
According to the SEARS (Merrell, 2011), self-regulation involves a child’s self-awareness, metacognition, intrapersonal insight, self-management, direction, ability to accept responsibility, and ability to think before acting. Emotional and behavioral self-regulation is a difficult task for children with ASD for many reasons, including overstimulation and trouble regulating or shifting their attention (Bolick, 2004). Multiple research studies have confirmed that children with ASD have deficits in their abilities to self-regulate (Jahromi, Bryce, & Swanson, 2013; Konstantareas & Stewart, 2006; Samson, Huber, & Gross, 2012). Additionally, children with ASD often process the environment differently from others due to hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment (APA, 2013), frequently causing them to become dysregulated.

CCPT is theoretically aligned with the concept of self-regulation, contributing to the effectiveness of the intervention. One specific objective of CCPT is to provide children with an opportunity to take responsibility and develop feelings of control (Landreth, 2012). Often children with ASD feel a lack of control as they react to the environment and struggle with dysregulation. Within the therapeutic process, children have the opportunity to experience trust and safety, freeing them to express themselves in comfortable and meaningful ways. Once a child feels safe within the play therapy relationship, they have the opportunity to develop an increased ability to regulate their emotions and behaviors. After they are better able to self-regulate in play therapy, they can then start generalizing outward to other environments. Another objective of CCPT is to facilitate the child’s decision-making process (Landreth, 2012). Once children have
the opportunity to experience increased self-control within this safe relationship, they can start making choices and taking responsibility for those choices.

Participants in this study responded with mixed results for the concept of self-regulation. Two participants demonstrated higher means during the intervention phase, indicating improved self-regulation while participating in play therapy. Two of these participants had effect sizes in the moderate range and their effect sizes were the highest of all effect sizes in the study. Hence, for those participants that experienced improvement as a result of the intervention, it was highly successful. This may be due to the visible nature of a child’s self-regulation. When a child with ASD becomes dysregulated, it often escalates to tantrum behavior that is disruptive to the child and others in the environment. When a child is able to control one’s emotions and behaviors, the ability to self-regulate is outwardly apparent to those in the environment. Thus, when caregivers notice a child’s improved ability to self-regulate, it is often a notable and observable change that is more easily reported than an internal characteristic or quality. One participant’s with a shorter intervention phase had similar scores between the baseline and intervention phases and demonstrated an increased mean in the follow-up phase. While scores did not reflect an improvement for one of the participants, the participant’s mother reported vast improvement in the participant’s ability to self-regulate. The other participant whose scores did not reflect an increased mean during intervention was a child who experienced some type of behavioral change halfway through the study, possibly related to sensory concerns.

In this study, many participants demonstrated an increased ability to self-regulate throughout the play therapy intervention. One participant was extremely impulsive and
frequently acted out during the initial intervention phase. She demonstrated tantrum behaviors that included throwing herself on the floor and aggressive behavior towards me, kicking and pulling my hair. As the sessions progressed, the participant demonstrated an improvement in self-control. Her tantrums became increasingly shorter and less aggressive. During one session, she purposely threw herself on the soft beanbag rather than the floor, demonstrating thought before her actions. Another participant appeared impulsive and minimally responsive to limits, particularly regarding pouring sand out of the sand box. As the number of sessions increased, this participant demonstrated increased self-control with the sand, requiring fewer limits from me.

Level of Functioning

Depending on where an individual falls on the autism spectrum, one can demonstrate various levels of impairment in the areas of social communication as well as restricted and repetitive behaviors, interests, or activities (APA, 2013). In play therapy, these abilities affect how a child communicates and builds a relationship with the play therapist. For example, a higher functioning child may be able to use words to communicate thoughts and feelings, may initiate interaction easier, or may engage more frequently with the play therapist. A lower functioning child may take longer to engage with the play therapist and may communicate more through actions as opposed to words. Play therapy meets children at their level of development and allows them to express themselves in ways that are most comfortable (Landreth, 2012). Children also have to ability to choose activities that meet their needs for expression and relation.

In this study, I noticed differences among participants based on their level of functioning. Two of the participants that had the lowest levels of functioning and no
verbal communication appeared slower to warm up. They both engaged in play independently at the start of play therapy, not making much effort to engage with me. As the sessions progressed, they slowly made more eye contact and approached me more frequently, showing a desire to engage and be in relational contact with me. Another participant that was also lower functioning but had minimal verbal abilities demonstrated a similar process in his formation of the therapeutic relationship. At the start of play therapy, he played independently and showed increased interest in me as the sessions progressed. By the end of the play therapy sessions, this participant frequently used my name and prompted me to engage with him in his play. Two of the participants were higher functioning and appeared to engage in play with me at a faster pace. They immediately explored the playroom and displayed more emotions in their play throughout the process. Although they both had speech delays, they were able to engage with me sooner and demonstrated progress at a faster rate. The highest functioning participant in this study demonstrated progress at the fastest pace upon the start of the play therapy intervention phase.

When examining the data in the follow-up phases, it was apparent that the participants could have possibly benefited from extending play therapy treatment for a longer amount of time. Many of the participants demonstrated a decrease in scores, indicating regression, in at least one construct in the follow-up phase. For the two participants with the fewest number of weeks in the treatment phase, scores displayed an increase towards the end of the treatment phase, signifying that play therapy started to have a greater impact. An extended length of treatment would have allowed for the possibility of greater improvement and/or stabilization of data. The three participants
with the longest treatment phases were the lowest functioning individuals within the study, two being nonverbal. Due to their level of functioning, they may have needed more play therapy sessions to build a therapeutic relationship and demonstrate improvement. Hull (2011) identified that children with ASD have difficulty building relationships with others and trusting unfamiliar people; therefore taking longer to building a therapeutic alliance in the beginning of play therapy.

Therapeutic Relationship

CCPT is a relationship-based intervention. In CCPT, the relationship between the child and the play therapist is essential for change and serves as the primary agent of change (Landreth, 2012; Ray, 2011). As the play therapist displays acceptance of the child within the relationship, the child can then begin valuing and accepting oneself. Within this relationship, the child needs to feel safe and develop a feeling of trust for the play therapist. Once this safety is established, the child can express oneself and communicate in whatever way is most comfortable and meaningful. Of particular importance for children with ASD is that the play therapist works to understand and experience the child’s world. Jacobson (2004) identified that the therapeutic alliance is even more important when working with children with ASD given the barriers that have to be overcome.

In this study, I was able to form therapeutic relationships that were meaningful during the play therapy process. Each relationship was unique based upon the characteristics and communication of each participant and grew throughout the therapeutic process. Many participants demonstrated connection by touching my face and looking into my eyes while their faces were close to mine. Due to the participants’
limited abilities to verbally communicate, many communicated through these types of actions, indicating a desire to connect. As the play therapy sessions progressed, these types of gestures and behaviors increased and clients initiated interaction with me more frequently. One participant demonstrated a desire for humor in our relationship. While he had no verbal communication abilities, he demonstrated an increased connection with me through eye contact and laughter. As our relationship grew, he was increasingly silly in his play and laughed with me. He also initiated times of cuddling, wanting to be close to me.

In the follow-up interviews with parents, many parents commented on relationships. Two parents commented on their child’s increased interaction with family members at home, engaging and interacting with them more frequently. One parent specifically commented that her child became more involved with peers in group activities outside of the home. Another parent stated that a beneficial part of the play therapy process was forming a relationship with the play therapist and the positive interactions that were a part of that process.

Parent Receptivity

Parents of the participants in this study were open and receptive to the idea of play therapy. Most parents had little understanding about play therapy prior to participation in the study but were open to learning about it and allowing their child to participate. One parent whose profession involved working with children was knowledgeable about play therapy, believed it to be a helpful intervention for children in general, and reported observing improvements in her child. Three parents specifically requested that their children continue play therapy after completion of the study due to
their perceptions that play therapy was beneficial for their children. Parental perception of treatment is important, as parents are “more influenced by what they perceive as meaningful change in their child’s functioning rather than empirical evidence that is presented in the literature” (Bowker, D'Angelo, Hicks, & Wells, 2011, p. 1381).

Additional Services

Children with ASD are often involved in multiple treatments to address a variety of concerns, including speech therapy, occupational therapy, applied behavior analysis (ABA), and physical therapy. All participants in this study were involved in at least one of the aforementioned services before entering into this study. Most of these services for children with ASD focused on altering behaviors to teach a comprehensive set of skills, such as adaptive behavior skills, communication, and social skills. Regarding educational and behavioral treatments for children with ASD, the National Autism Center (NAC; 2009) reported variability within the research concerning quantity, quality, and consistency. Ospina et al. (2008) concluded there was no clear answer about the most effective intervention for symptoms associated with ASD.

Unlike behavioral interventions that are typically task-based, developmental interventions are choice-based and child-directed (Mastrangelo, 2009). The NAC (2009) found that relationally based interventions are developmentally appropriate for children with ASD and demonstrated favorable outcomes for improved emotional regulation. Additional studies support using relationally based interventions to improve the social and emotional functioning of children with ASD (Mahoney & Perales, 2003; Pajereya & Nopmaneejumruslers, 2011; Pajereya & Nopmaneejumruslers, 2012; Solomon, Necheles, Ferch, & Bruckman, 2007).
Similar to the developmental interventions identified by the NAC (2009), CCPT is also developmentally appropriate and child-directed. In CCPT, the focus is on the relationship between the child and the play therapist, as it serves as the primary agent of change (Landreth, 2012; Ray, 2011). The goal of CCPT regarding the participants in the current study was to help them improve their abilities to connect and relate to others, not to change their problematic behaviors. Through the therapeutic relationship within play therapy, children can develop feelings of security and control, communicate and explore their innermost feelings, and increase their self-awareness. More specifically, children have the opportunity to understand themselves and make changes from an intrinsic need, which is different from the concept of external reinforcement in most behavioral interventions.

Clinical Implications

As a result of this study, one can note many clinical implications for conducting play therapy for children with ASD. First, it appears that play therapy can be a beneficial intervention for increasing social competence, empathy, and self-regulation. Three participants demonstrated improvements in these areas and two participants demonstrated mixed results. Most parents were able to identify at least some improvements in their child. These changes included improved self-regulation, communication, and interaction with others.

Another clinical implication of this study is the need for children with ASD to participate in play therapy for a longer length of time to allow more time to develop the therapeutic relationship. Due to their difficulty with communication and social interaction, they often take longer to develop a therapeutic alliance with the play therapist (Hull,
This was apparent in the study through the demonstration of improvement in the last few weeks of the intervention phase for some participants. Because the therapeutic relationship is of primary importance in CCPT (Landreth, 2012; Ray, 2011), play therapists must be patient and consider the needs of the children, as they take longer to engage in relationship.

Regarding the difference in levels of functioning among participants, it appears that play therapy may be more effective or show effectiveness more quickly for children with higher levels of functioning. The higher functioning participants in this study were able to communicate more easily and engage with the play therapist more quickly. They also demonstrated a faster and more marked increase in scores on the SEARS-P compared to the lower functioning participants.

Implications for Future Research

Due to the limited number of studies examining the effects of play therapy for children with ASD, this study serves as a foundation for future studies in this area. Prospective research can further examine the effectiveness of play therapy in a variety of ways. First, researchers may consider focusing on higher functioning children with ASD. For studies with lower functioning individuals, researchers should use an assessment that is better able to detect small changes. As the research foundation grows, studies can be conducted with a larger number of participants to generate findings that can be generalized to more of the ASD population. Future studies may also include more play therapy sessions to assess the impact of longer-term therapy.

Because researchers report that children with ASD have increased comorbid symptoms of anxiety and mood disorders (Barnhill, 2001; Bellini, 2006; Ghaziuddin,
As with all studies, there are limitations to this study that readers should consider. The first limitation concerns the design of this study. Due to the single-case design and data analysis of individual participants, this study has minimal external validity, limiting the ability to generalize the findings. Although participants demonstrated some improvements with play therapy, generalizability to other children with ASD is difficult to determine due to the individual nature of the single-subject design.

Another limitation involved the number of play therapy sessions for the participants. Two of the participants had longer baseline phases due to variability in scores. Therefore, the intervention phase was shorter for these participants due to time limitations of the study. One participant in particular had scores indicating improvement at the end of the intervention phase and may have made more progress if she would have remained in play therapy for more sessions. As seen throughout the study, it was somewhat expected that the participants would have high variability in scores due to the characteristics associated with ASD. Many children with ASD demonstrate behavior changes for a variety of reasons, including change in routine, hyperarousal, and communication deficits. Sometimes the causes of these behavior changes are
unknown, such as with one of the participants in this study that experienced a
behavioral change without a specific cause. These frequent behavioral changes may
have influenced the consistency of data throughout the study.

The instrument used in this study serves as another limitation. Although the
psychometric properties of the instrument were strong and the SEARS-P was
recommended for use with children with ASD, it may not have been a good fit for lower
functioning individuals with ASD. Many of the questions were difficult for parents to
answer about children with limited or no verbal ability. Additionally, the instrument may
not have been sensitive enough to detect small changes that may have occurred within
children with a lower level of functioning.

For data analysis in this study, I used the Nonoverlap of All Pairs (NAP) statistic.
Parker and Vannest (2012) provided extremely conservative interpretation results for
this statistic, which may have suppressed the positive interpretation of the data. Other
effect sizes that have been proposed for use in single-case design research (i.e.
Percent Exceeding the Median and Percent of Nonoverlapping Data) have less
stringent interpretations but demonstrate lesser validity for single case designs.
Although the interpretation is more conservative, the NAP statistic was used because it
paired each data point in the baseline phase with each data point in the intervention
phase. With individual data pairings, this effect size calculation was thought to be more
representative of the data due to variability in scores throughout the study. Another
limitation was the primary researcher, as opposed to an objective review team, made
determinations regarding variability and data stabilization in order to decide when to
move on to the next phase.
Conclusion

The prevalence rate of children with ASD is continually on the rise with the current estimate to be 1 in 68 children (CDC, 2014). Children with this diagnosis struggle with social communication and interactions along with restricted and stereotyped behavior (APA, 2013). These deficits can result in struggles with peer relationships (Konig & Magill-Evans, 2001; Orsmond et al., 2004), lowered levels of empathy (Baron-Cohen & Wheelwright, 2004), and difficulty with self-regulation (Volkmar et al., 2005).

The purpose of this study was to examine the effectiveness of CCPT with children with ASD, specifically examining social competence, empathy, and self-regulation. Results provide support for play therapy as an intervention that can help children develop improvements in these areas. Although results were not consistent for all participants, three of them demonstrated improvement in all areas measured. Most parents reported observed improvement in their child, with the majority commenting on improved self-regulation and interaction with others.
APPENDIX E

INFORMED CONSENTS
Before agreeing for your child to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

**Title of Study:** Play Therapy for Children with Autism Spectrum Disorder: A Single-Case Design

**Principal Investigator:** Dee Ray, PhD, LPC-S, NCC, RPT-S, University of North Texas (UNT) Department of Counseling & Higher Education

**Purpose of Study:** You are being asked to allow your child to participate in a research study designed to explore the impact of play therapy on children with Autism Spectrum Disorder (ASD). The information gleaned from this study will be used to enhance the services available for children with ASD.

**Study Procedures:** Your child will be asked to participate in play therapy. Play therapy is a counseling intervention designed for children to express themselves in a developmentally appropriate way. Young children and those with developmental delays often have difficulty working through problems with words, so play therapy facilitates the process by providing a play environment where they can work through social and emotional concerns. Your child gets to decide what materials to play with and what to discuss in play therapy. Your child will not be asked invasive questions or forced to play. The play sessions will be video-recorded. The research team will observe the recordings to ensure the quality of play therapy services and the integrity of the study. Your child will participate in two 30-minute play therapy sessions per week.

You will be asked to participate in an initial parent/guardian interview as well as a follow-up interview after your child has completed his or her play therapy sessions. Additionally, you will be asked to complete a weekly assessment that will take approximately 10-15 minutes.

Your permission also allows your child’s teacher to complete an assessment that asks the teacher to report on your child’s behaviors within the classroom environment. Your child’s teacher will be asked to complete this assessment once per week for the duration of the study.

**Foreseeable Risks:** There are no significant personal risks foreseen as likely from involvement in this study. Your child’s participation is completely voluntary. You may withdraw your child at any time during the course of the study. However, possible risks may include one of more of the following:
1. Anything that is said or done during play therapy is considered confidential, meaning that the therapist will not reveal anything that happens in the session to another person outside of the UNT Kristin Farmer Autism Center. However, if your child discloses child abuse, neglect, exploitation or intent to harm another person, the therapist is required by law to report it to the appropriate authority.

2. Because play therapy is a counseling method, your child will be expressing emotions that could be intense for him or her. The therapist will help your child talk through these emotions and will stop therapy if any harmful effects upon your child are noted. Harmful effects would include inability to maintain self-control or being in a distraught state of mind.

Benefits to the Subjects or Others: We expect the project to benefit children by possibly improving social and emotional abilities and overall functioning of children with ASD. The results of this study may provide counselors and other professionals across the nation with knowledge that helps provide more comprehensive treatment for children with ASD.

Compensation for Participants: Your child will not be compensated for participating in the study.

Procedures for Maintaining Confidentiality of Research Records: All information will be kept confidential in a locked cabinet in the clinic of the Counseling Program at the University of North Texas. Names of parents and children will not be disclosed in any publication or discussion of this material. Information obtained from the instruments will be recorded with a code number. Only the research team will have a list of the participants’ names. The play sessions will be video-recorded. The research team will observe the recordings to ensure the quality of the study. At the end of this study, the videos may possibly be shown in professional presentations for educational purposes. Identity information such as name, place of living, and other specific information will not be revealed when videotapes are shown in educational settings. However, you may choose to withdraw your consent at any time and the video recordings of your child will not be used.

Questions about the Study: If you have any questions about the study you may contact Dr. Dee Ray, Assistant Professor, University of North Texas via telephone at 940-565-2066 or through email at dee.ray@unt.edu or Ms. Jenifer Ware, Doctoral Candidate, University of North Texas, via telephone at 940-565-2066 or through email at jenifer.ware@unt.edu.

Review for the Protection of Participants: This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at 940-565-3940 with any questions regarding the rights of research subjects.

Research Participants’ Right:
Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

- Jenifer Ware has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that your child does not have to take part in this study and refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your child’s participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your child’s rights as a research participant and you voluntarily consent for your child to participate in this study.
- You have been told you will receive a copy of this form.

Printed Name of Parent/Legal Guardian  Name of Participant (child)

Signature of Parent/Legal Guardian  Date

For the Principal Investigator or Designee:

I certify that I have reviewed the contents of this form with the subject signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

Signature of Principal Investigator or Designee  Date
You are being asked to be part of a research project being done by the University of North Texas Department of Counseling and Higher Education.

This study involves looking at whether play therapy is helpful to you. Play therapy is a time when you will come to a playroom with a counselor who will ask you to play with the toys in lots of the ways you like. Sometimes for children it is hard to share feelings with words and it helps to play with toys to express how you feel.

You will be asked to come to play therapy two times per week for 30 minutes each time.

If you decide to be part of this study, please remember you can stop participating at any time and nothing bad will happen to you.

If you would like to be part of this study, please sign your name below.

__________________________
Printed Name of Child

__________________________ Date
Signature of Child

__________________________ Date
Signature of Principal Investigator or Designee

Waiver of Assent

The assent of (insert name of child) was waived due to:

_________ Age

_________ Maturity

_________ Psychological State

__________________________ Date
Signature of Parent/Guardian
APPENDIX F

PARENT/GUARDIAN INTERVIEWS
Initial Parent/Guardian Interview

Date:

Interviewer:

Interviewee:

Relationship to this child:

Address:

Phone number:

**General Information:**

Child’s name:

Child’s date of birth:

Child’s age:

Child’s grade in school:

Child’s Sex:

Child’s Ethnicity:

Why do you wish for your child to participate in this study?

What are you hoping your child gains from participating in this study?

**Family/Caregiver Information:**

What is the marital status of the child’s parents/guardians?

If not married to each other, does the child have stepparents?

Who resides in the home? What are the names and ages of those individuals?

Have there been any significant changes in your family during the child’s lifetime?

Does your child spend a significant amount of time with other caregivers/adults outside of the home? If so, who and how often?

What family support systems do you have?
What is the primary language used in the home?

Educational History:

Does/did your child attend preschool or daycare? If so, when did s/he start?

Is your child currently in school? If so, where and what grade is s/he in?

Developmental History:

Pregnancy:

Was the pregnancy planned?

What was your level of stress during pregnancy?

Did the mother take any medications during the pregnancy? If so, what kind?

Did the mother use drugs, alcohol, or tobacco during the pregnancy? If so, what kind and how frequently?

Were there any complications during pregnancy?

Was it a caesarian section or vaginal birth?

Was your child delivered on time, late, or premature?

   If premature, how long was your child hospitalized?

Additional information pertaining to hospitalization?

What was your child’s birth weight?

Was your child born with any birth defects?

Did you or your child experience any complications after delivery?

Developmental Timeline:

At what age did your child do the following:
   Crawl
   Walk
   Speak single words
   Speak in sentences
   Complete toilet training
Eat solid foods  
Show interest in or attraction to sound

Did/does your child experience any difficulties with speech, motor skills, sleeping, eating, weight? Other? If so, please explain.

Did/does your child receive any services for help with any of the difficulties identified above?

**Autism Spectrum Disorder (ASD):**

What is your child’s diagnosis?

When and where did your child receive this diagnosis?

Has your child received services for anything related to this diagnosis? If so, what service and for how long?

How do you see these symptoms of this diagnosis manifest in your child?

What social/emotional/behavioral concerns do you have for your child regarding this diagnosis?

Does your child have any other identified disabilities?

**Mental Health:**

Has your child ever received a mental health diagnosis other than ASD?

Has your child ever received counseling or play therapy services? If so, for what reason, when, and for how long? Was it helpful?

Do you currently have any mental health concerns about your child? If so, please explain.

**Health:**

Has your child had any recent illnesses, accidents, or hospitalizations?

Does your child have seizures? If so, when did they start and is your child receiving medical care for them?

Does your child have any health concerns?

Does your child currently take any medications? If so, any side effects?
Social/Emotional:

Does your child have any friends? If so, approximately how many?

Does your child prefer to play alone or with others?

How does your child typically interact with peers?

Describe your relationship with your child.

Describe your child’s relationship with his or her siblings.

Does your child care about other people’s feelings?

What is your child’s primary method of communication?

Describe the level of stress you experience parenting your child.

Child’s Strengths:

Describe your child’s strengths.

What do you enjoy most about your child?
Follow-Up Parent/Guardian Interview

1. Since the start of this study, has your child experienced any significant events or changes in his or her routine?
   a. If so, how do you believe that it has affected him or her?

2. Have there been changes in your child’s medications, health, education, or other services?

3. Has any testing been conducted on/for your child? If so, what were the results?

4. Have any changes taken place in your life that could possibly affect the home or school environment?

5. Please describe any changes you’ve observed in your child since the start of this study.

6. Have there been any changes in your child’s ability to maintain friendships and/or feel comfortable with peers?

7. Have there been any changes in your child’s ability to effectively use verbal communication with others?

8. Have there been any changes in your child’s ability to relate to others' situations or feelings?

9. Have there been any changes in your child’s level of self-awareness or insight into his or her behavior or feelings?

10. Have there been any changes in your child’s ability to regulate his or her emotions or behavior?

11. Have there been any changes in your child’s ability to think before acting?

12. Have there been any changes in your child’s ability to accept responsibility?

13. Have there been any changes in your relationship to your child or child’s relationship to you?

14. What has this play therapy experience been like for you and your child?

15. Is there anything else you think I should know about your child at this time?


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