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Emotional Assets of Children With Autism Spectrum Disorder: A Single-Case Therapeutic Outcome Experiment

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The authors explored the effect of child-centered play therapy on the social competence, empathy, and self-regulation of children diagnosed with autism spectrum disorder. This study used a single-case design with 5 children ranging from 6 to 8 years old. Visual analysis of the data indicated that play therapy was beneficial for 3 participants, whereas results for 2 participants were mixed. Discussion includes implications for clinical practice and future research.

Keywords: autism spectrum disorder, play therapy, emotional assets, 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 (American Psychiatric Association [APA], 2013). 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" (APA, 2013, p. 53). The Centers for Disease Control and Prevention (CDC, 2014) estimated that one in 68 children in the United States has ASD. The prevalence of ASD has increased, as past estimates were one in 110 in 2006, one in 125 in 2004, and one in 150 in 2000 (CDC, 2014). These rates are considerably higher than almost 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 one in 42 boys and one 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 these children as having an atypical way of relating to others. Current research also supports that children with ASD struggle with peer relationships (Greenspan & Wieder, 2006). 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 because of their 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 (Jahromi, Bryce, & Swanson, 2013). This can be a result of sensory overload or difficulty with shifting their attention (Bolick, 2004).

As the prevalence of ASD increases, so does the need for appropriate interventions to help curtail the associated impairments resulting from the disorder (Krell & Perusse, 2012; Layne, 2007). 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 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; Layne, 2007), providing support for using play therapy as a method of treatment.

Child-Centered Play Therapy

Landreth (2012) defined *play therapy* as a dynamic interpersonal relationship between a child and a counselor trained in

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play therapy, and emphasized 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 his or her 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). While playing, 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 along the autism spectrum given 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 in which children with ASD can have the opportunity to feel fully accepted by the counselor, a condition that is often unavailable to these children (Ray et al., 2012). The counselor works to create an environment where a child can feel safe, providing an opportunity for self-expression in ways that are most comfortable to the child and that meet his or her 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 because of 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. Given their extensive difficulties with social communication and interaction, children with ASD need interventions that target these specific areas and lead to consistent relationships. Improved communication and self-expression can help children with ASD to 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 nondirective 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 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. We believed that through an accepting and empathic relationship with a counselor, a child with ASD may likely discover self-enhancing ways of behaving, communicating, and relating to others.

Method

We used an experimental, single-case, multiple-baseline design to examine the effectiveness of CCPT on a child's level of empathy, self-regulation, and social competence. Data for each participant were collected and analyzed separately to understand the unique changes in that individual.

Participants

Research participants included five children recruited from an autism clinic and speech and hearing clinic located on the campus of a large state university. 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) were between 5 and 9 years old, (c) met criteria for Tier 2 (at-risk) or Tier 3 (high risk) on the Social-Emotional Assets and Resilience Scales–Parent Form (SEARS-P; Merrell, 2011), and (d) were not involved in any counseling services. Individual information for each participant is listed below. Pseudonyms were used to maintain confidentiality.

Participant 1. Ian was a 6-year-old Caucasian boy 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 applied behavior analysis (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 2. Bella was an 8-year-old Latin American girl 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, ABA, and 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. Because of the severity of Bella's behavioral problems, such as having tantrums, she was prescribed Risperdone, Buspar, and Intuniv.

Participant 3. Hunter was a 6-year-old Caucasian boy 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 3.5 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.

Participant 4. Ethan was a 7-year-old Caucasian boy who was adopted at birth. 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, sounds, 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 5. Rachel was a 9-year-old girl 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.

Instrument

We used the Social-Emotional Assets and Resilience Scales (SEARS; Merrell, 2011), 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 ages 5–18 years. 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, seven 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 ($\alpha = .96$). The internal consistency reliability coefficients for the subscales are as follows: Self-Regulation/Responsibility ($\alpha = .95$), Social Competence ($\alpha = .89$), and Empathy ($\alpha = .87$). 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 (Gresham & Elliott, 1990) and the Home and Community Social Behavior Scales (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.

Procedure

First, a participant's parent or caregiver participated in a parent interview so that demographic and developmental information could be gathered. 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 once per week. As recommended by Kennedy (2005), the baseline phase continued for a minimum of 3 weeks to gain an average data point for each participant. The baseline phase was extended until stability was demonstrated. After completion of the baseline phase, the treatment phase began. In the treatment phase, participants engaged in 30-minute play therapy sessions twice per week for approximately 10 weeks. Occasionally, participants only engaged in one play therapy session in a particular week because of school closings, participant illness, or absences. The 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 nontreatment follow-up phase. Some participants had fewer than 20 play therapy sessions because they had entered the study at a later time and also needed longer baseline phases. During the follow-up phase, participants no longer engaged in CCPT and the parents of participants continued completing the SEARS-P each week for 3 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 postinterview to gather information about any perceived changes. In the original research design, we intended to collect data from children's teachers. During the research study, data completion from teachers was inconsistent for three

TABLE 1

Participant Protocol Across Phases

	Baseline	Treatment		Follow-Up
Participant	Weeks	Weeks	Sessions	Weeks
Ian	3	13	21	3
Bella	4	13	22	3
Hunter	4	12	20	3
Ethan	6	8	14	3
Rachel	7	6	12	3

Note. Weeks = number of weeks; sessions = number of sessions.

children and unavailable for two children; thus, teacher data collection was unusable and discontinued during the study.

All of the children in this study received individual CCPT according to Ray's (2011) CCPT treatment manual. The playroom was equipped with toys according to suggestions made by Landreth (2012) and represented many categories, including nurturing, mastery, aggression, imaginary, and creative expression toys, to allow for a wide range of emotional expression. The room was also equipped with a camera to record all sessions. The first author served as the counselor facilitating CCPT with the participants in this study. She had completed 3 years of doctoral work in counseling and 20 hours of graduate-level coursework in play therapy. She also possessed 9 years of experience utilizing play therapy. Additionally, she was 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 degree in counseling and had completed 2 years of doctoral course work, including 2 years of supervised clinical work in CCPT. The reviewer rated counselor responses with the Play Therapy Skills Checklist (Ray, 2011) to ensure that the counselor's responses fell within the verbal categories of CCPT protocol. According to fidelity review results, sessions adhered to CCPT protocol 99% of the time.

Data Analysis

We 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. 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). The authors, both of whom have prior training and experience in single-case design interpretation, conducted visual analysis.

Finally, treatment effect size was calculated using nonoverlap of all pairs (NAP). Used in conjunction with visual analysis, estimations of treatment effect produce a value for the strength of the relationship between two variables. To calculate NAP, we 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), we assigned one point for each overlap and half a point for each tie. After adding the points to determine the sum of overlap, we 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. 364) 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. We separately evaluated each construct (i.e., Social Competence, Empathy, and Self-Regulation/Responsibility) by assessing the level, trend, variability, immediacy of effect, and overlapping data. Additionally, we calculated an effect size using the NAP statistic. Table 2 provides means, standard deviations, and NAP results for all participants across all phases. Figure 1 displays a graphical image of the multiple baseline phases across participants. Given the amount of data analyzed, only results for substantial findings are presented in this section.

Participant 1: Ian

Ian's results displayed an inconsistent 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 the 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

TABLE 2

Means, Standard Deviations, and Nonoverlap of All Pairs (NAP) Scores for All Participants Across Phases

	Ian		Bella		Hunter		Ethan		Rachel	
Scale and Phase	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
SR/R										
Baseline	34.00	2.65	22.75	1.71	20.25	1.50	23.50	1.52	31.43	1.40
CCPT	31.77	0.60	25.45	2.09	19.27	1.10	26.25	1.91	31.33	0.52
Follow-up	32.00	0.00	26.00	3.61	18.33	0.58	27.00	0.00	33.00	1.00
NAP	0.14		0.83		0.30		0.88		0.45	
SC										
Baseline	27.67	1.15	16.75	2.63	19.75	2.22	25.50	3.08	24.86	1.86
CCPT	28.85	3.13	17.09	2.66	21.18	1.40	27.88	1.64	25.83	5.64
Follow-up	26.00	1.73	17.00	2.00	22.33	1.53	28.33	2.31	33.33	0.58
NAP	0.54		0.55		0.43		0.83		0.48	
Empathy										
Baseline	13.00	0.00	19.25	2.50	29.75	4.79	19.33	2.16	24.00	3.27
CCPT	13.00	0.00	22.00	2.20	25.91	2.07	22.13	2.75	28.00	4.00
Follow-up	13.00	0.00	20.00	1.73	26.67	1.15	25.67	2.52	32.67	2.89
NAP	0.50		0.79		0.27		0.78		0.74	

Note. Increased scores indicate improvement. SR/R = Self-Regulation/Responsibility; CCPT = child-centered play therapy; SC = Social Competence.

variability for Empathy. NAP effect sizes indicated a weak treatment effect for all subscales.

Participant 2: Bella

Bella's results indicated that means increased from the baseline phase to the intervention phase and then slightly decreased during the follow-up phase for Social Competence and Empathy. For Self-Regulation/Responsibility, the mean continually increased across all phases of the study. Trend analysis revealed an upward trend for all subscales. 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.

Participant 3: Hunter

For Hunter, the Empathy 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.

Participant 4: Ethan

In Ethan's case, 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. 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.

Participant 5: Rachel

For Rachel, 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. 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.

Summary of Results

Table 3 provides a summary of results for all participants in this study. Three participants (Bella, Ethan, and Rachel) demonstrated results that indicated play therapy was a beneficial intervention and two participants (Ian and Hunter) had mixed results. The two participants with mixed results demonstrated higher means for Social Competence during the intervention but weak, yet positive, effect sizes overall. Mean scores for Social Competence improved for all participants during the intervention phase.

Discussion

The results of our study indicated that play therapy was a beneficial intervention for three participants, who had mean gains on all three subscales related to Self-Regulation/Responsibility, Social Competence, and Empathy. The other two participants responded to the intervention with mixed results. Social competence appeared most positively affected

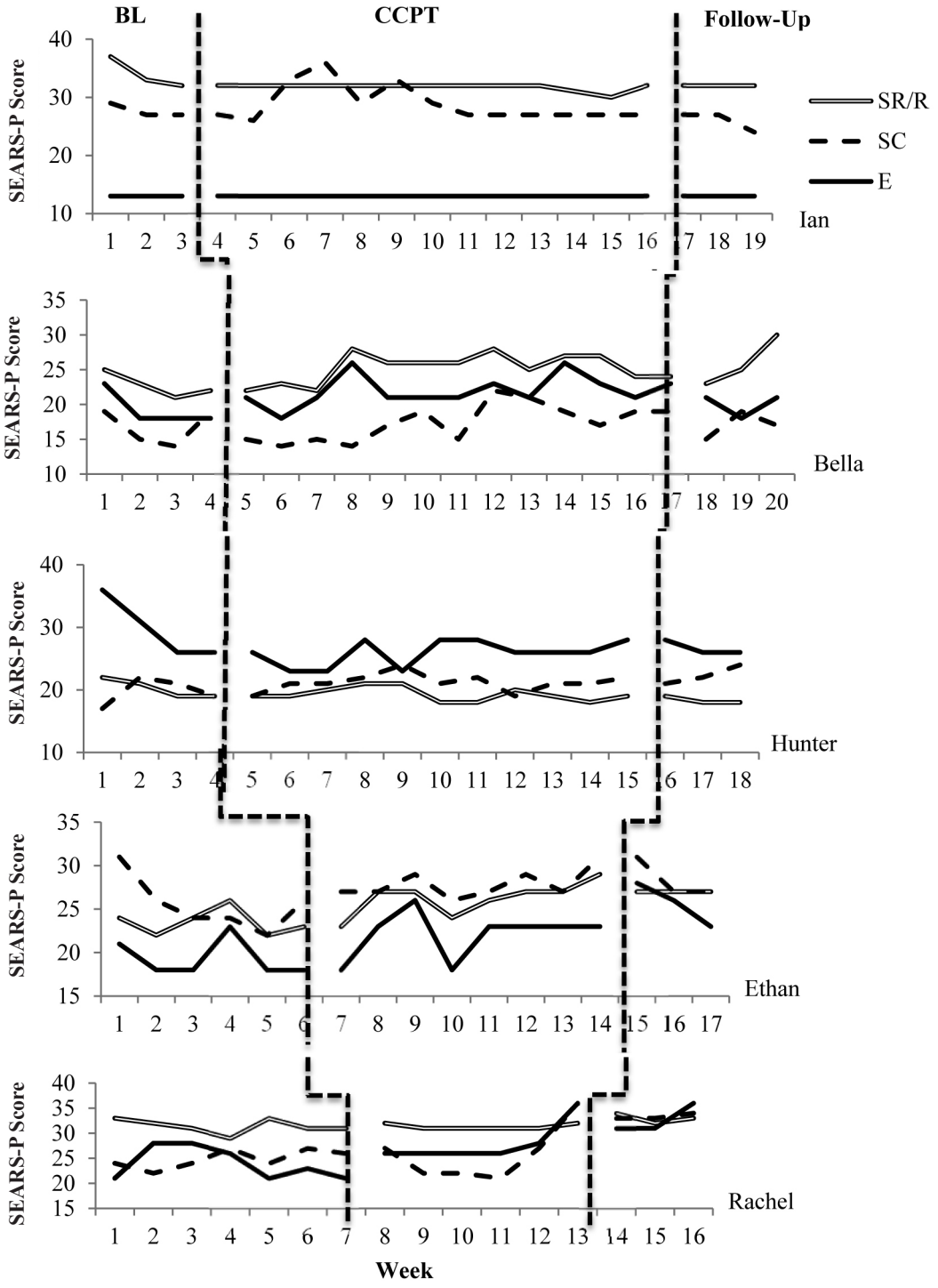

FIGURE 1

Results for All Participants Across Phases

Note. BL = baseline; CCPT = child-centered play therapy intervention; SEARS-P = Social-Emotional Assets and Resilience Scales–Parent Form; SR/R = Self-Regulation/Responsibility; SC = Social Competence; E = Empathy.

TABLE 3

Summary of All Participants' Results

	Self-Regulation/Responsibility			Social Competence			Empathy		
Participant	***M* Int.**	***M* Follow**	**NAP**	***M* Int.**	***M* Follow**	**NAP**	***M* Int.**	***M* Follow**	**NAP**
Bella	Y	Y	.83	Y	Y	.55	Y	Y	.79
Ethan	Y	Y	.88	Y	Y	.83	Y	Y	.78
Rachel	N	Y	.45	Y	Y	.48	Y	Y	.74
Ian	N	N	.14	Y	N	.54	N	N	.50
Hunter	N	N	.30	Y	Y	.43	N	N	.27

Note. *M* int. = improved mean during intervention phase; *M* follow = improved mean during follow-up phase; NAP = nonoverlap of all pairs; Y = mean was higher than mean of baseline phase; N = mean was lower than mean of baseline phase.

by play therapy, as all participants demonstrated improvement during intervention. Among the three participants for which the intervention demonstrated effectiveness, the largest gains were made in the area of empathy.

Effect 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 for them 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). Through CCPT, children are able to communicate in ways in which they are most comfortable, including nonverbal communication. This is particularly helpful for children with ASD, because 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 a counselor in their own unique ways and eventually extend them 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 counselor'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, which gave each child 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.

Empathy. Children with ASD have difficulty empathizing and understanding the situations of others (Baron-Cohen & Wheelwright, 2004), 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 (Jahromi et al., 2013). Bolick (2004) identified overstimulation and trouble regulating or shifting attention as contributing to difficulty with self-regulation. 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, he or she has 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 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 who experienced improvement as a result of the intervention, it was highly successful. One of the participants, Rachel, had similar means between the baseline and intervention phases and then demonstrated an increased mean in the follow-up phase. Although scores did not reflect an improvement for two of the participants, the mother one of those participants reported vast improvement in her child'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 area 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 counselor. Play therapy meets children at their level of development and allows them to express themselves in ways in which they are most comfortable (Landreth, 2012). In this study, we 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, engaged in independent play at the start of play therapy, and did not make much effort to engage with the play therapist. As the sessions progressed, they slowly made more eye contact and approached the play therapist more frequently, showing a desire to engage and be in relational contact. The highest functioning participant in this study, Ethan, 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. Because of 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, they take longer to build 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 counselor is essential for change and serves as the primary agent of change (Landreth, 2012; Ray, 2011). As the counselor 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 counselor 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, the counselor was able to form therapeutic relationships that were meaningful during the play therapy process. Each relationship was unique based on the characteristics and communication of each participant and grew throughout the therapeutic process. Most participants demonstrated connection through nonverbal interactions, such as touching the counselor's face and looking into her eyes while their faces were close. Because of the participants' limited abilities to verbally communicate, most communicated through these types of actions, indicating a desire for a relationship.

Parent Receptivity

Most parents had little understanding about play therapy prior to participation in the study, but they were open to learning 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 because of their perceptions that play therapy was beneficial for their children. Parental perception of treatment is important, given that 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, CCPT is also developmentally appropriate and child directed. In CCPT, the focus is on the relationship between the child and counselor, as the relationship serves as the identified primary agent of change (Landreth, 2012; Ray, 2011). The goal of CCPT with regard to 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, an alternative to 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. Because of the single-case design and type of data analysis used for the 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 because of variability in scores and had shorter intervention phases because of the 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 number of participants also serves as a limitation. According to Chambless et al. (1996, 1998), using a sample size of five participants can show that a treatment is probably efficacious as opposed to well-established, which would require at least nine participants.

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, we used the NAP statistic. Parker and Vannest (2009) provided extremely conservative interpretation results for this statistic, which may have suppressed the positive interpretation of the data. Finally, the research team, as opposed to an objective review team, made determinations regarding variability and data stabilization to decide when to move on to the next phase and interpret visual analysis.

Implications for Counseling

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. Given 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), counselors must be patient and consider the needs of the children, because they take longer to engage in relationships. With regard to 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 counselor more quickly. They also demonstrated a faster and more marked increase in scores on the SEARS-P compared with the lower functioning participants.

Suggestions for Future Research

Given 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 (Ghaziuddin, 2002), 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 their progress and outcomes, future researchers may also consider analyzing the interactions between the client and play therapist. The therapeutic interactions may increase the 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), which can result in struggles with peer relationships (Greenspan & Wieder, 2006), lowered levels of empathy (Baron-Cohen & Wheelwright, 2004), and difficulty with self-regulation (Jahromi et al., 2013). The purpose of this study was to examine the effectiveness of CCPT with children with ASD, specifically examining social competence, empathy, and self-regulation.

Our results provide support for play therapy as an intervention that can help children develop improvements in these areas. Although the 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.

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