EFFECTIVENESS OF PLAY THERAPY ON PROBLEM BEHAVIORS OF CHILDREN WITH INTELLECTUAL DISABILITIES: A SINGLE SUBJECT DESIGN

Karrie L. Swan, B.S., M.Ed.

Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

May 2011

APPROVED:

Dee Ray, Major Professor
Carolyn W. Kern, Committee Member
Sue C. Bratton, Committee Member
Janice Holden, Chair of the Department of Counseling and Higher Education
Jerry R. Thomas, Dean of the College of Education
James D. Meernik, Acting Dean of the Toulouse Graduate School

Swan, Karrie L. *Effectiveness of Play Therapy on Problem Behaviors of Children with Intellectual Disabilities: A Single Subject Design*. Doctor of Philosophy (Counseling), May 2011, 114 pp., 10 tables, 24 figures, references, 94 titles.

A growing disparity between the mental health needs of children and their lack of treatment served as the basis of this study. To address this existent gap, I proposed that child-centered play therapy (CCPT), a holistic treatment that fosters children's emotional, developmental, and social growth would serve as a viable treatment. The purpose of this study was to examine the effect of CCPT on problem behaviors among children identified with an intellectual disability.

Specifically, a single case, A-B-A design (N = 2) was used to examine changes in participant's problem behaviors as measured on the Aberrant Behavior Checklist (ABC) across conditions. Trained raters used the ABC to rate participant's problem behaviors 3 times per week during the course of this study. Participants completed 2 weeks of a no-intervention phase, 5 weeks of play therapy 3 times per week, and 2 weeks of a no-intervention maintenance phase. Additionally, participants were administered the Gesell Developmental Observation to assess their maturational age during the baseline and maintenance phases. Parents also completed the ABC during two intervals: baseline phase, and maintenance phase. Analysis of results indicated that problem behaviors decreased for both participants. Results from the percent of non-overlapping data (PND), an indice for effect size further revealed that play therapy was a very effective treatment for participants. Follow-up interviews suggested that play therapy is a viable intervention for children with intellectual disabilities and problem behaviors. Clinical observations and implications for future research are presented.

ACKNOWLEDGEMENTS

Words can not fully convey my appreciation for the incredible people who have made this journey possible. Rob, you have been my greatest source of strength and encouragement. My dearest Karlee, you have taught me so much about love and parent-child relationships. Mom and Dad, thank you for always supporting me and for demonstrating the importance of being real and congruent. To my precious sister, Sam, you have always been the wind beneath my wings. To my dearest friends Karlee and Brandy, I would not have made it to this point in my life without your love and support. I am so full of gratitude for all of the faculty members who contributed greatly to my personal and professional development. Dr. Ray, I am so deeply grateful for how much you contributed to my development as a clinician and as a mother. Dr. Bratton, thank you for guiding me in my work with children. Dr. Kern, thank you for demonstrating the importance of seeing other's strengths and providing encouragement. To Dr. Smith and Dr. Farmer, thank you so much for all of your support through this program. I am so honored to know each one of you and am grateful for the time I got to spend with you at the Dallas clinic. To Rene and Jennifer, I am so thankful for my friendships with you. The ebbs and flows during this program were enriched because of my friendships with both of you.

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

Experts in the field of intellectual disability and behavioral disorder expressed concern that service providers are failing to adequately meet the mental health needs of children in the United States (United States Public Health Service, 2001). The Surgeon General estimated nearly 6 million children and adolescents in the United States could qualify as having a mental health disorder (United States Public Health Service, 2002). In addition, results from epidemiological studies indicate that children identified as having an intellectual disability are four times more likely than their non-disabled peer group to develop an emotional or behavioral disorder (Dekker, Koot, Ende & Verhulst, 2002; Einfeld & Tonge, 1996; United States Public Health Service, 2002). Research repeatedly reveals that children with an intellectual disability face neglect and substandard care (Floyd & Gallagher, 1997; Murphey et al., 2005). Moreover, children identified as having a dual diagnosis of an intellectual disability and a mental health disorder experience serious inhibitions in adaptive functioning in all areas of their lives (Dekker et al., 2002; Dykens, 2005; Matson, Fodstad, & Rivet, 2009).

The enduring consequences for children identified as having a dual diagnosis of an intellectual disability and behavioral disorder include strained familial relationships, decreased access to educational and leisure activities and increased risk for neglect and abuse, and increased risk for institutionalization (Murphey et al., 2005). Parents of children with a mental disability and mental health disorder also experience significantly more stress than parents of children without an intellectual disability (Floyd & Gallagher, 1997; Paczkowski & Baker, 2007). Additional research suggests that childhood

behavioral problems among children with disabilities remain constant (Green, O'Reilly, Itchon, & Sigafoos, 2004).

In a longitudinal study, Green and colleagues (Green et al., 2004) examined the persistence of behavioral problems among preschool children identified as having an intellectual disability. In their analysis of data gathered every six months for three years, Green et al. found that children's demonstration of problem behaviors remained stable. They also noted that although the children in the study received behavioral interventions, outward externalized display of problem behavior persisted throughout the preschool years. Results of the study seem to highlight the presence of a gap between the needs and services among exceptional individuals and further indicate the importance of early interventions that promote holistic development of children (Green et al.).

Additionally, recent criticism of psychopharmacological and behavioral treatment methods, the two most commonly used interventions for treating children identified as having intellectual disabilities and aberrant behavior, expose the importance of developing interventions that not only address children's behavioral difficulties but also their emotional, social, and developmental needs (Goodman & Linn, 2003; Seltzer & Krauss, 2001).

The use of play therapy to treat children with an intellectual disability and mental health disorder may bridge the gap between the mental health needs of exceptional children and the available services. Play therapy is an intervention based on the cognitive, social, and emotional development of children. It is well-documented in the literature that play therapy is an effective approach for treating children with an array of

emotional and behavioral problems (LeBlanc & Ritchie, 2001; Muro, Ray, Schottelkorb, Smith, & Blanco, 2006). Results from Bratton, Ray, Rhine, and Jones's (2005) meta-analytic study yielded ample support for the use of play therapy as an intervention for treating childhood mental health problems, including behavioral disorders.

Statement of the Problem

Government reports highlight a growing disparity between mental health needs of children with disabilities and their subsequent treatment (U.S. Public Health Service, 2002). Absence of disability training in counselor education programs indicates a lack of counselor preparedness to work with this distinct, homogenous population (Tarver-Behring & Spagna, 2004). Results from a thorough literature review also revealed a dearth of outcome research in the treatment of exceptional children. These existent gaps warrant new research into the efficacy of play therapy as an intervention for reducing aberrant forms of behavior exhibited by children with an intellectual disability.

Purpose of Study

This study was designed to examine the effects of play therapy on problem behaviors exhibited by children identified as having an intellectual disability. An experiential ABA design was used to investigate changes in children's (N = 2) behavior across three conditions: (a) no-treatment baseline, (b) intervention, (c) no-intervention maintenance phase.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Intellectual Disability

The accepted definition of an intellectual disability is a limitation in ability that notably influences one's psychological, social, and intellectual functioning. According to the American Association of Mental Retardation (AAMR, 2000), intellectual disability is a disorder characterized by arrested development in both cognitive and behavioral functioning. Specifically, children must demonstrate limits in both intellectual functioning and adaptive behavior in two of the following ten functional skill areas: communication, personal care, home life, social skills, utilization of the community, self-governance, health and safety, functional academic skills, leisure time, and work Similarly, the fourth edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition Text Revision (DSM-IV-TR), specifies that individuals meet the criteria for mental retardation through the following three features: (a) sub average intellectual functioning as demonstrated by an IQ standard score of 70 or below, (b) concurrent limitations in 2 of 10 functional skills, and (c) onset of limitations demonstrated before the age of 18 years (American Psychiatric Association, 2000, p. 49). Additionally, the DSM-IV-TR contains the following IQ-based classification of the severity of intellectual impairments (American Psychiatric Association, 2000, see Table 1).

Prevalence

According to an array of epidemiological studies, the estimated prevalence of

individuals with mental disabilities is approximately between 2 and 85 per thousand (Leonard & Wen, 2002; Roelveld, Zielhuis, Gabreels, 1997). In a review of 43 epidemiological studies published between 1981 and 1995, Roelveld et al. (1997) attributed the variable prevalence rates for children with intellectual disabilities to different practices researchers apply to define intellectual disability, collect sources of data, and use methodological strategies. Although results of epidemiological studies indicate discrepancies in prevalence rates for children with mild and severe intellectual disabilities, results from many studies suggest that 3% of the world population have an intellectual handicap (Leonard & Wen; Murphey, Yeargin-Allsop, Decoufle, & Drews, 1995; Roelveld et al., 1997).

Table 1

DSM-IV-TR IQ Based Classification of Intellectual Impairments

Classification	IQ Range
Mild Mental Retardation	50-55 to approximately 70
Moderate Mental Retardation	35-40 to 50-55
Severe Mental Retardation	20-25 to 35-40
Profound Mental Retardation	Below 20-25

Regarding differences in gender, male children are twice as likely as female children to exhibit symptoms of an intellectual disability (Drews, Yeargin-Allsop, Decoufle, Murphey, 1995). Using data from a randomized cross-sectional survey consisting of 458 children with an intellectual disability and 563 non-disabled children, Drews et al. discovered that there were 50% more boys than girls qualifying as having a

mild mental disability. They also concluded that African American boys were nearly 60% more likely than Caucasian boys to have an intellectual disability. Additionally, Drews et al. and Roelveld et al. (1997) both found an inverse association between socioeconomic status and intellectual disability, indicating that a plausible relationship exists between parent's level of reported income and their children's subsequent impaired development. Considering the results, questions arise as to whether women of lower socioeconomic groups receive adequate prenatal care (Dubay, Joyce, & Kenney, 2001).

Comorbidity

Many children with intellectual disabilities have a heightened risk for mental disorders (Dekker et al., 2002; Einfeld & Tongue, 1996; Linna et al., 1999). Studies suggest that children between the ages of 4 and 18 designated as having an intellectual handicap are 30% to 60% more likely than their non-disabled peers to exhibit symptoms of psychopathology (Einfeld & Tongue, 1996; Holden & Gitleson, 2005; Ruiter, Dekker, Verhulst, & Koot, 2007). Linna et al. (1999) investigated emotional and behavioral disturbances among a randomized sample of 5,804 eight-year-old children in rural, suburban, and urban regions of Finland. Researchers collected data about psychiatric and depressive symptoms using parent and teacher reports and a children's self-evaluation of feelings of depression. Results from parent and teacher reports indicate that children with intellectual disabilities are three times more likely to exhibit emotional and behavioral disorders in comparison to non-disabled children. Though child reports of experiences of depressive symptoms on the Child Depression Inventory (CDI) were

not significantly different between the two comparison groups, Linna et al. found that more children with a mental handicap reported experiencing symptoms of depression as compared to the non-disabled group.

Similarly, Dekker et al. (2002) examined prevalence differences of emotional and behavioral problems between children with and without mental disabilities. When the investigators gathered teacher and parent reports on 3,000 children, they found that compared to non-disabled children, individuals with IQ scores between 60 and 80 had greater mean averages on internalizing and externalizing subscales of the Child Behavior Checklist. The results of the study suggest that children with mental disabilities demonstrate more internalizing and externalizing behaviors as compared to children without an intellectual disability. More recently, Kaptein, Jansen, Vogels, and Reijneveld (2007) assessed mental health problems between youths with and without mental handicaps. Through analysis of parent reports of 260 children, Kaptein et al. found 60% of children with a mental handicap exhibited relational, emotional, and behavioral difficulties. The researchers found that parent scores for children without an intellectual disability fell to 9.8%.

Kerker, Owens, Zigler, and Horowitz (2004) highlighted the discrepancies in prevalence estimates for individuals identified with a dual diagnosis of mental disorder and intellectual disability. Specifically, the authors found through their qualitative analysis of 52 research documents that sample sizes, study designs, differential definitions, and application of diagnostic criteria contribute to inaccurate estimates of mental health diagnoses among individuals with intellectual disabilities.

Although data obtained from experiments are mixed regarding the prevalence of

dual diagnoses among exceptional individuals, a preponderance of evidence seems to demonstrate that children with an intellectual disability often manifest symptoms of a mental health disorder through externalized behavioral problems (Bradley, Summers, Wood, Bryson, 2004; Einfeld & Tongue, 1996; Holden & Gitleson, 2005). For the purpose of this study, a thorough discussion of the definition and risk factors of problem behaviors follows.

Problem Behavior

Problem behavior among children with an intellectual disability is characterized by rigid, stereotypic, aggressive, destructive, withdrawing, and self-injurious behavior (Emerson, Moss, Kiernan, 1999; Hove & Havik, 2008; Myrbakk & Tetzchner, 2007). Emerson et al. further conceptualized problem behavior as external functioning "of such intensity, frequency, or duration that the physical safety of the person or others is placed in serious jeopardy, or behavior which seriously limits the person's access to ordinary settings, activities, services, and experiences" (p. 38). Additionally, Matson and Rivet (2008) illuminated the following descriptors of challenging behavior (Table 2).

Table 2

Descriptors of Problem Behavior

Topographical Behavior	Behavioral Examples
Aggression and Destruction	Hitting, biting, and throwing objects, property destruction.
Stereotypy	Repeated vocalizations and movements, unusual play
Disruptive Behavior	Inappropriate sexual behavior, inappropriate actions
Self-Injurious Behavior	Head-banging, self-biting, scratching, gouging, and involuntarily falling

Prevalence studies indicate that 10 to 20% of individuals with an intellectual disability manifest problem behavior (Emerson & Bromley, 1995; Emerson, Robertson, & Wood, 2005). In an international prevalence study, Holden and Gitleson (2005) investigated the prevalence and frequency of challenging behaviors of 826 individuals identified as having a mental handicap. In their analysis of informant measures, Holden and Gitleson found that 11.1% of the sample population engaged in abnormal forms of behavioral functioning. The researchers further discovered an association between types of challenging behavior and level of mental disability; more specifically, that individuals diagnosed as having a mild or moderate intellectual disability exhibited significantly higher forms of attacking behaviors. Children and adults diagnosed with a severe or profound disability manifested significantly more self-injurious behavior. The researchers recommended professional training for both parents and service providers in the remediation of problem behaviors.

In a longitudinal study, Murphey et al. (2005) investigated the associations between limited social skills, impaired speech development, and stereotyped behavior among 141 children (ages 2-18 years). Investigators collected data through the use of psychometric assessments and semi-structured interviews with informants at two time intervals 12 years apart. Through a non-parametric statistical analysis, Murphey et al. found an inverse association between language development and challenging behavior. They also discovered a negative correlation between social skill development and abnormal forms of behavior. Results indicate that excess behavior decreases as advances are made in one's ability to communicate and socialize. Because the children in the study had received behavioral supports and interventions throughout the duration

of the study, Murphey et al. acknowledged that behavioral supports may not be effective. The authors recommended the implementation of early interventions that target communication and social skills for individuals with an intellectual disability.

In a recent meta-analysis, Mclintock, Hall, and Oliver (2003) studied the integrity strength of presumed risk factors associated with problem behaviors. Specifically, the authors examined studies addressing relationships between problem behavior and degree of intellectual disability, presence of autistic behaviors, and degree of expressive and receptive speech patterns.

Based on their analysis of 22 studies, the researchers reported a statistically significant correlation between level of intellectual disability and behavior resulting in self-injury, aggression, and stereotypy. They also found a statistically significant inverse relationship between communication impairment and self-injury. Although results indicate poor speech patterns and a diagnosis of severe mental disability are risk factors for developing problem behavior, the limited number of studies analyzed in meta-analysis warrants caution in interpreting the results. Mclintock et al. concluded improved treatment focuses on risk factors correlative to challenging behavior for developing viable treatment plans.

Appraisal of Problem Behavior

As different forms of behavioral difficulties may transpire depending on environmental context, Dosen and Day (2001) argued that assessment of challenging behavior from a multi-method approach is not only imperative, but is the best practice in the field of special education. Researchers suggested that a detailed assessment of

problem behavior includes a review of the child's educational and medical history, multiple informant reports, behavioral observations, and appropriate assessments.

Additionally, Tonge (1999) explained the importance of evaluating one's behavior within the context of their developmental level. Tonge further posited that although children with intellectual disabilities may exhibit problem behavior deemed age-inappropriate, consideration of mental age may reveal the purposeful, developmentally appropriate nature of the specific form of behavior. Tonge further recommended professionals rule out medical illnesses that could potentially exacerbate excess behavior and garner information regarding one's environment and attachment relationships.

Consequences of Problem Behavior

Often, children with intellectual disabilities that exhibit challenging behavior have restricted opportunities to develop social skills, less access to educational programs and leisure activities, and have an increased risk for being physically restrained and abused (Murphey et al., 2005). Thus, the existence of problem behavior among exceptional individuals is a foundational marker in the assessment of "quality of life" (Murphey et al., p. 405).

Emerging literature on quality of life factors for individuals with disabilities center around three domains of functioning: social relationships, adaptive skills, and parental stress (Seltzer & Krauss, 2001). Floyd and Gallagher (1997) investigated the influence of child handicap and problem behavior on parental stress. Using data from 231 mothers and fathers of children with a mental disability and chronic illness, the

investigators examined differences in care demand and parental stress between families of children with and without behavioral problems. Through analysis of parent reports, the researchers found that mothers of children with intellectual disability who exhibit problem behavior report significantly more stress than parents of children who do not display problem behaviors.

Floyd and Gallagher (1997) further discovered that parents of children with a mental disability and behavioral problems reported significantly more stress in familial relationships as compared to the non-problematic behavior group. Additional results indicated that regardless of having a disability or illness, children exhibiting excess behavior problems had significantly lower adaptive functioning in the areas of self-care, functional living, and self-direction. The researchers recommended that service providers focus on treatments that provide children opportunities to develop social competence, self-responsibility, and self-control. Floyd and Gallagher also emphasized the importance of providing support to parents of children identified as having mental disabilities and behavioral problems.

Matson, Minshawi, Gonzalez, and Mayville (2006) studied the relationship between individual's expression of behavioral topographies and deficits in social skills and behavioral functioning. The researchers recruited 120 male and female individuals (ages 22-69) diagnos ed with profound mental retardation from a psychological rehabilitation center. Based on information gathered in criterion measures, Matson et al. purposefully assigned the participants to 1 of 4 comparison groups: self-injurious behavior group (SIB; *N* = 30), stereotypy, repetitive behavior group (*N* = 30), stereotypy with SIB group (*N* = 30) and control group (*N* = 30). Researchers collected information

from informants that examined participants' social and behavioral functioning. Using a multivariate analysis of variance to examine group differences on social skills and adaptive behaviors, the authors found statistically significant differences of negative non-verbal social skills between the stereotypy with SIB group and control group. Matson et al. further indicated the stereotypy group demonstrated significantly less adaptive social skills as compared to the control group. Conclusive studies repeatedly show children with intellectual disabilities manifest problem behaviors that significantly limit their ability to function independently.

Interventions for Children with Intellectual Disabilities

Currently, the most common approaches to working with children identified as having an intellectual disability and problem behavior include behavioral methods and pharmacological approaches. This segment will provide an overview of pharmacology and behavior analysis and the hypothesized treatment effectiveness.

Behavioral Treatment Methods

Behavioral theorists purport that externalized, problem behaviors serve as a primary purpose for individuals with intellectual disabilities (Barlow & Havercamp, 1999). According to Barlow and Havercamp, one's behavior is "primarily affected by conditions existing in the person's environment, rather than by intrapsychic processes" (p. 262). Specifically, Reese, Hellings, and Schroeder (1999) argued that children with intellectual disabilities engage in problem behavior to obtain attention, fashion internal stimulation, and avoid tasks, attention, or internal motivation. Thus, the purpose of

treatment is to address contingencies that maintain behavioral responses in the environment.

In the largest mixed-methods analysis of literature to date in the field of special education, Didden, Duker, and Korzilius (1997) found evidence to support three conclusions regarding treatment efficacy of behavioral methods. Specifically, Didden et al. concluded that beneficial behavioral treatments target (a) socially disruptive and internally motivated aberrant behavior, (b) removal or addition of response contingencies, and (c) a functional analysis of behavior. As an outgrowth of these findings, there has been an increase in outcome research addressing functional analysis and applied behavior analysis.

Efficacy of Behavioral Treatment Methods

There is pandemic acceptance of the use of behavioral methods for treating behavioral problems among individuals with an intellectual disability. Research provides support for using behavioral methods in the treatment of behavioral problems among individuals with special needs. In one of the few documented longitudinal studies, McClean et al. (2005) examined the effectiveness of person-focused training in reducing the presence of challenging problem behaviors exhibited by individuals with mental disability over a 7-year period. In the first stage of the experiment, 132 recruited staff members engaged in person-focused training over 6 months. After the completion of the training, staff members began collecting baseline data of client behavior (N = 138) at 2 intervals over 7 years. Based on results from a repeated measures ANOVA,

McClean et al. concluded that positive behavioral supports significantly reduced challenging behavior for 77% of the sample.

Analysis by McClean et al. (2005) of the data implies statistical significance; however, caution in construing results of the study is merited due to numerous methodological flaws. Foremost, McClean et al. did not clearly define the independent variable. Rather, the researchers described person-focused training as a multi-method approach that included four distinct types of strategies: (a) environmental accommodations, (b) skills teaching, (c) direct interventions, (d) and reactive strategies. Additionally, the strategies drew upon practices from psychotherapy, teaching, and behavior analysis. Essentially, the researchers failed to identify which interventions were utilized for decreasing the targeted behavior. The direct care staff also did not record the frequency of the types of interventions commonly used.

Pharmacological Treatment Methods

Pharmacological treatments are widely used for managing emotional and behavioral problems for individuals with an intellectual disability (McGillivray & McCabe, 2004). National and international studies indicate that antipsychotics and narcoleptics are the most commonly prescribed medications for controlling individuals that display problematic forms of behavior. In an international study, McGillivray and McCabe examined data collected from Australia's Department of Human Services in order to evaluate pharmacological management. In reviewing informant-based data from 873 individuals aged 6 to 87 years, the researchers found that 77.8% of the population routinely received antipsychotic medication for controlling behavioral problems.

McGillivray and McCabe also discovered that the individuals in the study were most commonly prescribed antipsychotic, anti-anxiety, and anticonvulsant medications. The authors recommended that researchers engage in rigorous research that promotes a deeper understanding of the rationale and efficacy of using medications to treat problem behavior.

Efficacy of Pharmacological Treatment Methods

In an empirical review of literature, Singh, Matson, Cooper, Dixon, and Sturmey (2004) examined studies conducted on the effectiveness of risperdone as a treatment for individuals with intellectual disability and behavior problems. In their analysis of 47 articles published between 1992 and 1994, Singh et al. located 6 studies that met the following methodological requirements: (a) randomized assignment of participants, (b) placebo control, (c) standardized dosages and evaluations, (d) sound statistical analyses, and (e) standardized dosages and evaluations. The authors found that in a majority of the studies, researchers relied on global assessments of behavior, did not specify the targeted behavior, and failed to measure behavioral change through objective observations. Singh et al. concluded "if we are to be able to accurately use risperdone to treat behavioral symptoms without compromising an individual's quality of life, much needs to be done" (p. 216).

Rationale for Alternative Treatments

As indicated previously, the use of psychopharmacology and behavioral methods for treating individuals identified as having an intellectual disability and mental health

disorder do not consider the emotional, psychological, or developmental aspect of one's existence. Specifically, Seltzer and Krauss (2001) highlighted the paucity of interventions that foster exceptional children's autonomy and self-determination. Goodman and Linn (2003) argued that the use of adult-directed interventions for increasing on-task behavior and decreasing behavior problems may impede children's intrinsic motivation and task mastery. The authors contended that the typical forms of problem behavior displayed by individuals with disabilities may serve as an adaptive and developmentally appropriate means for assimilating experiences. Professionals should use caution, Goodman and Linn concluded, in shaping children's behavior and perhaps design interventions that foster children's self- regulation, choice, and direction.

Mahoney and Wheedon (1999) examined the relationship between teacher style and student direction among 49 children with intellectual disabilities. In their analysis of play observations, the researchers examined children's participation and engagement, and investigated teacher's interaction style. Results from regression analysis revealed that when teachers were non-directive and responsive, children were more likely to engage in self-directed activities and initiate social interactions. Conversely, when teachers were directive, children were less engaged and passive in the play activities. Mahoney and Wheedon concluded that teachers can play a valuable role in effectively responding to the needs of children with disabilities through the facilitation of child-directed play activities.

Theoretical Foundation of Play in Child Development

Play theorists including Vygotsky, Piaget, and Winnicot stressed the importance

of play in child development. They argued that through play, children learn about their environment, develop social skills, and play out their wishes and desires (Brodin, 2005). Moustakas (1959) defined play as "a form of letting go, merging freely into experience, immersing oneself totally in the moment so that there is no distinction between self and object or self and other. Energy, life, spirit, surprise, fusion, awakening, renewal are all qualities of play…it is free-flowing form, opening and expanding in unexpected and unpredictable ways" (p. 2). It is through the play experience that children develop cognitive abilities, social skills, motor skills, and language (Brodin, 2005; Wadsworth, 1986). Through the process of play, children make sense of their environment and experiences as they uncover their sense of self (Landreth, 2002). Researchers have also posited that through play, children learn to gain control and mastery of their world, develop problem-solving skills and empathy, release tension, and assimilate and accommodate past events (Brodin, 2005; Landreth, 2002; Schaefer, 1993).

According to Piaget, a pioneer theorist on the role of play in child development, higher order cognitive development is formed through three primary stages of play: practice play, construction play, and symbolic play (Wadsworth, 1986). Piaget posited that through the first year of life, children engage in practice play characterized by the absence of goal-directed actions, pretense, or symbolism (Wadsworth). Children's engagement in practice play thereby represents control over objects and the pleasure of being in control (Schaefer, 1993). Between the ages of 15 and 24 months, children perform constructive play by combining sensorimotor actions and grouping objects together.

By the second year of life, children begin to mentally represent their worlds

through symbolic play (Schaefer, 1993). During this stage of play development, children utilize their cognitive capacity to assimilate their experiences and engage in make-believe or pretend play (Schaefer). Through this assimilative process on which child-centered play therapy is based, children are able to mentally manipulate their experiences, thoughts, and feelings for meeting their needs and desires (Landreth, 2002; Schaefer; Wilson & Ryan, 2005).

Play Therapy

Play therapy is an emerging tool for therapists forging significant headway in the treatment of children with intellectual disabilities. The Association for Play Therapy (n.d) describes the process of play therapy as "the systematic use of a theoretical model to establish an interpersonal process wherein trained play therapists use the therapeutic powers of play to help clients prevent or resolve psychosocial difficulties and achieve optimal growth and development." According to Schaefer (1993), there are fourteen factors that play a vital role in enhancing the effectiveness of play therapy as an intervention for a wide range of children's emotional, social, and behavioral difficulties. Specifically, Schaefer indicated that children distinctly benefit from the following therapeutic factors of play therapy (Schaefer, p. 6; See Table 3). As Schaefer identified, play therapy provides a unique environment where children can engage in self-expression, gain a sense of control, and increase awareness of their feelings, thoughts, and desires (Landreth, 2002; Schaefer, 1993).

Child-Centered Play Therapy

Paving the way for the development of Schaefer's work, Virginia Axline expanded the field of child counseling by developing child-centered play therapy (CCPT). In formulating the elements of child-centered play therapy, Axline (1974) drew upon the following six necessary and sufficient tenets of Carl Rogers' work: (a) two persons are in psychological contact, (b) the client, is in a state of incongruence, being 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 endeavors to communicate this experience to the client, and (f) the communication to the client of the therapist's empathic understanding and unconditional positive regard is to a minimal degree achieved (Rogers, 1957). Emphasizing Rogers' therapeutic conditions of congruence, empathy, and unconditional positive regard, Axline formulated the following principles to serve as a guide for therapists in their work with children:

1. The therapist must develop a warm, friendly relationship with the child, in which good rapport is established as soon as possible.
2. The therapist accepts the child exactly as he is.
3. The therapist establishes a feeling of permissiveness in the relationship so that the child feels free to express his feelings completely.
4. The therapist is alert to recognize the feelings the child is expressing and reflects those feelings back to him in such a manner that he gains insight into his behavior.
5. The therapist maintains a deep respect for the child's ability to solve his own

problems if given an opportunity to do so. The responsibility to make choices and to institute change is the child's.

Thus, the role of the child-centered play therapist is to provide a therapeutic environment in which the child feels heard, cared about, and understood (Landreth, 2002). Through an active and living relationship, Landreth (2002) proposed, children undergo a sense of mastery and control, increase self-acceptance, direction, and responsibility, and learn to rely on their own internal locus of evaluation.

Table 3

Schaefer's (1993) Beneficial Therapeutic Factors of Play

Therapeutic Factor	Beneficial Outcome
Overcoming Resistance	Working Alliance
Communication	Understanding
Competence	Self-Esteem
Creative Thinking	Innovative Solutions to Problems
Catharsis	Emotional Release
Abreaction	Adjustment to Trauma
Role-Play	Practice and Acquiring of New Behaviors
Fantasy/Visualization	Fantasy Compensation
Metaphoric Teaching	Insight
Attachment Formation	Attachment
Relationship Enhancement	Self-Actualization, Self-Esteem, Closeness to Others
Positive Emotion	Ego Boost
Mastering Developmental Fears	Growth and Development
Game Play	Ego Strength, Socialization

Moreover, Axline (1974) considered the development of children in formulating the tenets of CCPT. Because children's acquisition of language skills develops more slowly in regards to their cognitive skills, Axline posited that toys represent children's words. The use of play materials by children in the stead of words necessitates the presence of a wide array of play materials for expressing a wide range of feelings and thoughts (Axline; Landreth, 2002). Landreth suggested that children's creative use of play in a therapeutic relationship allows children to develop control and mastery over their world and their experiences.

Efficacy of Child-Centered Play Therapy Treatment Methods

Ample evidence suggests that CCPT is an effective approach for treating children with a wide range of social, emotional, and behavioral problems. Empirical research suggest that play therapy improves children's self-concepts (Baggerly, 2004; Post, 1999), external behavioral functioning (Kot, Landreth, & Giorodona, 1998), and language development (Fall, Navelski, & Welch, 2002; Danger & Landreth, 2005; Packman & Bratton, 2003). Studies also indicate that play therapy reduces symptoms of stress in parent-child and teacher-student relationships (Ray, 2007; Ray, Henson, Schottelkorb, Garofano Brown, & Muro; 2008).

To better understand the overall treatment effectiveness of play therapy, LeBlanc and Ritchie (2001) piloted a meta-analysis of 42 play therapy studies. Using hierarchical linear modeling, the researchers found a medium effect size of .66 standard deviations, leading Leblanc and Ritchie to conclude that children in play therapy intervention groups demonstrated 25% more improvement on outcome measures when

compared to non-play therapy treatment groups. In examining therapeutic elements of play therapy, LeBlanc and Ritchie found the length of treatment duration influenced treatment efficacy.

In another meta-analytic study, Bratton, Ray, Rhine and Jones (2005) reviewed results from 93 play therapy outcome studies published from 1953 to 2000. Through their analysis, Bratton et al. found a large effect size (.80) for play therapy treatments. The researchers also found through their examination of outcome differences between humanistic and non-humanistic approaches to play therapy that the mean effect size for humanistic treatments was significantly higher than non-humanistic interventions (p <.03). Further, the authors detected a large effect size (.90) for studies involving developmental-adaptive outcome measures. The results support play therapy as an intervention for children with behavioral, social, and emotional problems, and further reinforce the importance of parental involvement in treatment.

Play Therapy for Children with Intellectual Disability and Problem Behavior

A thorough review of literature highlighted the dearth of recent play therapy outcome research for individuals with intellectual disability. As a result, the available reviews are limited to research conducted as far back as the 1950's.

Mehlman (1953) studied the effects of non-directive group play therapy on the psychological and behavioral functioning of 32 children with mental disability (aged 86 to 140 months). Children were randomly assigned to participate in a play therapy group, an inactive control group, or a group movie in which children viewed movies or listened to stories. Children assigned to group play therapy participated in 2 sessions

per week over 16 weeks. Results of pre- and post- testing on the Haggerty-Olson-Wickman Behavior Rating Scale revealed that children in the play therapy group demonstrated less aggression and behavioral outbursts compared to the comparison groups. Although Mehlman's work contributes to the play therapy literature, there is one apparent flaw. Mehlman failed to consider subject variation by matching children by age in years instead of by mental age, calling into question the applicability of the comparison measures on the varied samples.

In a mixed methods research design, Mundy (1957) examined the impact of non-directive play therapy on intelligence and social adjustment among 22 children with mental challenges. Participants were randomly assigned to non-directive play therapy or a control group. Children in the play therapy group participated in non-directive play therapy for nine months. Through a qualitative analysis, Mundy found children in the play therapy group displayed less temper tantrums and more pro-social behaviors. The author noted children in the play therapy group showed increases in their verbal abilities as compared to children in the control group.

In a similar study, Newcomer, and Morrison (1974) examined the effects of play therapy on the intellectual and social functioning of children with intellectual disability. Participants in the study were recruited from an institutional setting and randomly assigned to either individual non-directive play therapy, directive play therapy, or a no-treatment control group. Children assigned to the play therapy groups participated in 30 sessions over 18 weeks. Mean scores on the subscales of the Denver Developmental Screening Test were significantly different between the play therapy groups and control group, depicting more improvement for children in the play group as compared to the

control group in language, social skills, gross motor skills, and adaptive skills compared to the control group. Newcomer & Morrison concluded that children in the play therapy treatment groups appeared to demonstrate more motivation compared to children in the control group.

In a descriptive multiple-case study, Hellendorn (1994) examined the therapeutic relationship between play therapists (*N* = 13) and individuals with a mental handicap (*N* = 20). Specifically, Hellendorn studied differences in therapeutic goals, play therapy referrals, therapy phases, and treatment results. The researcher investigated therapist and caregiver reports of 20 individuals aged 4 to 65 years of age, with mental ages corresponding between 1.8 and 7 years. Hellendorn found through analysis of pre- and post- behavioral measurements that play therapy improved the behavioral functioning of individuals demonstrating problem behaviors and thus concluded that successful treatment outcomes are related to the therapists' establishment of well-defined goals.

Although results of the study indicate the usefulness of play therapy as an intervention in reducing challenging behavior for individuals with an intellectual disability, the researcher did not thoroughly explain the therapists' approach to play therapy. Additionally, participants in the study had a mental age range between 1.8 and 7 years, therefore Hellendorn did not measure change with a homogenous sample.

Criticisms of Available Play Therapy Research Methodology

While the results presented in the literature suggest that individuals with both a mental handicap and problem behavior benefit from play therapy, there are numerous limitations in the available research of play therapy. Most studies included in this review

did not examine emotional and behavioral change among participants consistently. The discrepancy among researchers in assessing behavioral and psychological change may be related to the variety of assessment measurements and procedures used by researchers across studies. For example, Hellendorn (1994) used intelligence and developmental tests to determine skill levels, whereas Mundy (1957) used observational data. Hence, the variance explained among participants' emotional, behavioral, social, and psychological improvement is greatly affected by different research methods.

The diversity of samples used in each study is also an attributing factor in varying emotional and behavioral change among individuals with a mental handicap. As reported by Hellendorn (1994), participant's mental age ranged from 1 to 7 years; whereas participants in Newcomer and Morrison's study had a mental age between 3 and 6 years. Because the literature suggests that there is a positive correlation between mental age and the capacity to produce play behaviors, it is imperative for researchers to consider creating a sample that is homogeneous by mental age. Considering the limitations in the previously reviewed studies, the need has emerged for a methodologically sound play therapy examination of the effect of play therapy on the behavioral functioning of children with intellectual disabilities.

Single Subject Research Design

Practitioners working with children identified as having an intellectual disability have commonly utilized single-subject research. Because of the individualized needs of children with a mental handicap and problem behavior, Tankersley, Cook, and Cook (2008) posited that single-subject research design is an optimal approach for

establishing evidence-based interventions. Additionally, Lundervold and Belwood (2000) argued single-case research is the "best kept secret" in the field of counseling as professionals can utilize the design elements to establish an improved connection between an intervention and target of change.

According to Tankersley, Harjusola-Webb and Landrum (2008), researchers apply single-subject research to draw inferences about an individual's behavior across baseline and treatment conditions. Minimally, participants' targeted behavior is continuously observed in at least one baseline condition and one treatment condition (Harjusola-Webb et al.; Tankersley et al., 2008). In examining behavioral changes from baseline to treatment, one is able to make "causal inferences-that the intervention causes the changes in student's behavior or performance" (Harjusola-Webb et al., p. 84.; Tankersley et al., 2008).

In order to make scientifically validated inferences, Barlow and Hersen (1987) suggested that researchers incorporate the following essential elements into their single-subject design: (a) continuous assessment, (b) systematic introduction and withdrawal of the independent variable, (c) and analysis of individual change across treatment conditions. Tankersley et al. (2008) highlighted the importance of measuring participants' change across conditions consistently and continuously. Tankersley et al. also indicated that by continuously using a trustworthy measurement to assess behavioral changes, researchers can observe behavioral trends.

Another essential feature in single-case research is the methodical introduction and withdrawal of the baseline and treatment conditions (Kennedy, 2005; Morgan & Morgan, 2009; Tankersley et al., 2008). Tankersley and Cook et al. indicated that the

careful introduction and withdrawal of conditions reduces the effects of extraneous factors and conditions. Prior to systematically introducing the intervention, Barlow and Hersen (1987) posited that researchers must establish stable baseline levels of the target behavior. In establishing baseline levels, researchers assess the frequency of target behavior to set a "standard by which subsequent improvement is judged" (Lundervold & Belwood, 2000; Morgan & Morgan).

Analysis of individual change across conditions, the process by which researchers reveal within-participant behavioral changes, is also a necessary tool in single-subject research (Lundervold & Belwood). According to Barlow and Hersen (1987), behavioral changes are primarily evaluated through visual analysis that examines changes in mean, level, and trend across conditions. Horner et al. stated that a functional relationship between the dependent and independent variable is demonstrated by (a) short latency between manipulation of the independent and dependent variables, (b) large changes in mean scores across phases, and (c) trends that follow predicted patterns.

Single Case Design and Play Therapy

Several researchers have utilized single case research to examine the efficacy of play therapy for reducing children's problems as related to developmental delays (Garofano-Brown, 2007) and Attention Deficit Hyperactivity Disorder (ADHD) symptoms (Schottelkorb & Ray, 2009). Results from Schottelkorb and Ray's study indicated that both qualitative and quantitative components of single case design assist researchers in determining treatment effectiveness. The authors further stressed the importance of

establishing stable baseline data, and suggested that researchers extend the length of the baseline condition in order to increase the likelihood of data stability (Ray & Schottlekorb, 2010).

Summary of Literature Review

Children identified as having an intellectual disability and behavioral problems have difficulty maintaining relationships with others, have reduced access to learning and leisure environments, and have difficulty functioning in an adaptive manner (Murphey et al., 2005). Because of the social significance of the effects of exhibiting problem behaviors, children with intellectual disabilities are in need of treatments that address not only externalized behavior, but also their emotional development and well-being (Seltzer & Krauss, 2001). To this end, an intervention that focuses on a child holistically, rather than simply their behavior may provide an impetus for a child to change, and may result in increased autonomy and self-control. Child-centered play therapy as a treatment for fostering children's self-control and mastery over experiences may serve as a useful intervention for exceptional children with problem behaviors. To date, few studies have examined the role of play therapy in improving the behavioral functioning of children identified as having an intellectual disability.

CHAPTER 3

METHODS AND PROCEDURES

The purpose of this study was to examine the effectiveness of play therapy as an intervention that reduces teacher-identified and parent-identified behavioral problems among children diagnosed with an intellectual disability. Specifically, a single subject research design was used to investigate changes in children's behaviors across baseline and treatment conditions. A more detailed description of the research question, instrumentation, and statistical analysis methods used in this study follows.

Research Question

Does child-centered play therapy (CCPT) decrease problem behaviors exhibited by children with an intellectual disability as measured by educational staff and parents?

Definition of Terms

Intellectual Disability

In this study, intellectual disability was defined by the American Association on Mental Retardation (2000) as "a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills" (p. 8). For the purpose of this study, intellectual disability was operationally defined by the fourth edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition Text Revision (DSM-IV-TR , 2000) an impaired IQ level of 70 or below.

Behavior Problems

These are defined as excessive behaviors that have significant social consequences. Such behaviors may include irritability, lethargy, stereotypic behavior, hyperactivity, and inappropriate speech. Problem behaviors were operationally defined by scores on subscales of the Aberrant Behavior Checklist (Aman & Singh, 1985; ABC).

Developmental Age

In this study, developmental age referred to the child's emotional, intellectual, social, and physical level of developmental functioning as measured by the Gesell Developmental Observation (Gesell, Ilg, Ames, & Baker, 1981).

Child-Centered Play Therapy (CCPT)

CCPT was defined by Landreth (2002) as a "dynamic interpersonal relationship between a child and a therapist trained in play therapy procedures who provides selected play materials and facilitates the development of a safe relationship for the child 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.16).

Participant Selection

For the purpose of this study, the targeted population included children from one Southwest elementary school aged between 5 and 9 that were identified with an intellectual disability and borderline or clinical problem behaviors as measured by the

Aberrant Behavior Checklist (ABC). From the purposeful sample, two students that met requirements for having an intellectual disability as reported in their Individualized Education Plan (IEP) and were teacher referred for behavioral problems were invited to participate in the study. Based on data collected from teacher and parent reports, two students qualified for this study because their scores on the ABC fell within the borderline or clinical range.

Selection-eligibility Procedures

Information pertaining to the study was presented to the school counselor, principal, and special education staff from one self-contained classroom. The school counselor and special education teacher were asked to refer participants that exhibited problem behaviors and met diagnostic requirements for an intellectual disability ranging from mild to severe. Based on referral information, two participants were invited to participate in the study. A letter detailing the rationale of the study as well as information regarding permission to participate was sent home with the invited participants for parental or guardian consent.

Consent

Approval to conduct this study was solicited through the Institutional Review Board (IRB) from the University of North Texas. Informed consent procedures were followed and consent was obtained from the school district, principal, special education teacher, educational aide, and parents or guardians of participants (see Appendix A & B).

Participants

Participant 1: Background Information

Andrea was a 5-year-old Caucasian female kindergarten student who resided with her biological mother and father, and two older siblings. Andrea qualified for this study because she was diagnosed as having a moderate intellectual disability and exhibited clinical or borderline forms of hyperactivity and irritability behaviors. Specifically, Andrea's mother rated her hyperactivity behaviors (*T*-score=64) and irritability behaviors (*T*-score=58) in the clinical range. Andrea's teacher rated her hyperactivity behaviors (*T*-score=64) and irritability behaviors (*T*-score=69) in the clinical range.

Andrea was diagnosed by a school diagnostician at age 3 as having a moderate intellectual disability and speech impairment. The school diagnostician used the Vineland Adaptive Behavior Scale to identify her intellectual disability. Results revealed that Andrea's adaptive behavior composite score fell in the moderate range (50-60). The Peabody Picture Vocabulary Test, third edition (PPVT-3) was used to assess her level of speech development. Results indicated that Andrea's speech communication composite score fell in the moderate range (50-60). Andrea was educated in a self-contained special education classroom with 7 other children, 1 teacher, and 2 educational aides. At the beginning of this study, Andrea had been a member of the self-contained classroom for 6 weeks. Further, Andrea received speech therapy services, adaptive physical education services, and occupational therapy services as part of her individualized education plan (IEP).

Andrea's mother reported having a normal pregnancy without complications and indicated that Andrea's developmental milestones were not normal. Andrea's mother reported that Andrea maintains good health, has not experienced any major illnesses or hospitalizations, and does not take medications on a regular basis. She further reported that Andrea exhibits behavioral problems in the form of pinching, hitting, punching, and screaming. S he also indicated that behavioral antecedents have not been identified and reported that she has not sought services for reducing Andrea's problem behaviors. Andrea's mother reported that Andrea's strengths included her social skills, energy, and humor.

Participant 1: Treatment Protocol

After obtaining consents to participate in this study, Andrea's mother and classroom teacher completed the ABC. During the baseline phase, Andrea's teacher and educational aide completed the ABC three times per week on alternate days for 2 weeks (see Table 4). The Gesell Developmental Observation was also administered to Andrea for the purpose of establishing her level of developmental functioning.

After baseline was established, the play therapy intervention was introduced. During the intervention phase of the study, Andrea participated in three 30-minute play therapy sessions per week for 5 weeks. Andrea's teacher and educational aide continued to rate Andrea's behavior three times per week on alternate days throughout the duration of the intervention phase. During the maintenance phase, Andrea's teacher and aide continued to use the ABC to rate her behavior three times per week. During this phase, Andrea was administered the Gesell Developmental Observation.

After the maintenance phase ended, Andrea's mother completed the ABC and follow-up interviews were conducted with Andrea's mother, teacher, and educational aide.

Table 4

Andrea's Treatment Protocol

Week	Phase	Intervention	Instruments
Week 1	Baseline	None	Gesell, ABC-Parent, teacher, aide
Week 2	Baseline	None	ABC-Teacher and aide
Week 3	Intervention	CCPT	ABC-Teacher and aide
Week 4	Intervention	CCPT	ABC-Teacher and aide
Week 5	Intervention	CCPT	ABC-Teacher and aide
Week 6	Intervention	CCPT	ABC-Teacher and aide
Week 7	Intervention	CCPT	ABC-Teacher and aide
Week 8	Intervention	CCPT	ABC-Teacher and aide
Week 9	Maintenance	None	Gesell, ABC-Parent, teacher, aide
Week 10	Maintenance	None	ABC-Teacher and aide
Week 11	Post-Study	None	Interviews

Participant 2: Background Information

Randy was a 6-year-old Mexican-American male second grade student who resided with his biological mother and father, and four older siblings. Randy qualified for this study because he was diagnosed as having a moderate intellectual disability and exhibited clinical or borderline forms of hyperactivity and irritability behaviors.

Specifically, Randy's mother rated his hyperactivity behaviors (*T*-score= 55) and irritability behaviors (*T*-score =65) in the borderline range. Randy's teacher rated his hyperactivity behaviors (*T*-score=55) and irritability behaviors (*T*-score=58) in the borderline range.

Randy was diagnosed at age 3 as having a moderate intellectual disability and a speech impairment by a school diagnostician. The school diagnostician used the Vineland Adaptive Behavior Scale to identify his intellectual disability. Results revealed that Randy's Adaptive Behavior composite score fell in the moderate range (50-60). The Peabody Picture Vocabulary Test, third edition (PPVT-3) was used to assess his level of speech development. Results indicated that his composite speech communication score fell in the severe range (20-40). Randy was educated in a self-contained special education classroom with 7 other children, 1 teacher, and 2 educational aides. At the beginning of this study, Randy had been a member of his classroom for 3 years and 6 weeks. Further, Randy received speech therapy services and adaptive physical education services as part of his IEP.

Randy's mother reported having a normal pregnancy without complications and indicated that his developmental milestones were not normal. Randy's mother further reported that he was diagnosed as having Down syndrome at birth. She indicated that Randy maintains good health, has not experienced any major illnesses or hospitalizations, and does not take medications on a regular basis. She further reported that Randy exhibits behavioral problems in the form of pinching, biting objects, temper tantrums, and hitting. She also indicated that behavioral antecedents had not been identified and reported that she had not sought services for reducing Randy's problem

behaviors. Randy's mother reported that his strengths included singing, dancing, and computer skills.

Participant 2: Treatment Protocol

After obtaining consents to participate in this study, Randy's mother and classroom teacher completed the ABC. During the baseline phase, Randy's teacher and educational aide completed the ABC three times per week on alternate days for 2 weeks (see Table 5).

Table 5

Randy's Treatment Protocol

Week	Phase	Intervention	Instruments
Week 1	Baseline	None	Gesell, ABC-Parent, teacher, aide
Week 2	Baseline	None	ABC-Teacher and aide
Week 3	Intervention	CCPT	ABC-Teacher and aide
Week 4	Intervention	CCPT	ABC-Teacher and aide
Week 5	Intervention	CCPT	ABC-Teacher and aide
Week 6	Intervention	CCPT	ABC-Teacher and aide
Week 7	Intervention	CCPT	ABC-Teacher and aide
Week 8	Intervention	CCPT	ABC-Teacher and aide
Week 9	Maintenance	None	Gesell, ABC-Parent, teacher, aide
Week 10	Maintenance	None	ABC-Teacher and aide
Week 11	Post-Study	None	Interviews

The Gesell Developmental Observation was also administered to Randy for the purpose of assessing his level of developmental functioning. After baseline was established, Randy began participating in three 30-minute play therapy sessions per week for 5 weeks. Randy's teacher and educational aide continued to rate Randy's behaviors three times per week on alternate days throughout the duration of the intervention phase. During the maintenance phase, Randy's teacher and aide continued to use the ABC to rate his behavior three times per week. Moreover, Randy's developmental age was assessed using the Gesell Developmental Observation. After the maintenance phase ended, Randy's mother completed the ABC and follow-up interviews were conducted with Randy's mother, teacher, and educational aide.

Instruments

Aberrant Behavior Checklist

The Aberrant Behavior Checklist (ABC) was developed in 1986 by Michael Aman and Nirbhay Sing for rating problem behaviors exhibited by individuals with an intellectual disability. The ABC is an informant-report assessment administered by individuals that have sufficient knowledge of participant's behavior. The ABC is a 58 item checklist specifically designed to evaluate the effects of treatment interventions. Informants, including teachers, parents, or staff members rate subject's behaviors on a scale of 0 (indicating no problem) to 3 (severe problem). The ABC delineates scores in five behavior sub=scales: irritability, lethargy, stereotypy, hyperactivity, and inappropriate speech.

The standard scores were derived based on the analysis of 465 institutionalized

residents. The ABC was standardized on children from New Zealand (*N* = 754) and the United States (*N* = 508). Aman and Sing reported that internal-consistency reliabilities for the five subscales fell between .86 and .95. The authors also indicated that the alpha coefficients for test-retest reliability fell between .96 and .99. Alpha coefficients for interrater reliability fell in the acceptable range (.55 to .69). Results from studies examining the validity of the ABC indicate that there is well established content and concurrent validity (Karabekiroglu & Aman, 2009).

In this study, participants' classroom teacher and one educational aide were invited to participate in this study as raters. Because both participants were in the same classroom, the same teacher and aide rated both children. The teacher had earned a bachelors degree in special education and had served as a special education teacher for 15 years. The educational aide did not have specialized training in special education and indicated that she had served as an aide in the present classroom for 3 years. Prior to the beginning of the study, both observers attended a one hour training session led by the researcher on how to administer the ABC. In adhering to procedures outlined in the manual (Aman & Sing; 1986), observers were provided with a description of the measured behaviors and were also given information regarding scale demarcation.

Gesell Developmental Observation

The Gesell Developmental Observation tool was developed in 1981 for assessing children's developmental functioning (Gesell et al., 1981). The Gesell Developmental Observation is a specially designed tool for determining maturational age that can only be administered by individuals that have successfully completed

training and certification requirements. Administration procedures include observing and approximating children's emotional, cognitive, social, and physical behaviors with normative clusters of behavior. Through examination of behavioral patterns, developmental age is identified. In this study, an advanced doctoral student with specialized training in implementing the Gesell Developmental Observation tool administered the assessment to both participants.

Description of Treatment

Participants in this study received three 30-minute individual child-centered play therapy (CCPT) sessions per week for 5 weeks. The therapist followed the described CCPT treatment protocol.

Child-Centered Play Therapy (CCPT)

CCPT is a unique therapeutic approach for working with children. The fundamental theoretical base of CCPT is the therapist's belief in children's innate actualizing tendency which leads one toward independence, autonomy, socialization, and responsibility (Rogers, 1951). Thus, the therapist's primary role in CCPT is to provide a therapeutic environment whereby a child feels heard, understood, and accepted (Landreth, 2002). The child-centered therapist attempts to experience the world from the child's perspective and mirror this perception back to the child. Hence, therapists do not take an active role in explaining or interpreting experiences to children in play therapy. Rather, therapists believe that through a caring relationship, children will access their own inner resources (Landreth, 1993).

Child-Centered Play Therapy (CCPT) Protocol

Ray (2009) highlighted the importance of the therapist's way of being with children by emphasizing the use of specific therapeutic non-verbal and verbal responses. Ray suggested that play therapists impart acceptance and understanding through the following expressions: (a) open and interested non-verbal (stance), (b) congruent match between therapist's tone and child's affect, (c) genuine match between the therapist's verbal expression and affect, (d) short responses that match the child's level of interaction, (e) reflection of the child's verbal expressions, and (f) reflection of the child's feelings. Ray also recommended that play therapists respond to children in ways that foster decision-making, creativity, and esteem. Thus, a play therapist fully demonstrates the way of "being with the child, sharing his experience, encouraging the child to express and explore his feelings, accepting the child's expressions, listening fully to the child, perceiving the essence of the his expressions, and relating with respect and empathy" (Moustakas, 1959; p. 219).

In this study, I, an advanced doctoral student in counselor education, provided play therapy to both participants. I have completed 5 courses in play therapy instruction and supervision and fulfilled requirements for procuring a play therapy specialty. I also held a teaching certificate in special education and had served as a special education teacher for 5 years. In this study, I adhered to treatment protocol as outlined in the Child-Centered Play Therapy Manual (Ray, 2009).

Treatment Integrity

In following the protocol, all play therapy sessions were recorded and an

independent reviewer used the Play Therapy Skills Checklist (Ray, PTSC; See Appendix G) to appraise treatment integrity. Specifically, an advanced play therapist working toward a doctoral degree in counseling reviewed five minutes of 10% of all play therapy recordings and used the PTSC to rate therapist responses. The PTSC protocols were analyzed and a percent agreement for CCPT verbal responses was calculated. Results indicated that agreement percentage for CCPT verbal responses was 99%, suggesting that treatment fidelity was optimal.

Play Materials

According to Landreth (2002), play materials can be classified into the following categories: real-life toys, acting out and aggressive toys, and creative expression and release toys. To optimize children's self-expression in the therapeutic relationship, Landreth (2002, p.144-145) recommended therapists incorporate the following play materials in the play space:

Doll family and furniture	Truck, airplane, car, boat
Bendable doll family	School bus, ATV
Pacifier and nursing bottles	Pounding bench and hammer
Chalkboard, chalk, eraser	Bop bag, toy soldiers, tinker toys
Dishes, silverware, pans	Dart gun and rubber knife
Pitcher, dishpan	Zoo animals, farm animals
Stove, refrigerator	Rope and handcuffs
Empty fruit and vegetable cans	Xylophone, cymbals, drum
Sponge and towel	Broom and dust pan

Firefighters hats and other hats	Crayons, pencils, papers,
Paints, easel, tissues	Sandbox, spoon, funnel, pail
Egg cartons and play dough	Pipe cleaners and popsicle sticks
Telephone, medical kit, band aids	Play money and cash register
Large and small balls	Construction paper, scissors
Hand puppets	Alligator, rubber snake

Data Collection Procedures

A single-case, A-B-A experimental research design, was used to investigate the effect of play therapy on problem behaviors exhibited by individuals with an intellectual disability. Once parental consent was obtained, I interviewed participants' parents to gain significant background information (Appendix D). To ensure participants met criterion specified in this study, participants' parents and classroom staff completed the Aberrant Behavior Checklist (ABC). During the baseline phase, the classroom teacher and aide observed participants' behaviors during school hours on 3 alternate days. At the end of each day, the observers rated each participant's behaviors using the ABC. Because Horner et al. (2005) recommended documentation of 5 or more data points to establish baseline patterns, baseline data was collected three times per week over a 2 week period, resulting in 6 data points.

Once baseline patterns were established, I systematically introduced 30 minute individual CCPT sessions three times per week. Following the treatment phase, participants' entered the no-treatment maintenance phase. During all phases of this study, the dependent measure was assessed through administration of the ABC three

times per week. Participants' parents completed the ABC twice during the course of this study: (a) during baseline, and (b) during the maintenance phase. The Gesell Developmental Observation was also administered to both participants for the purpose of assessing their developmental age during the baseline and maintenance phases.

Data Analysis

Participant's behavioral responses across conditions were analyzed using visual analysis. Specific visual analyses included changes in trend, level, and variability within and across the baseline, intervention, and maintenance phases. A detailed description of how the data was analyzed in this study follows.

According to Barlow and Hersen (1987), evidence of an effective intervention is demonstrated by meaningful differences between the participant's mean scores across conditions. To determine whether a functional relationship existed between the independent and dependent variable, I examined differences between participants' mean scores across conditions. Barlow and Hersen suggested that the strength of treatment effect is examined by analyzing the immediacy and magnitude of change in mean performance between baseline and treatment phases. Thus, each participant's mean performance across each phase of the study was visually inspected to assess changes in level during the periods whereby the intervention was introduced and withdrawn.

Tankersley, Harjusala-Webb, and Landrum (2008) suggested that the change in trend is the best evidence for supporting a treatment effect in single subject research design. To this end, I analyzed the ascending or descending trend in data across

conditions and quantified the "increase or decrease of best-fit straight line" by calculating the least squares regression (Horner et al., 2005). Coefficient of determination values were also computed to assess the predicted trend. The R^2 effect size values were interpreted following Cohen's guidelines (1988). According to Cohen's suggestion, an R^2 value of .01 demonstrates a small effect, a R^2 value of .09 indicates a medium effect, and an R^2 value of .25 demonstrates a large effect.

In addition to performing visual analyses, the magnitude of treatment effect was analyzed by calculating the percent of non-overlapping data (PND) between baseline and treatment phases (Morgan & Morgan, 2009). Because play therapy was expected to decrease participants' behaviors, PND was calculated using the percentage of treatment data that overlapped with the lowest data point evidenced during the baseline phase. Specifically, visual and descriptive analyses were conducted to examine the number of treatment phase data points that fell below the baseline data point with the least magnitude. The number of treatment data points that did not overlap with the lowest data point were summed and multiplied by 100. Table 6 provides guidelines for interpreting PND scores.

Table 6

Interpretation of PND Scores (Morgan & Morgan, 2009)

PND Values	Interpretation
90% or greater	Very effective treatment
70-90%	Effective treatment
50-70%	Questionable treatment
> 50%	Ineffective treatment

CHAPTER 4

RESULTS

This study was designed to examine the effect of play therapy on problem behaviors among children identified with an intellectual disability. Using a single subject research design, changes in participants' problem behaviors were evaluated across non-intervention and intervention conditions. The dependent variable, problem behaviors, was measured using teacher ratings on the Aberrant Behavior Checklist. In this chapter, I present the findings of this study, including (a) visual analysis of participant's targeted behavior, (b) results of parent assessments, (c) results of developmental observation, (e) findings from parent and teacher feedback.

Participant 1: Andrea

Andrea's school counselor and teacher referred Andrea for participation in this study. After obtaining consents, Andrea's teacher and mother completed the Aberrant Behavior Checklist (ABC). Results of initial testing revealed that Andrea qualified to participate in the study because teacher and parent ratings of her behaviors fell in the clinical range on the hyperactivity and irritability subscales of the ABC.

Behavioral Measurement

Andrea's behaviors were assessed through repeated measurement over 9 weeks. Andrea's teacher and aide were instructed to rate her behavior on 3 alternate days at the end of each school day for the entire duration of the study. The following

section displays the raters' averaged scores for the hyperactivity and irritability subscales across baseline, play therapy, and maintenance conditions.

Analysis of Andrea's Hyperactivity Scores

Andrea participated in 2 weeks of a non-intervention baseline, 5 weeks of play therapy on three alternate days per week, and 2 weeks of a no-intervention maintenance phase. Figure 1 provides a graphical analysis of Andrea's behavior on the hyperactivity subscale of the Aberrant Behavior Checklist (ABC) across baseline, intervention, and maintenance conditions.

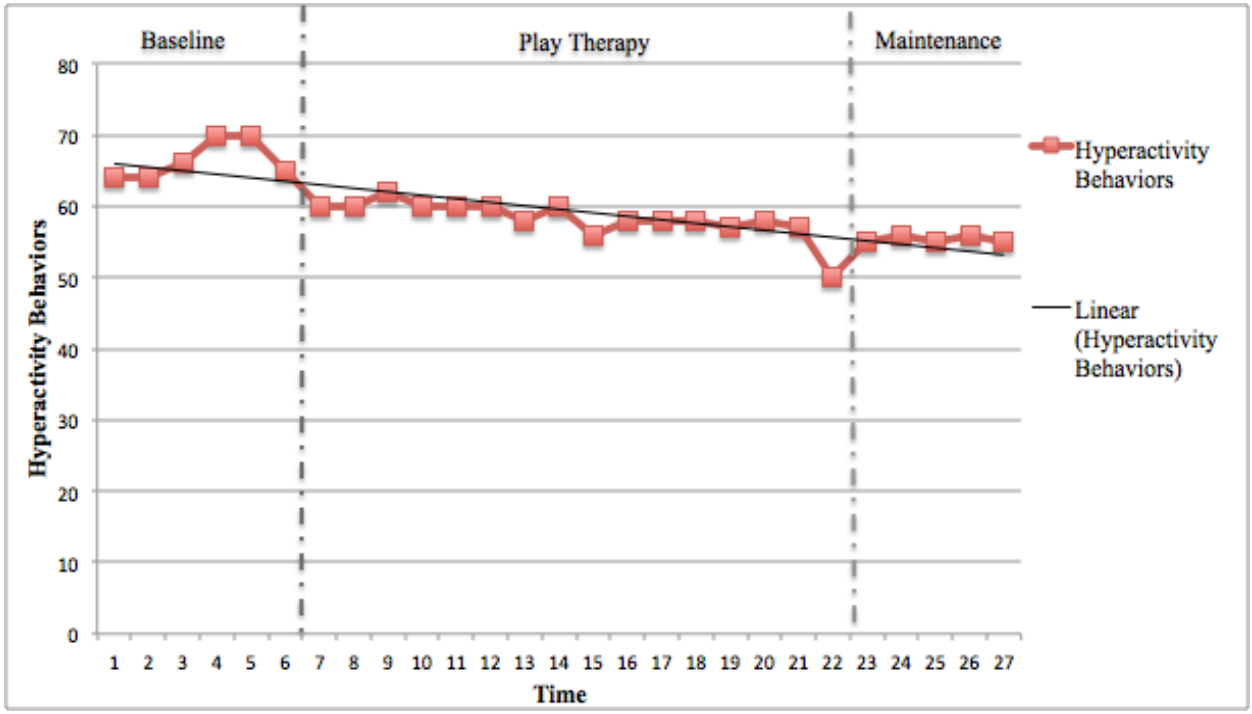

Figure 1. Andrea's hyperactivity behaviors as rated on the ABC during the baseline, play therapy, and maintenance phases.

The graph revealed an immediate decrease in the level of hyperactivity behaviors following introduction to the play therapy condition. Graphical analysis further indicated

a decrease in the level of the maintenance phase from the play therapy phase. Specifically, the baseline level of 66.5 decreased to 59.18 during the play therapy phase, and decreased to a level of 54.5 during the maintenance phase (see Table 7).

Visual inspection of the level across phases suggested that Andrea's hyperactivity behaviors decelerated over time. Results of trend analysis revealed a moderate downward trend, indicating that Andrea's exhibition of hyperactive behaviors decreased during the play therapy intervention and continued to decrease during the maintenance phase. Calculation of the least squares regression line further highlighted a large treatment effect and signified a large relationship (R^2 = .72, *r* = .85) between treatment phases and time. Analysis of variability between conditions revealed low variability between the baseline and play therapy condition, with a standard deviation (*SD*) of 2.8 in the baseline phase and a standard deviation (*SD*) of 2.3 in the treatment condition.

To further examine the magnitude of the treatment effect, the percent of non-overlapping data (PND) statistic was computed. Because play therapy was intended to decrease Andrea's exhibition of hyperactivity behaviors, a horizontal line was drawn from point 64 in the baseline phase and extended into the treatment phase (see Figure 2). Results indicated that 15 of 15 (100%) of the data points in the play therapy phase have values less than 64, thereby indicating that play therapy was a very effective treatment for reducing Andrea's hyperactivity behaviors. The PND results indicated that once the treatment phase began, scores on the ABC decreased and never returned to baseline levels.

Table 7

Descriptive Statistics and Effect Size for Andrea's Hyperactivity Scores

Descriptors	Baseline	Play Therapy	Maintenance
Mean	66.5	59.18	54.5
Standard Deviation	2.8	2.3	2.3

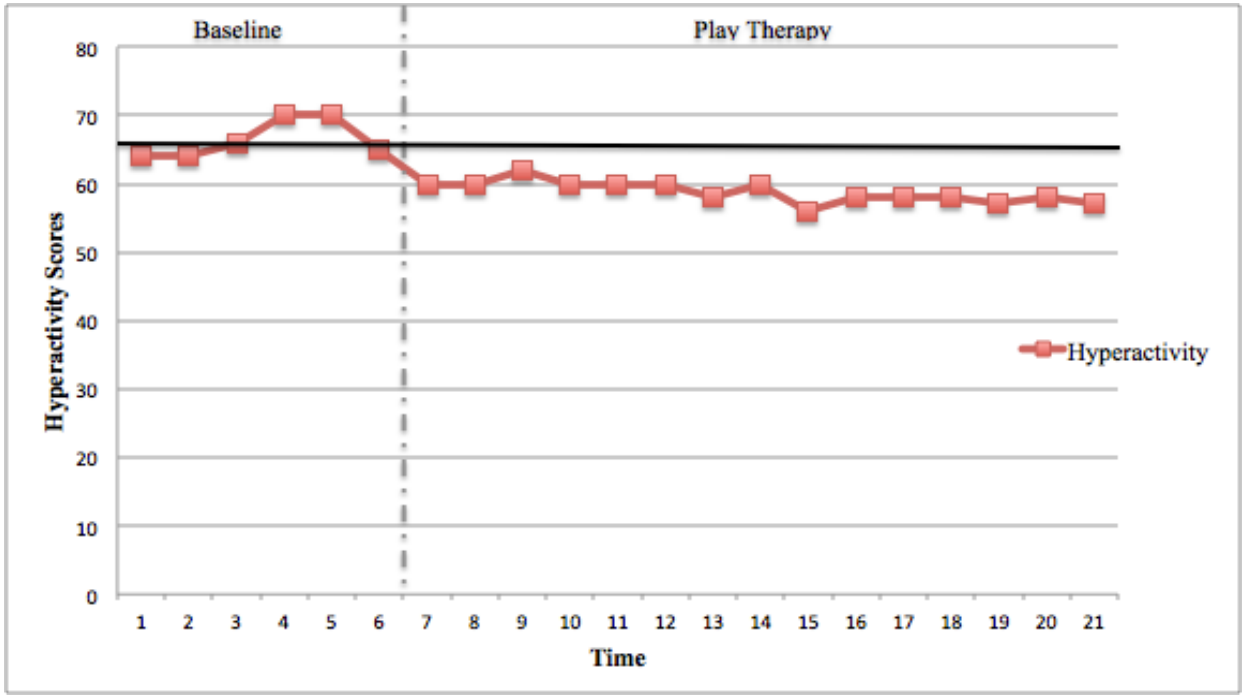

Figure 2. PND calculation for Andrea's hyperactivity behaviors.

Individual Condition Analysis

To investigate changes within conditions, the level, trend, and variability for each phase were analyzed separately. Figure 3 depicted the presence of a moderate accelerating trend in the baseline phase, with a large effect between an increase in Andrea's hyperactivity behaviors and time (R^2 = .26, *r* = .51). Trend line analysis suggested that Andrea's exhibition of hyperactivity behaviors accelerated without

treatment. Further, results showed an increasing trend followed by a decreasing trend during the last data collection. As noted by the teacher and aide, Andrea was in school for only part of the school day during this collection period. Therefore, it seems likely that her behaviors were underreported on this day. Moreover, because the slope of the curve was minimal and the variability was low, the treatment intervention was introduced.

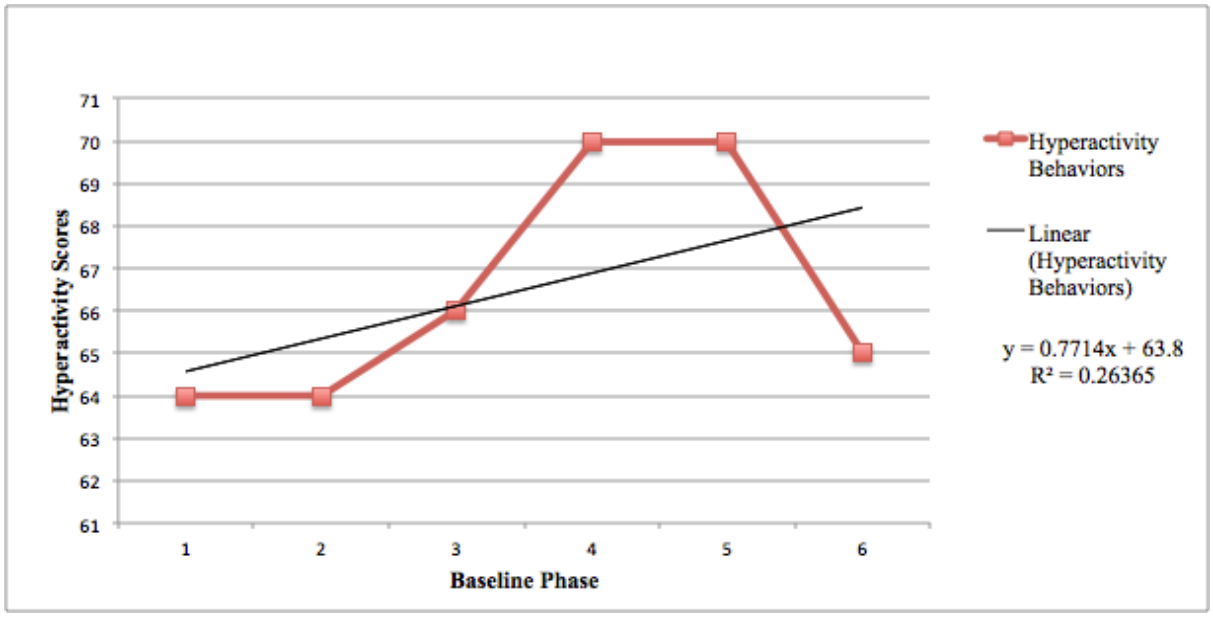

Figure 3. Andrea's hyperactivity behaviors as rated on the ABC during the baseline phase.

As illustrated in Figure 4, the data revealed a moderate decelerating trend in the play therapy phase, with a strong relationship between declining hyperactivity behaviors over time (R^2 =.63, *r* = .80). The effect size indice revealed a large effect (Cohen,1988). Results suggested that Andrea's exhibition of hyperactivity behaviors improved during the play therapy phase. A level of 59.2 with a standard deviation (*SD*) of 2.2 further highlighted low variability during the treatment phase.

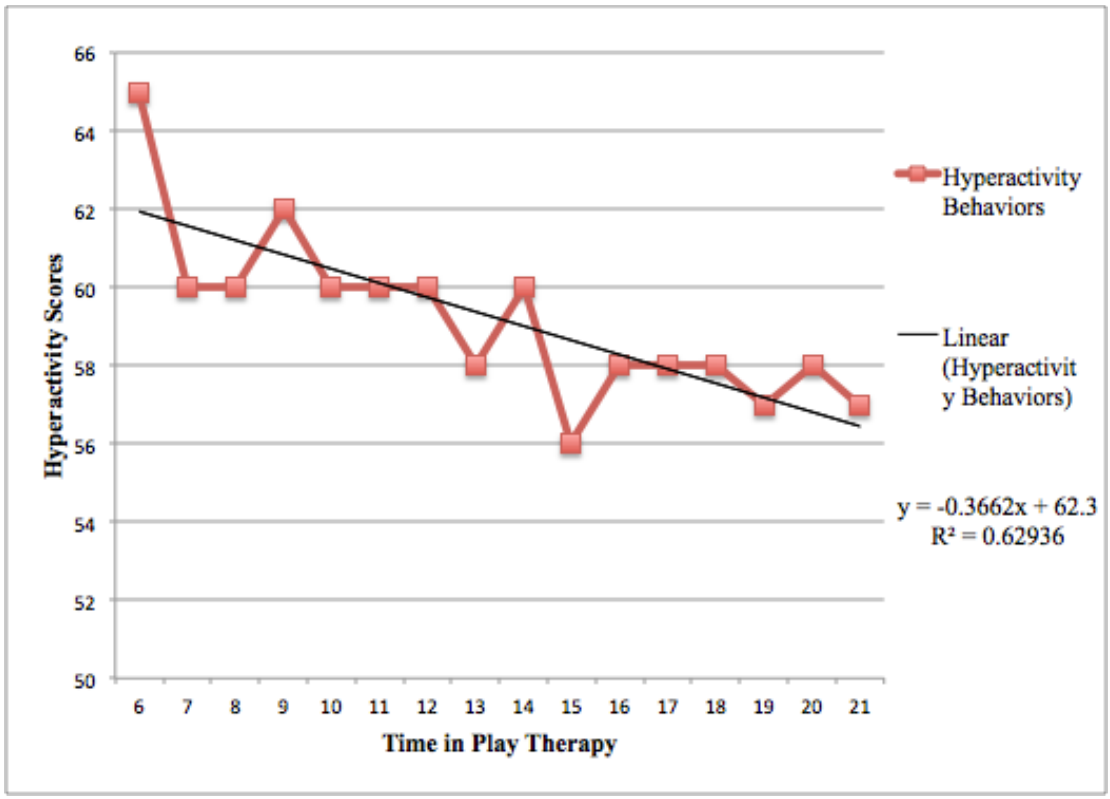

Figure 4. Andrea's hyperactivity scores as rated by observers on the ABC during the play therapy phase.

Analysis of the maintenance condition indicated the presence of a low accelerating trend, with a strong relationship between increasing hyperactivity behaviors and time (R^2 = .41, *r* = .64). Effect size indicated a large effect (Cohen, 1988). Results suggested that Andrea's hyperactivity behaviors increased as play therapy was withdrawn. A level of 54.5, however, indicated that Andrea's hyperactivity behaviors were lower during the maintenance phase than in the baseline and play therapy phases. Further, a standard deviation of 2.3 suggested that Andrea's hyperactivity behaviors remained fairly consistent during this phase. Figure 5 graphically portrays these results.

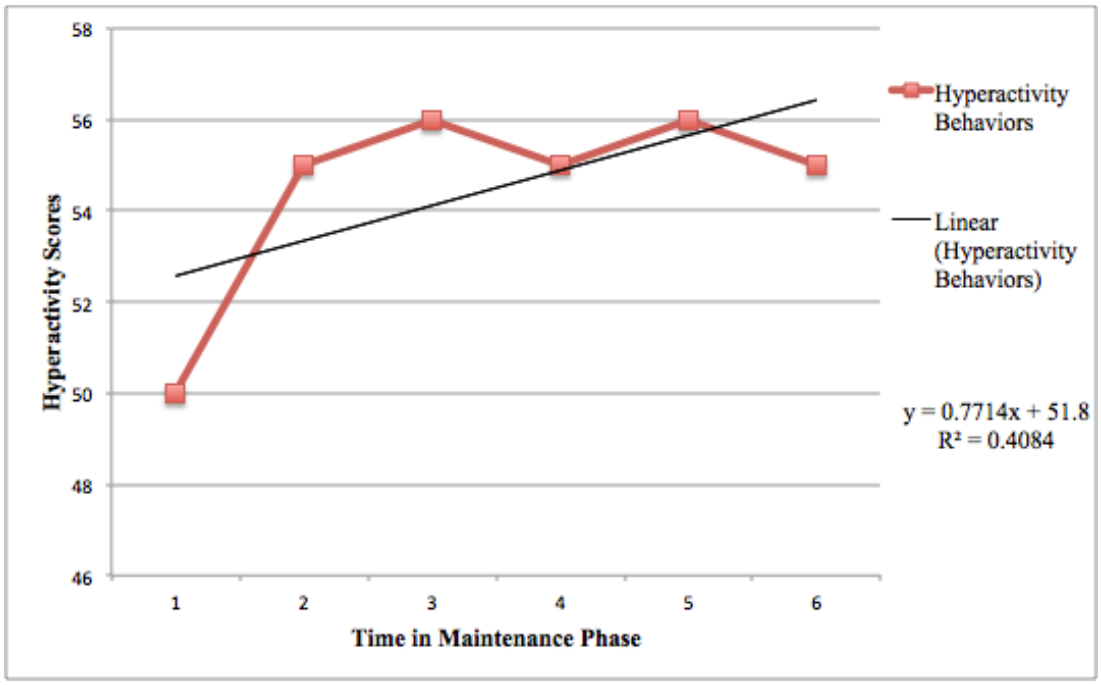

Figure 5. Andrea's hyperactivity scores as rated by observers on the ABC during the maintenance phase.

Visual Analysis of Andrea's Irritability Scores

Figure 6 provides a graphical analysis of Andrea's behavior on the irritability subscale of the Aberrant Behavior Checklist (ABC) across baseline, intervention, and maintenance conditions. The graph revealed an immediate decrease in the level of irritability behaviors following introduction to the play therapy condition. Graphical analysis further indicated a decrease in the level of the maintenance phase from the play therapy phase. Specifically, the baseline level of 68.1 decreased to 60.3 during the play therapy phase, and decreased to a level of 56.5 during the maintenance phase (see Table 8).

Results of trend line analysis revealed a moderate downward trend, indicating that Andrea's exhibition of irritability behaviors decreased during the play therapy intervention and continued to decrease during the maintenance phase.

Calculation of the least squares regression line further highlighted a large effect (R^2 = .71, *r* = .84) between intervention phases and time. Analysis of variability between conditions revealed low variability between the baseline and play therapy condition, with a standard deviation (*SD*) of 2.6 in the baseline phase and a standard deviation (*SD*) of 2.0 in the treatment condition.

Table 8

Descriptive Statistics and Effect Size for Andrea's Irritability Scores

Descriptors	Baseline	Play Therapy	Maintenance
Mean	68.1	60.3	56.5
Standard Deviation	2.6	2.0	4.1

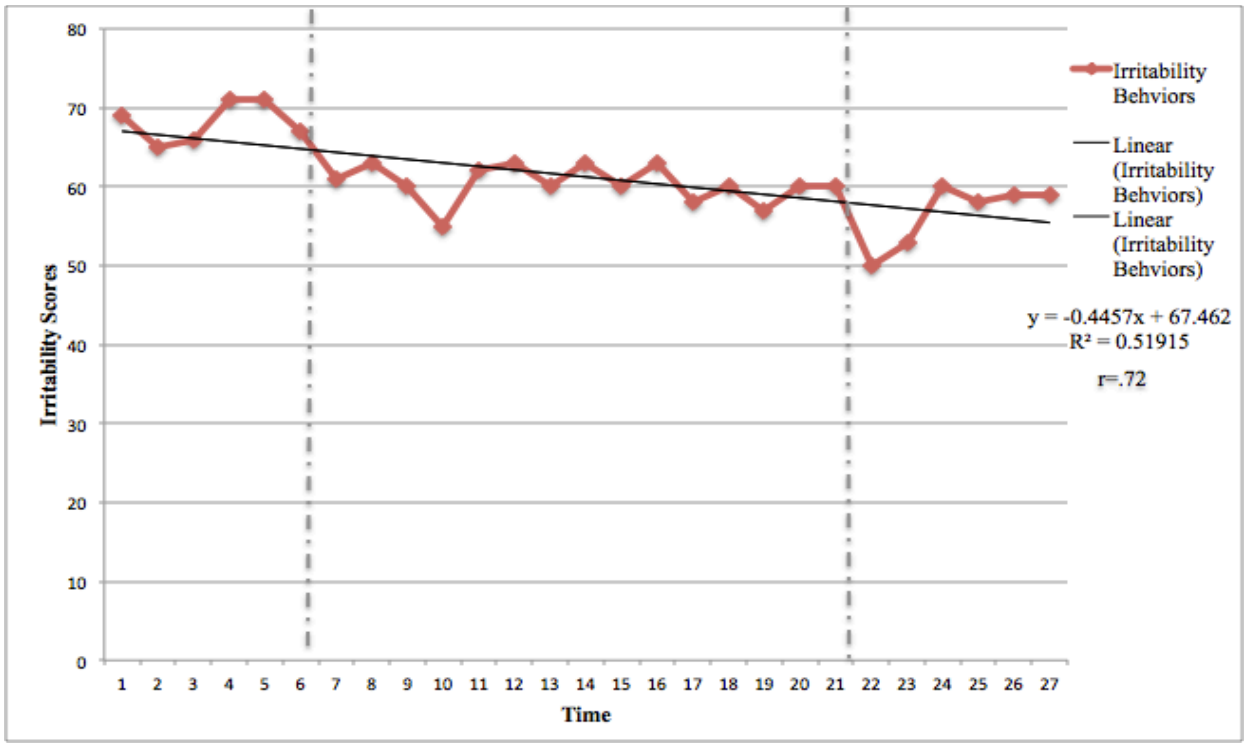

Figure 6. Andrea's irritability behaviors as rated on the ABC during the baseline, play therapy, and maintenance phases.

To further examine the magnitude of the treatment effect, the percent of non-overlapping data (PND) statistic was computed. Because play therapy was intended to decrease Andrea's irritability behaviors, a horizontal line was drawn from point 65 in the baseline phase and extended into the treatment phase (see Figure 7). Results indicated that 15 of 15 (100%) of the data points in the play therapy phase have values less than 65, indicating that play therapy was a very effective treatment for reducing Andrea's irritability behaviors.

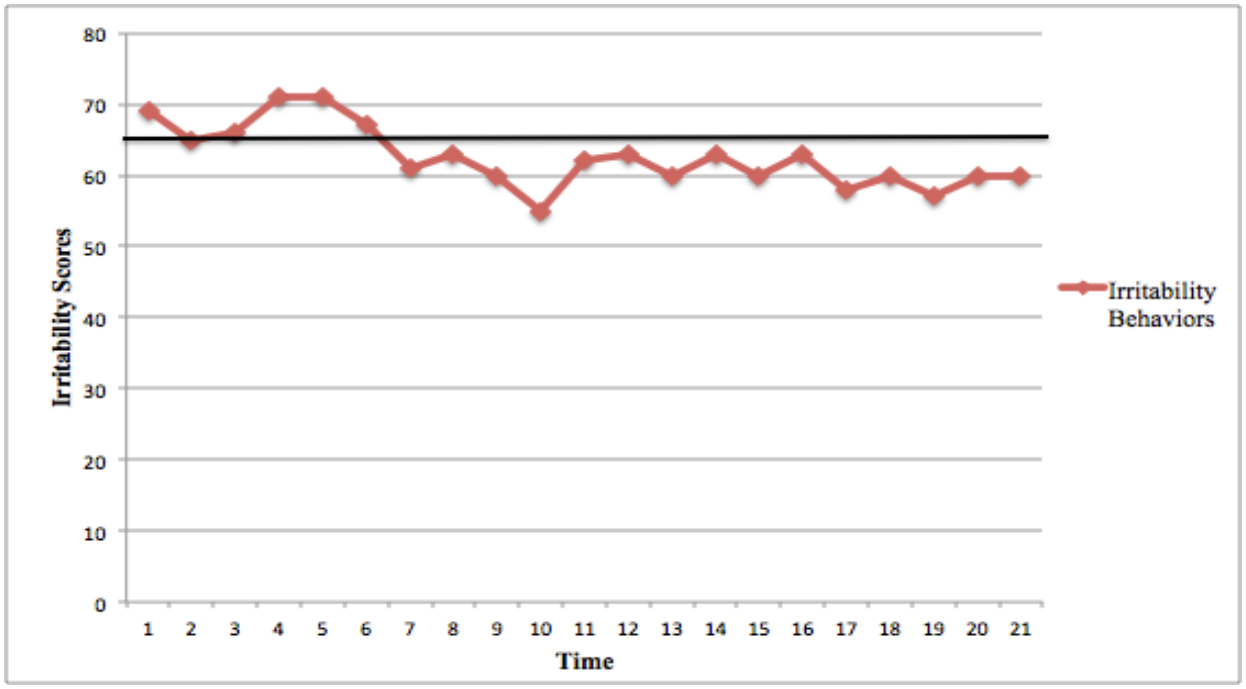

Figure 7. PND calculation for Andrea's irritability behaviors.

Individual Condition Analysis

To investigate changes within conditions, the level, trend, and variability for each phase were analyzed separately. Figure 8 depicted the presence of a gradual accelerating trend in the baseline phase, with a modest relationship between increasing irritability behaviors and time (R^2 = .07, r = .27). Effect size indice revealed a small

effect (Cohen, 1988). Trend line analysis suggested that Andrea's exhibition of irritability behaviors accelerated without treatment, therefore changes in her behaviors across phases may be indicative of treatment effects. A level of 68.1 with a standard deviation (*SD*) of 2.6 further highlighted low variability. Further, results showed an increasing trend followed by a decreasing trend during the last data collection. As previously mentioned, Andrea was in school for only part of the school day during this collection period, therefore it seems likely that her behaviors were underreported on this day. Moreover, because the slope of the curve was minimal and the variability was low, the treatment intervention was introduced.

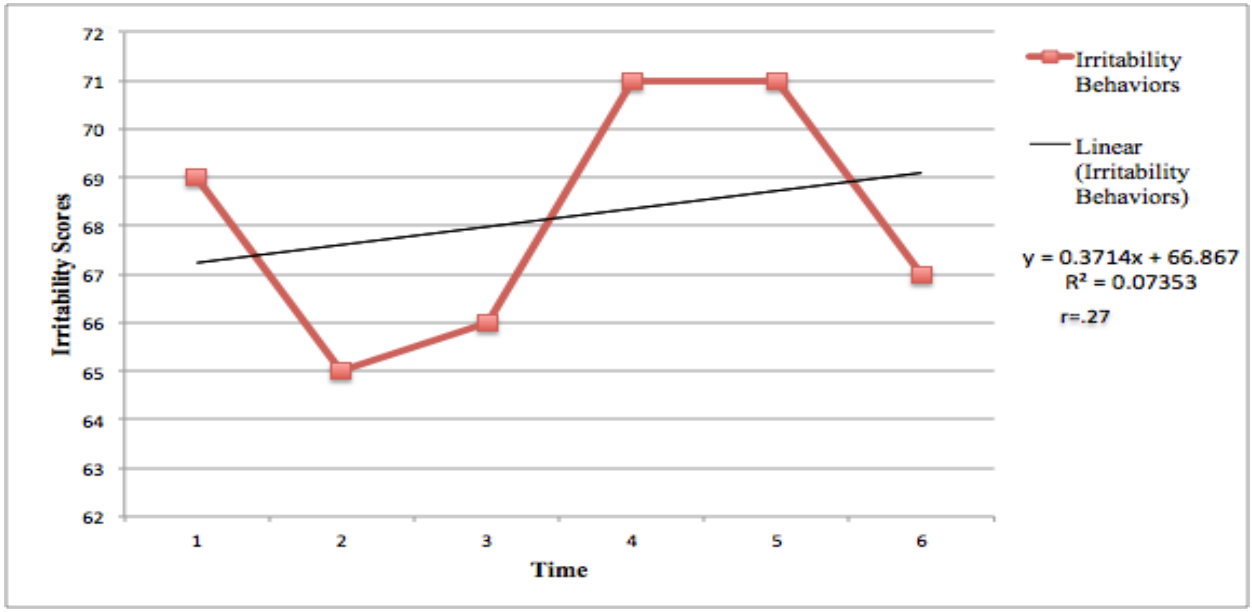

Figure 8. Andrea's irritability behaviors as rated on the ABC during the baseline phase.

As illustrated in Figure 9, the data revealed a moderate decelerating trend in the play therapy phase, with a moderate relationship between play therapy and Andrea's irritability behaviors over time (R^2 = .09, r = .22). Results further revealed a medium effect. Trend line analysis indicated that Andrea's exhibition of irritability behaviors improved during the play therapy intervention. A level of 60.3 with a standard deviation

(*SD*) of 2.1 further highlighted that Andrea's hyperactivity behaviors remained consistent during the treatment phase.

Analysis of the maintenance condition indicated the presence of a gradual accelerating trend, with a strong relationship between increasing irritability behaviors and time (R^2 = .65, r = .81). Effect size indice indicated a large effect (Cohen, 1988). Results suggested that Andrea's irritability behaviors increased as play therapy was withdrawn. However, a level of 56.5 indicated that Andrea's irritability behaviors were lower during the maintenance phase than in the baseline and play therapy phases. Visual analysis and descriptive statistics further revealed moderate variability during this phase. Figure 10 provides a graphical display of these results.

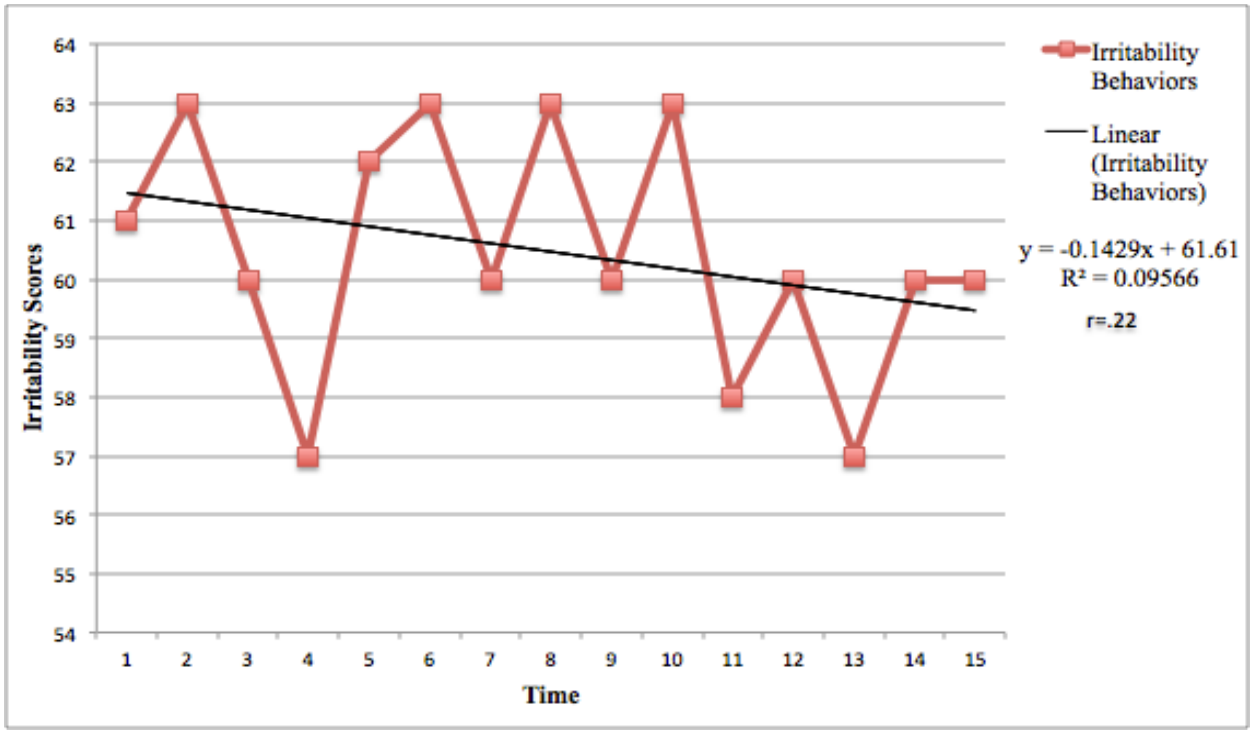

Figure 9. Andrea's irritability behaviors as rated by observers on the ABC during the play therapy phase.

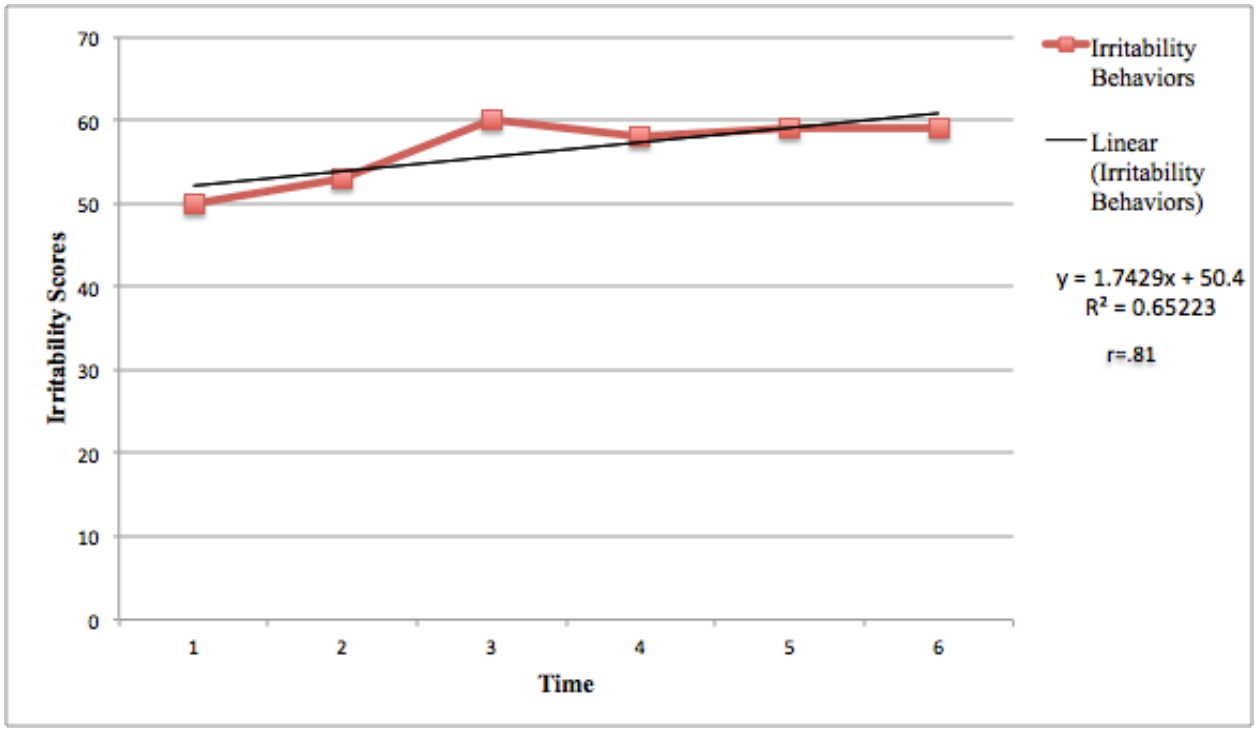

Figure 10. Andrea's irritability behaviors as rated by observers on the ABC during the maintenance phase.

Gesell Developmental Observation Results

Results from the first administration of the Gesell Developmental Observation indicated that Andrea's developmental functioning reflected a maturational age of three and one half years. The second administration indicated that Andrea's developmental functioning reflected a maturational age between three and one half to 4 years. The findings presented from the results of this assessment suggest that Andrea's developmental functioning increased slightly (see Figure 11). Further, the examiner indicated that Andrea's expressive communication improved over time.

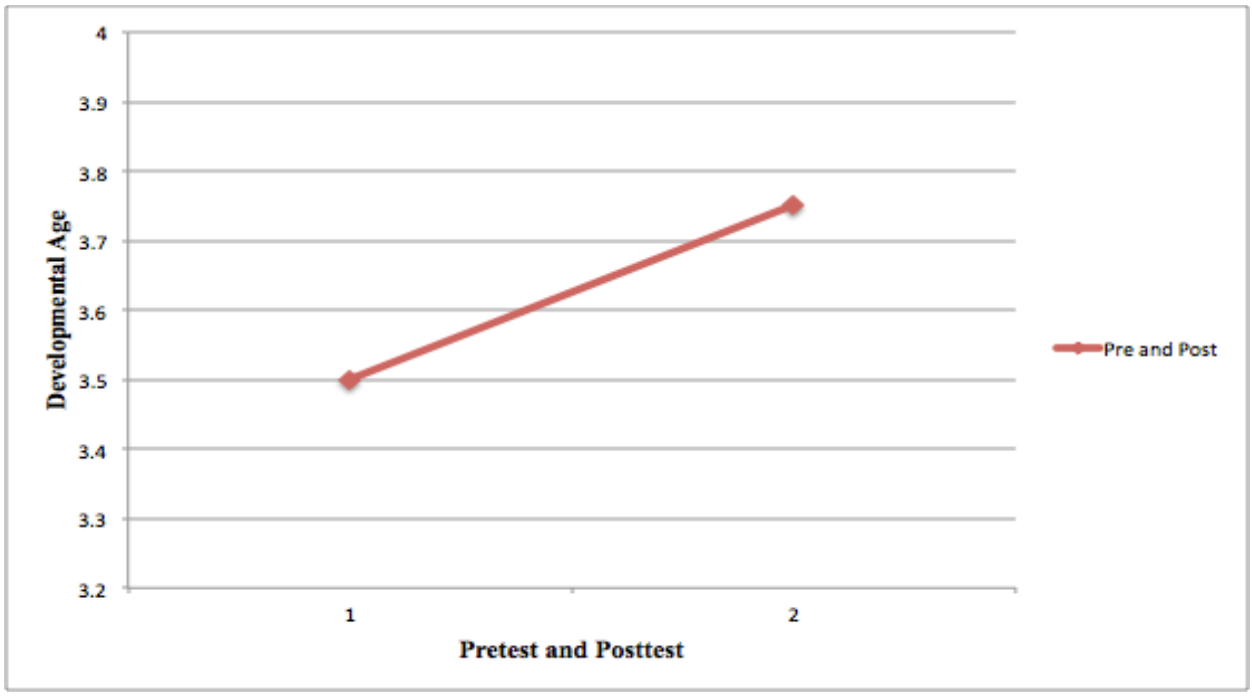

Figure 11. Andrea's results on the Gesell Developmental Observation.

Analysis of Parent Data

Andrea's mother completed the Aberrant Behavior Checklist at two separate intervals during the study: once during the baseline phase and once during the maintenance phase. As displayed in Figure 12, pre-test results indicated that Andrea's mother rated Andrea's irritability and hyperactivity behaviors in the clinical range. Her ratings of Andrea's behaviors on the lethargy, stereotypy, and inappropriate speech fell in the non-clinical range. During the maintenance phase of the study, Andrea's mother rated her hyperactivity behaviors and irritability behaviors in the borderline range. Although results indicated that Andrea's mother perceived that Andrea exhibited high levels of hyperactivity and irritability behaviors during the last data collection, results from the second interval indicated a small decline in observed behaviors.

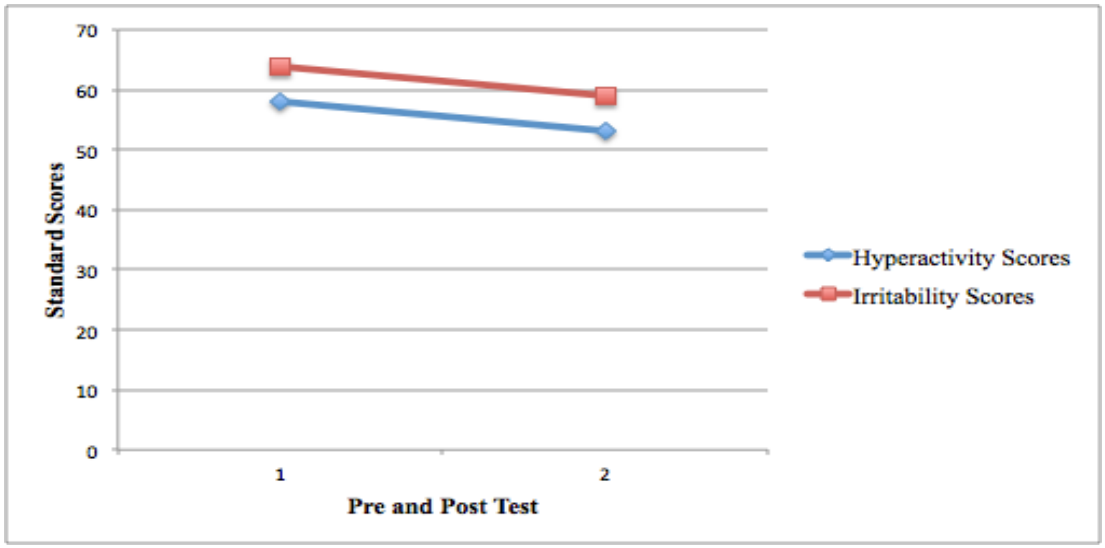

Figure 12. Results of Andrea's behaviors as assessed by her mother on the ABC.

Parent Observational Feedback

Following collection of maintenance data, Andrea's mother was asked if she thought play therapy was effective for reducing her daughter's problem behaviors. She was also asked to describe changes in Andrea's routine that may have impacted the results of this study (see Appendix E). Andrea's mother reported that during the maintenance phase of the study, she and her spouse had separated. Further, Andrea's mother reported that prior to her marital separation, Andrea seemed to be more cooperative and happier, and was better able to identify her feelings. She further reported that she believed play therapy was beneficial for Andrea and explained that she hoped Andrea could continue play therapy.

Participant 2: Randy

Randy's school counselor and teacher referred him for participation in this study. After obtaining consents, Randy's teacher and mother completed the ABC. Results of initial testing revealed that Randy qualified to participate in the study because parent and teacher ratings indicated that his behaviors fell in the borderline range on the hyperactivity and irritability subscale of the ABC.

Behavioral Measurement

Randy's behaviors were assessed through repeated measurement over 9 weeks. Collection of baseline data began after Randy's teacher and one educational aide received instruction on how to use the ABC. Randy's teacher and aide were instructed to rate his behavior on three alternate days at the end of each school day for the entire duration of the study. The following section displays the raters' averaged scores for the hyperactivity and irritability subscales across conditions.

Visual Analysis of Randy's Hyperactivity Scores

Randy participated in 2 weeks of a no-intervention baseline, 5 weeks of play therapy on three alternate days per week, and 2 weeks of a no-intervention maintenance phase. Figure 13 provides a graphical analysis of Randy's behavior on the hyperactivity subscale of the ABC across baseline, intervention, and maintenance conditions.

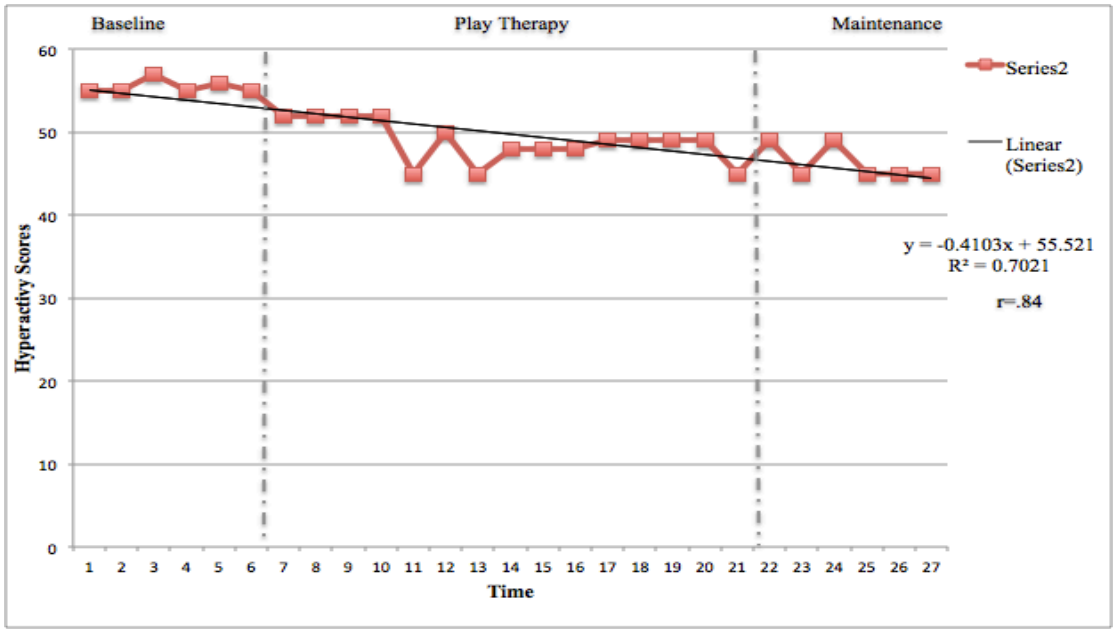

Figure 13. Randy's hyperactivity behaviors as rated by observers on the ABC during the baseline, play therapy, and maintenance phases.

The graph revealed an immediate decrease in the level of hyperactivity behaviors following introduction to the play therapy condition. Graphical analysis further indicated a decrease in the level of the maintenance phase from the baseline phase. Specifically, the baseline level of 55.5 decreased to 48.9 during the play therapy phase, and decreased to a level of 46.3 during the maintenance phase (see Table 9). Visual inspection of the level across phases suggested that Randy's hyperactivity behaviors decelerated over time.

Trend analysis revealed a moderate downward trend, indicating that Randy's exhibition of hyperactive behaviors decreased during the play therapy intervention and continued to decrease during the maintenance phase. Calculation of the least squares regression line further highlighted a large treatment effect and signified a large relationship (R^2 = .71, *r* = .84) between treatment and time. Analysis of variability between conditions revealed low variability between the baseline and play therapy

condition, with a standard deviation (*SD*) of .8 in the baseline phase and a standard deviation (*SD*) of 2.5 in the treatment condition.

Table 9

Descriptive Statistics and Effect Size for Randy's Hyperactivity Scores

Descriptors	Baseline	Play Therapy	Maintenance
Mean	55.5	48.9	46.2
Standard Deviation	0.8	2.5	2.1

To further examine the magnitude of the treatment effect, the percent of non-overlapping data (PND) statistic was computed. Because play therapy was intended to decrease Randy's exhibition of hyperactivity behaviors, a horizontal line was drawn from point 55 in the baseline phase and extended into the treatment phase (see Figure 14). Results indicated that 15 of 15 (100%) of the data points in the play therapy phase have values less than 55, thereby indicating that play therapy was a very effective treatment for reducing Randy's hyperactivity behaviors.

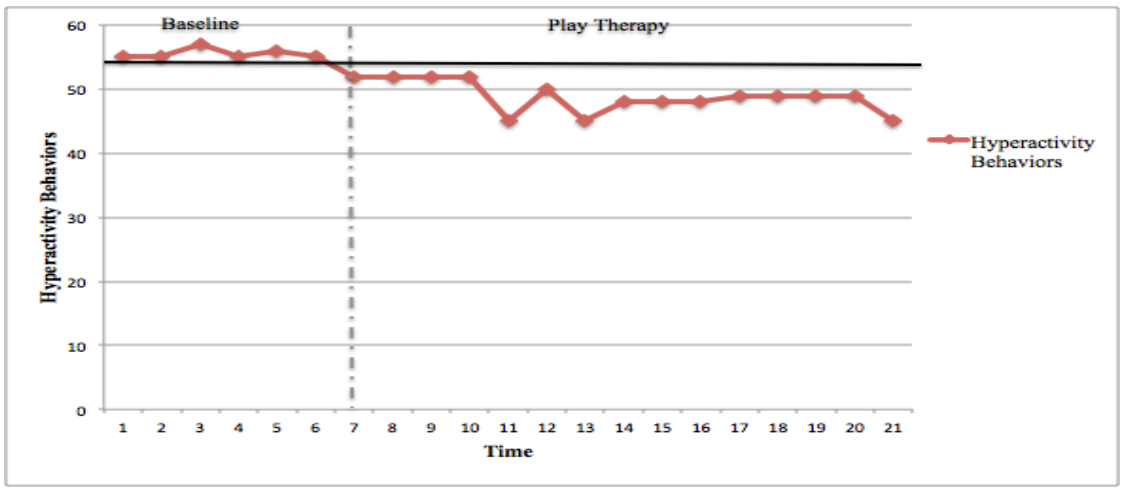

Figure 14. PND calculations for Randy's hyperactivity behaviors.

Individual Condition Analysis

To investigate changes within conditions, the level, trend, and variability for each phase were analyzed separately. Figure 15 depicted the presence of a flat trend in the baseline phase, with no effect between Randy's exhibition of hyperactivity behaviors over time (R^2 = .004, *r* = .06). Trend line analysis suggested that Randy's exhibition of hyperactivity behaviors remained consistent during the baseline phase, therefore changes in his behaviors in disparate conditions may be indicative of treatment effects. A level of 55.5 with a standard deviation (*SD*) of .8 further highlighted low variability.

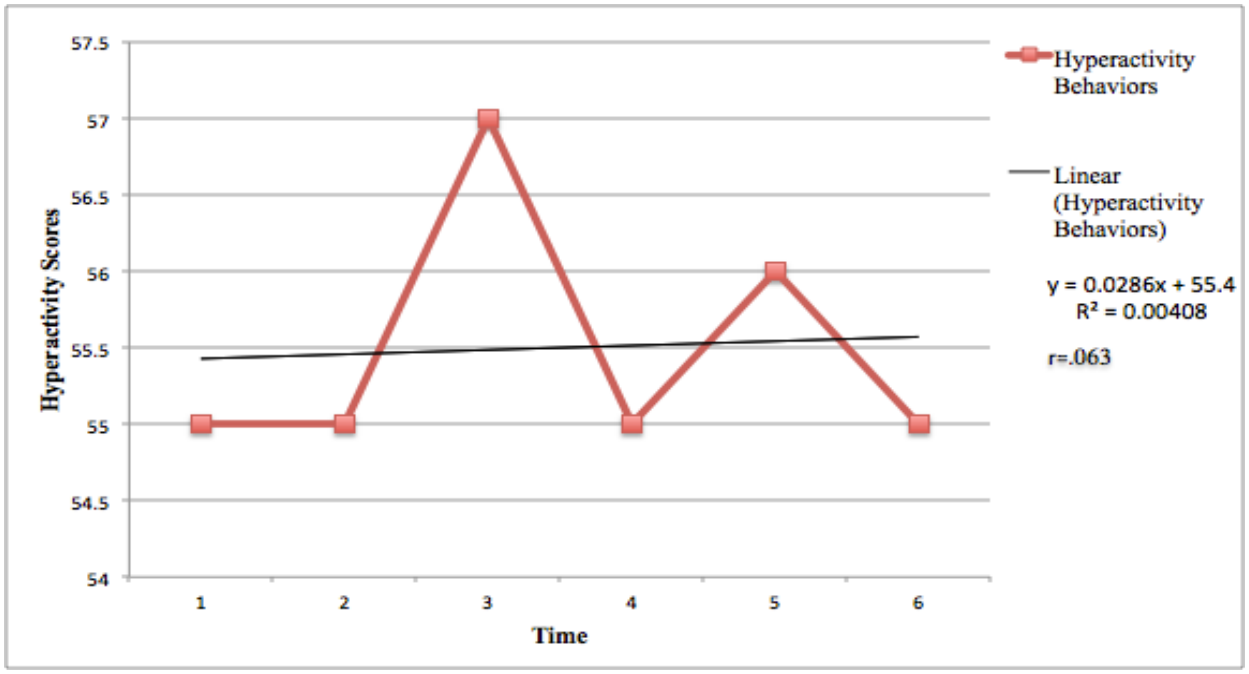

Figure 15. Randy's hyperactivity behaviors as rated by observers on the ABC during the baseline phase.

As illustrated in Figure 16, the data revealed a moderate decelerating trend in the play therapy phase, with a strong relationship and large effect between declining hyperactivity behaviors and time (R^2 = .28, *r* = .06). Trend line analysis indicated that Randy's hyperactivity behaviors improved during the play therapy intervention. A level

of 48.9 with a standard deviation (*SD*) of 2.5 further highlighted low variability during the treatment phase.

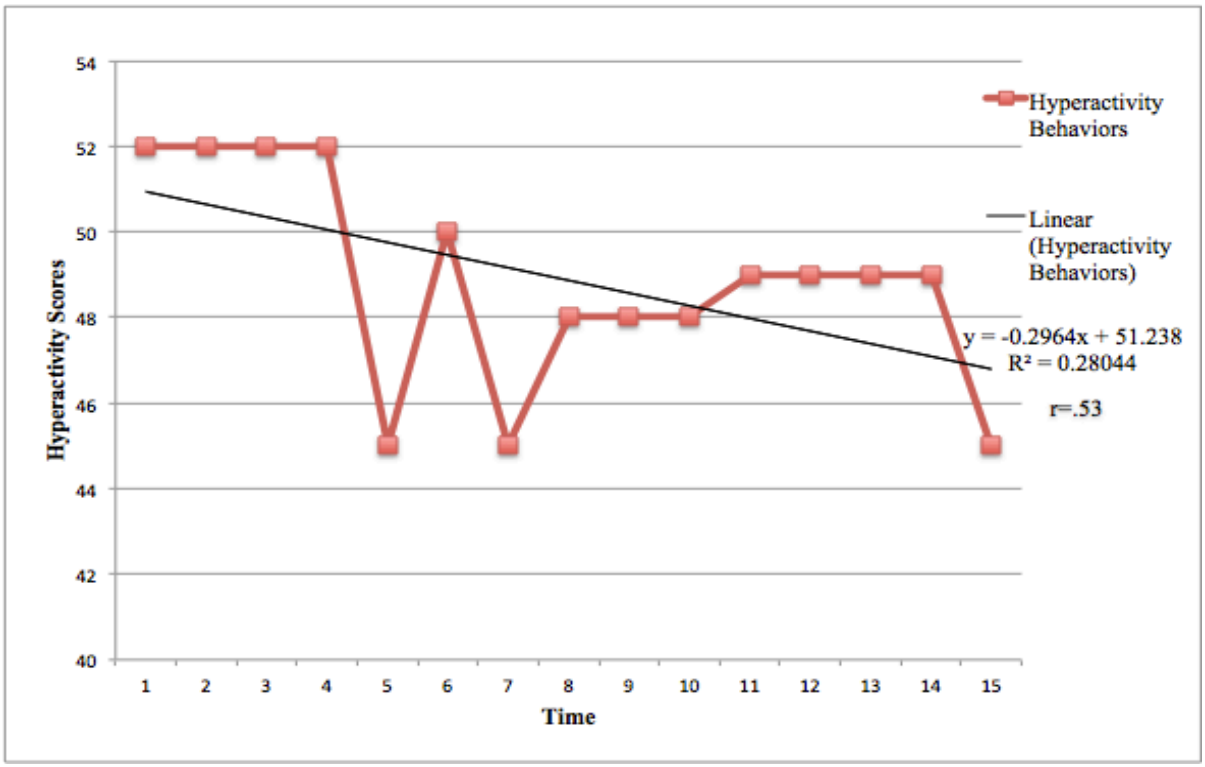

Figure 16. Randy's behaviors as rated by observers on the ABC during the play therapy phase.

Analysis of the maintenance condition indicated the presence of a rapid decelerating trend, with a strong relationship between decreasing hyperactivity behaviors over time (R^2 = .38, *r* = .62). The effect size indice revealed a large effect (Cohen, 1988). A level of 46.2 with a standard deviation of 2.1 further highlighted low variability during the maintenance phase. The decelerating trend during this phase may be indicative of the cumulative effects of play therapy from phase 2. Figure 17 provides a graphical display of these results.

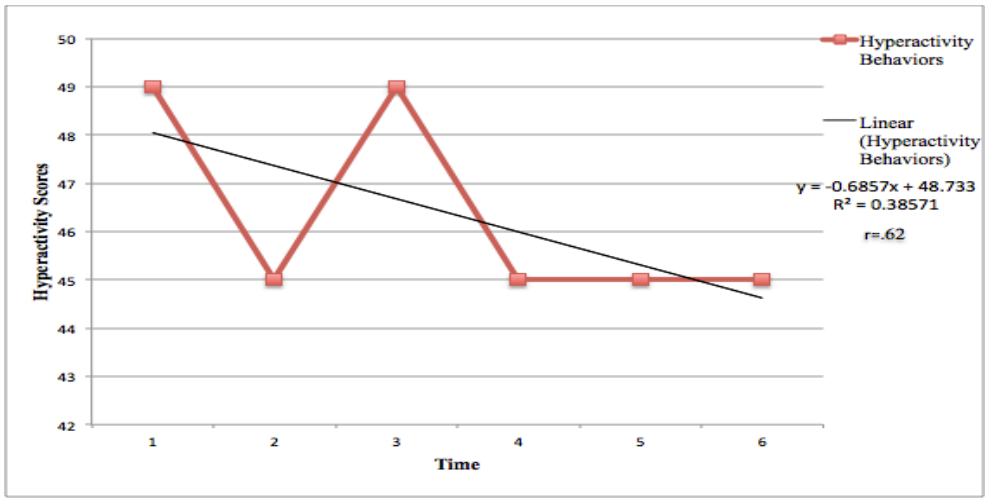

Figure 17. Randy's hyperactivity scores as rated by observers on the ABC during the maintenance phase.

Visual Analysis of Randy's Irritability Scores

Figure 18 provides a graphical analysis of Randy's behavior on the irritability subscale of the Aberrant Behavior Checklist (ABC) across baseline, intervention, and maintenance conditions. The graph revealed a gradual decrease in the level of irritability behaviors following introduction to the play therapy condition. Graphical analysis further indicated a decrease in the level of the maintenance phase from the play therapy phase. Specifically, the baseline level of 57.7 decreased to 50.3 during the play therapy phase, and decreased to a level of 48.2 during the maintenance phase (see Table 10).

Table 10

Descriptive Statistics and Effect Size for Randy's Irritability Scores

Descriptors	Baseline	Play Therapy	Maintenance
Mean	57.7	50.3	48.2
Standard Deviation	0.5	2.2	0.7

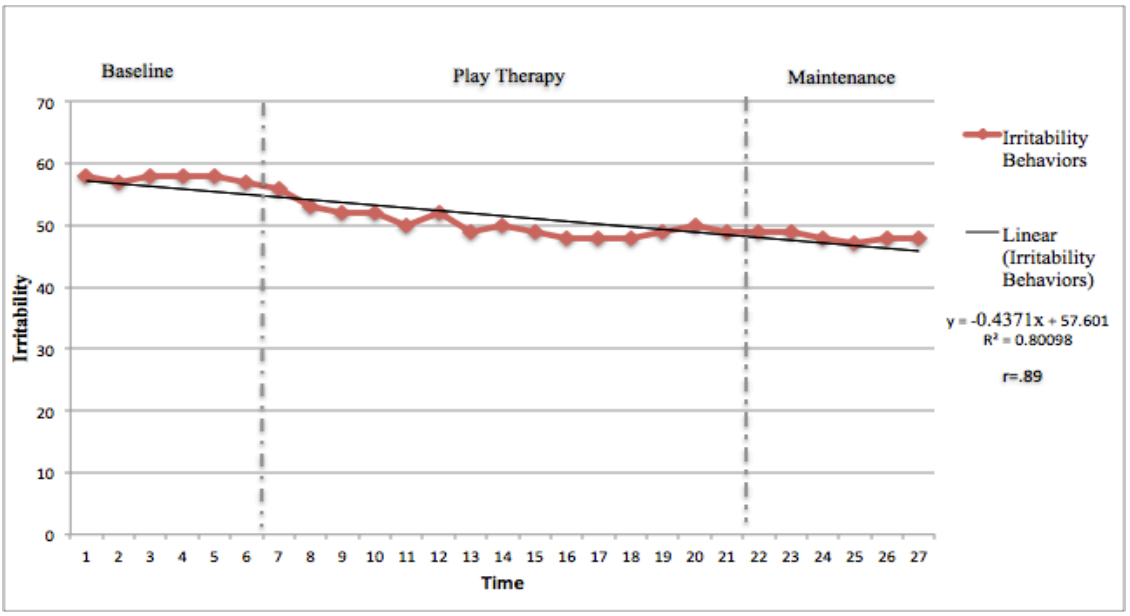

Figure 18. Randy's irritability behaviors as rated by observers on the ABC during the baseline, play therapy, and maintenance phases.

Results of trend line analysis revealed a moderate downward trend, indicating that Randy's irritability behaviors decreased during the play therapy intervention and continued to decrease during the maintenance phase. Calculation of the least squares regression line further highlighted a large treatment effect and signified a large relationship (R^2 = .80, *r* = .89) between treatment and time. Analysis of variability between conditions revealed low variability between the baseline and play therapy condition, with a standard deviation (*SD*) of .5 in the baseline phase and a standard deviation (*SD*) of 2.2 in the treatment condition.

To further examine the magnitude of the treatment effect, the percent of non-overlapping data (PND) statistic was computed. Because play therapy was intended to decrease Randy's irritability behaviors, a horizontal line was drawn from point 57 in the baseline phase and extended into the treatment phase (see Figure 19). Results indicated that 15 of 15 (100%) of the data points in the play therapy phase have values

less than 57, indicating that play therapy was a very effective treatment for reducing Randy's irritability behaviors.

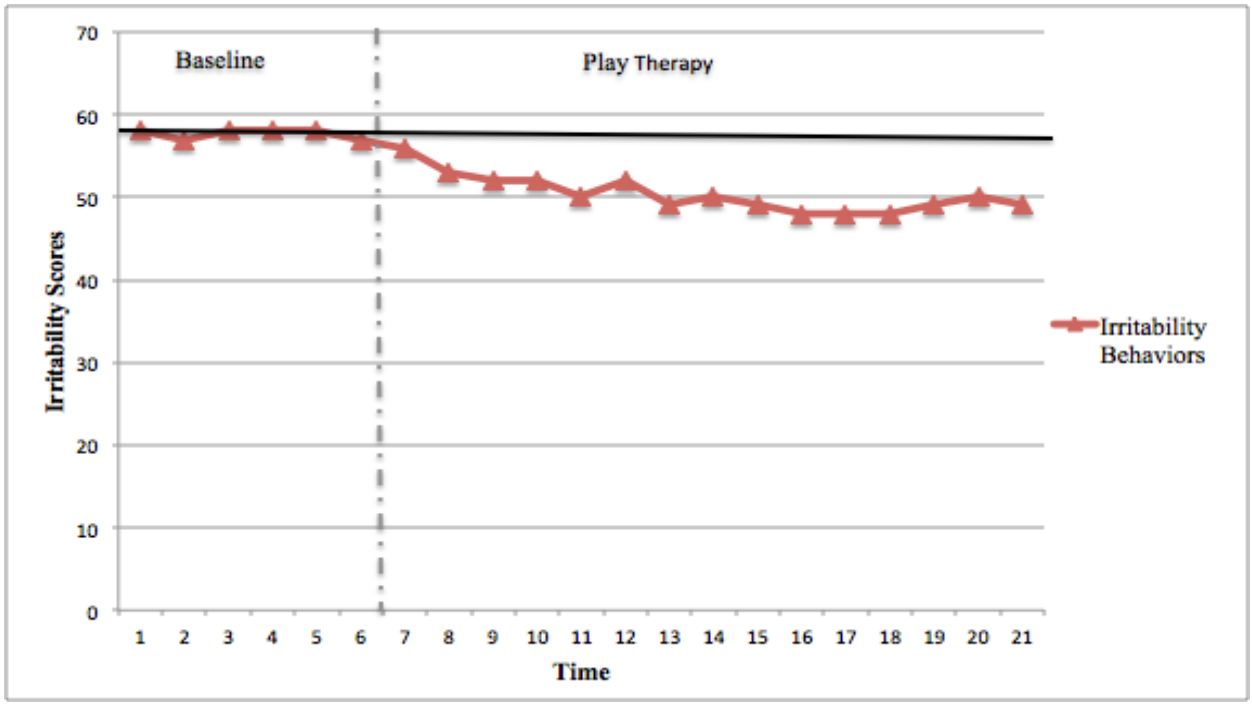

Figure 19. PND calculation for Randy's irritability scores.

Individual Condition Analysis

To investigate changes within conditions, the level, trend, and variability for each phase were analyzed separately. Figure 20 depicts the presence of a gradual decelerating trend in the baseline phase, with an ineffectual relationship between decreasing irritability behaviors over time (R^2 = .04 , r = .21). The effect size indice was interpreted as small (Cohen, 1988). Trend analysis suggested that Randy began to show improvement in his irritability behaviors during the last data collection in the baseline phase. As noted by the teacher and aide, Randy was in school for only part of the school day during this collection period. Therefore, it seems likely that his behaviors

were underreported on this day. Moreover, because the slope of the curve was minimal and the variability was low, the treatment intervention was introduced.

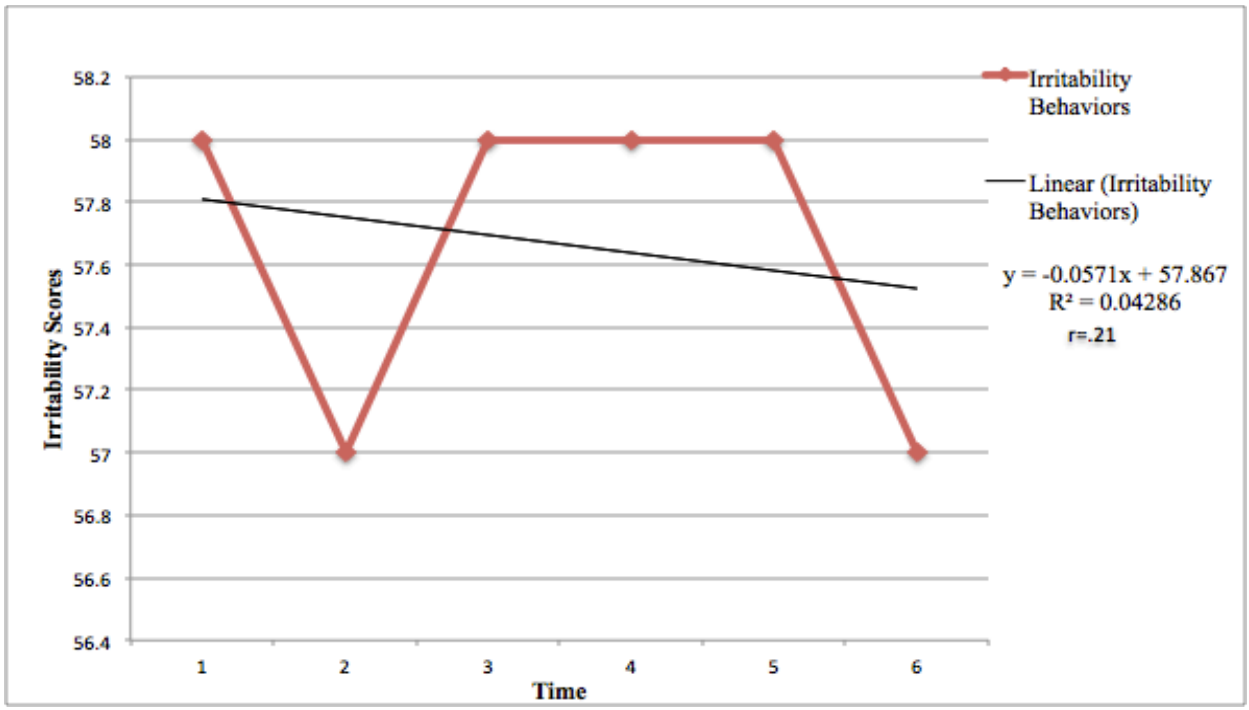

Figure 20. Randy's irritability behaviors as rated by observers on the ABC during the baseline phase.

As illustrated in Figure 21, the data revealed a moderate decelerating trend in the play therapy phase, with a strong relationship between decreasing irritability behaviors and time (R^2 = .63, r = .79). The effect size indice was interpreted as large (Cohen). Trend line analysis indicated that Randy's exhibition of irritability behavior improved during this phase. A level of 50.3 with a standard deviation (*SD*) of 2.3 further highlighted low variability among Randy's hyperactivity scores during the treatment phase.

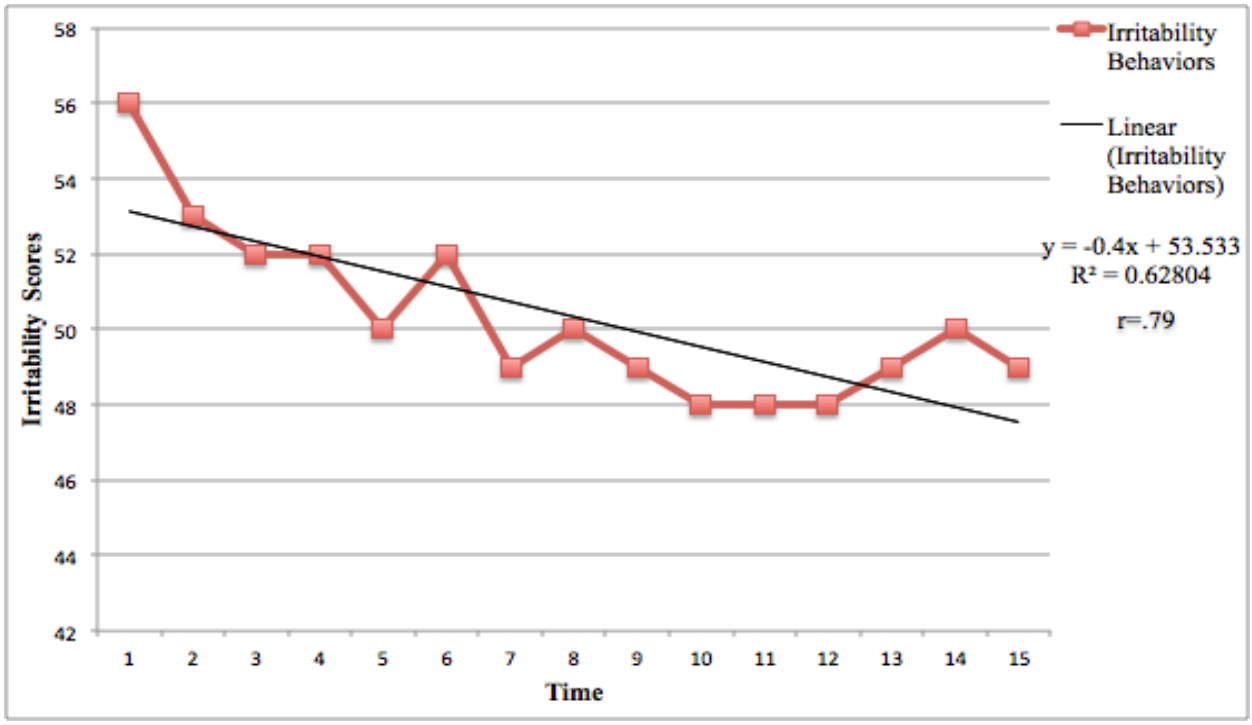

Figure 21. Randy's irritability behaviors as rated by observers on the ABC during the play therapy phase.

Analysis of the maintenance condition indicated the presence of a moderate decelerating trend, with a strong relationship between decreasing irritability behaviors over time (R^2 = .41, r = .64). The effect size indice revealed a large effect (Cohen, 1988). A level of 48.1 with a standard deviation of .7 highlighted low variability during this phase. A decelerating trend during this phase suggested that treatment effects from Phase 2 were maintained in Phase 3. Figure 22 provides a graphical representation of these results.

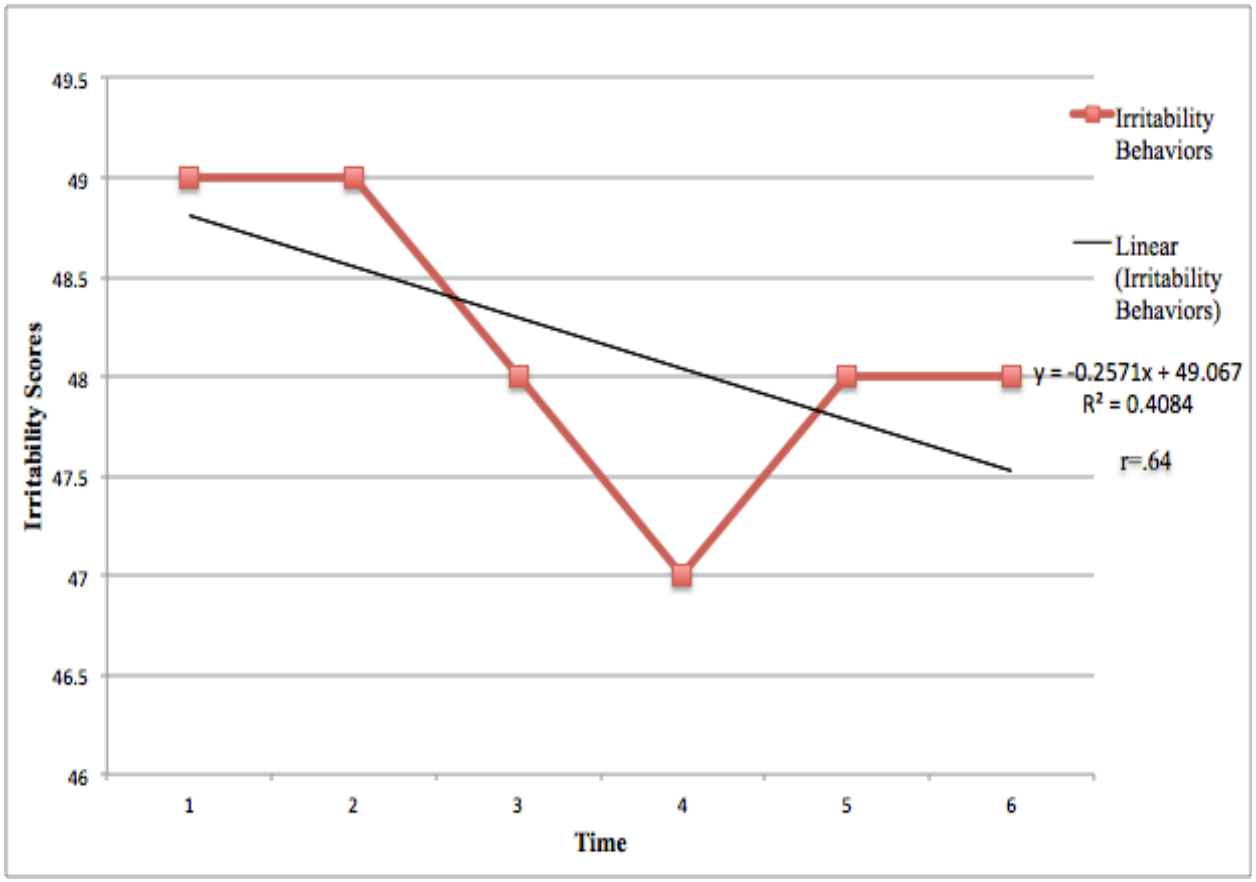

Figure 22. Randy's irritability behaviors as rated by observers on the ABC during the maintenance phase.

Gesell Developmental Observation Results

Results from the first administration of the Gesell Developmental Observation indicated that Randy's developmental functioning reflected a maturational age of four years. The second administration indicated that Randy's developmental functioning reflected a maturational age of four years (see Figure 23). Although the findings from this assessment indicated that Randy's developmental functioning remained stable across time, the examiner indicated that Randy demonstrated a greater willingness to participate in the activities during the second testing interval. The examiner also noted

that Randy's limited expressive and receptive communication skills may have impacted the results.

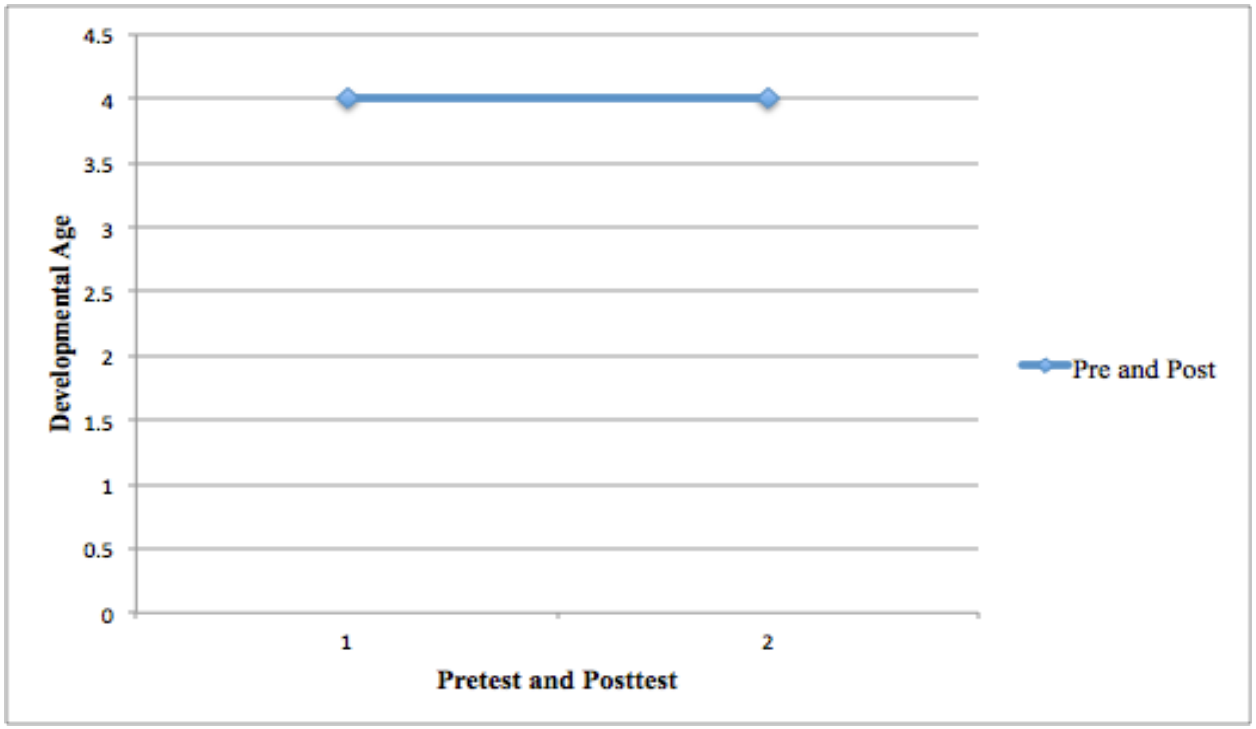

Figure 23. Randy's results on the Gesell Developmental Observation.

Analysis of Parent Data

Randy's mother completed the Aberrant Behavior Checklist at two separate intervals during the study: once during the baseline phase and once during the maintenance phase. As displayed in Figure 24, pre-assessment results indicated that Randy's mother rated his irritability and hyperactivity behaviors in the borderline range. Her ratings of Randy's behaviors on the lethargy, stereotypy, and inappropriate speech fell in the non-clinical range. During the maintenance phase of the study, Randy's mother rated his hyperactivity behaviors and irritability behaviors in the borderline range. Although scores from both intervals were appraised in the borderline range,

scores in the second interval declined, suggesting a decrease in observed problem behaviors.

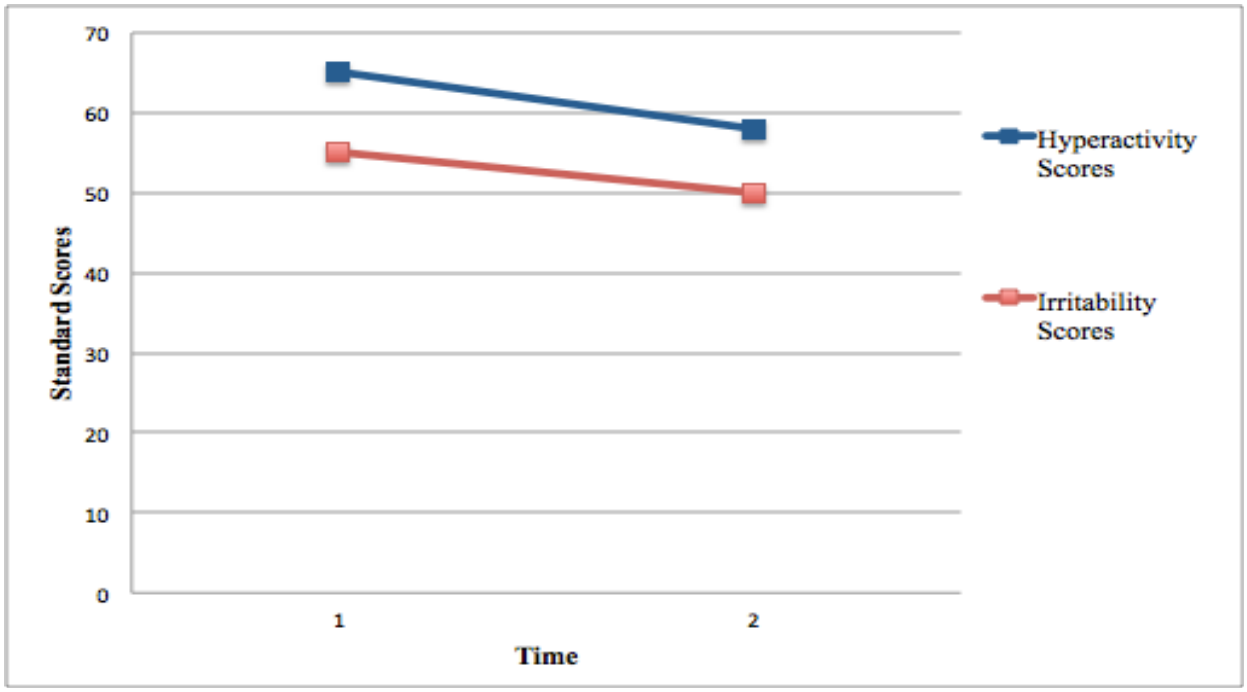

Figure 24. Results of Randy's behaviors as assessed by his mother on the ABC.

Parent Observational Feedback

During a follow-up interview, Randy's mother was asked if she thought play therapy was effective for reducing her son's problem behaviors. She was also asked to describe changes in his routine that may have impacted the results of this study (see Appendix E). Randy's mother reported he did not experience significant changes in his routine over the course of the study. She further reported that Randy seemed more independent and self-controlled and indicated that she thought play therapy was helpful. She also explained that she wanted her son to continue play therapy and reported that she desired to learn CCPT-based strategies for assisting Randy with his problem behaviors at home.

Teacher and Aide Observational Feedback

Following collection of maintenance data, participants' classroom teacher and aide were asked if they thought that play therapy was effective for reducing problem behaviors for each participant. They were also asked to describe each participant's behavioral changes. From information obtained in the interviews, it was apparent both teacher and aide perceived play therapy was an effective approach for improving each participant's behaviors. Specifically, the teacher and aide reported that Andrea's behaviors had significantly decreased and that she seemed calm after each play therapy session. They also indicated that Andrea seemed to enjoy participating in play therapy. Regarding Randy's behavioral changes, his teacher and aide reported that he followed directions better and was more willing to cooperate with students and staff members. They further discussed that Randy seemed to enjoy play therapy. Participants' classroom teacher and aide also explained that they thought play therapy was beneficial and indicated that they wanted both participants to continue receiving play therapy services.

Summary of Results

In this chapter, visual and descriptive results from data analysis were presented regarding the effects of play therapy on problem behaviors among children identified with an intellectual disability. Results from this single-case experiential design indicated that problem behaviors decreased for both participants. Results also signified the presence of a very effective treatment effect for both participants. Further, interview

data provided support for the social validity of play therapy as an intervention for reducing problem behaviors for children identified with an intellectual disability.

CHAPTER 5

DISCUSSION

The purpose of this study was to examine the effect of play therapy on reducing targeted behavioral problems for children with an intellectual disability. Specifically, problem behaviors were identified through parent and teacher ratings on the Aberrant Behavior Checklist (ABC). Clinical or borderline ratings of participant's behaviors were assessed through repeated measurement across baseline, treatment, and maintenance conditions. Results indicated that both participants demonstrated a decrease in problem behaviors after participating in the play therapy intervention. In this chapter, the specific findings of this study are organized as follows: summary of the study (a) summary of participants' results, (b) theoretical implications, (c) clinical implications (d) recommendations for future research, (e) limitations of the study.

Summary of the Study

Children identified with an intellectual disability and problem behaviors face enduring consequences, including decreased access to educational and leisure activities, increased risk for neglect and abuse, and strained relationships (Dekker et al., 2002; Dykens, 2005; Matson et al., 2009; Murphey et al., 2005). As previously cited, there is a great disparity between the mental health needs of children with disabilities and their subsequent treatment (United States Public Health Service, 2002). An exhaustive literature review revealed a dearth of outcome research into the efficacy of play therapy as an intervention for reducing problem behaviors among children identified with an intellectual disability. To address this existent gap, an experimental

single case study was designed to examine the effects of play therapy on problem behaviors among children identified with intellectual disability. A thorough discussion of the outcome of this study is provided in the next section.

Direct Findings

A single subject, A-B-A design was used to examine participants' behavioral changes across conditions. Overall, visual analysis and descriptive statistics revealed that play therapy was a very effective treatment for reducing hyperactivity and irritability behaviors for both participants. Analysis of results for each participant follows.

Participant 1: Andrea

During the baseline phase, behavioral ratings from Andrea's mother and teacher indicated that Andrea's behavior fell in the clinical range on the hyperactivity and irritability subscales of the ABC. After Andrea completed 5 weeks of play therapy, teacher and aide ratings of her behavior on both subscales fell in the borderline range, suggesting that play therapy was beneficial in improving Andrea's problem behaviors. During baseline, play therapy, and maintenance conditions, Andrea's hyperactivity and irritability behaviors were assessed weekly using the ABC. Mean scores on the hyperactivity subscale across conditions revealed that Andrea's behaviors decreased significantly, indicating that play therapy was an effective treatment. Additionally, mean scores on the irritability subscale across conditions highlighted that Andrea's irritability behaviors decreased across conditions, suggesting that play therapy may have contributed to improvement in her irritability behaviors.

Results from the PND statistic, an indice for effect size indicated that play therapy was a very effective treatment for reducing Andrea's hyperactivity and irritability behaviors. Results from the Gesell Developmental Observation indicated that Andrea's maturational age increased slightly, suggesting that play therapy may have contributed to an increase in her developmental functioning. Findings from parent observations indicated that Andrea's problem behaviors decreased over time.

Participant 2: Randy

During the baseline phase, behavioral ratings from Randy's mother and teacher indicated that Randy's behavior fell in the borderline range on the hyperactivity and irritability subscales of the ABC. After Randy completed 5 weeks of play therapy, teacher and aide ratings of his behavior on both subscales fell in the normal range. During baseline, play therapy, and maintenance conditions, Randy's hyperactivity and irritability behaviors were assessed weekly using the ABC. Mean scores on the hyperactivity subscale across conditions revealed that Randy's behaviors decreased significantly across conditions. Additionally, mean scores on the irritability subscale across conditions highlighted that Randy's irritability behaviors decreased across time.

Results from the PND statistic indicated that play therapy was a very effective treatment for reducing Randy's hyperactivity and irritability behaviors. Findings from the Gesell Developmental Observation indicated that Randy's maturational age remained stable across time. Additionally, results of parent observations indicated that Randy's problem behaviors decreased slightly.

Theoretical Implications

This study was established from the theory of child-centered play therapy with an assumption that through a caring, genuine, and accepting therapeutic relationship, children with intellectual disabilities would become self-directing, self-controlled, and self-accepting (Landreth, 2002; Axline, 1947). Moreover, the trusting relationship would enable participants to move "toward adjustment, mental health, independence, autonomy, and self-actualization (Landreth, 1993; pp. 18). In examining the therapeutic benefits of child-centered play therapy, children in this study seemed to gain strides in their own self-directed growth process.

The findings of this study are consistent with other experiential studies that demonstrated the effectiveness of play therapy as an intervention for reducing children's externalized and internalized behaviors (Baggerly, 2004; Fall et al., 2002; Packman & Bratton, 2003; Post, 1999; Raman & Kapur, 1999). The results further extend support for the use of CCPT with children that exhibit hyperactivity behaviors (Blinn, 1999; Ray, Schottlekorb, & Tsai, 2007; Schottlekorb & Ray, 2009).

Moreover, the large treatment effect for both participants is a promising finding because humanistic tenets of CCPT may affect children's self-direction, autonomy, self-responsibility and self-control (Bratton, 2010; Landreth, 1993). More importantly, results seem to highlight the possibility that children with intellectual disabilities manifest problem behaviors due to intrapsychic processes and provide support for mental health treatments. The apparent implication is that children with intellectual disabilities might benefit from holistic interventions that promote cognitive, social, and emotional development.

Diverging from current behavioral or pharmaceutical practices and research, the results of this study suggested that a non-directive intervention may be clinically useful and practical. Specifically, results from this study contradict findings from the largest mixed-methods analysis of literature in the field of special education in that CCPT as a treatment focuses on the person of the child rather than specific patterns of a child's behavior (Didden et al., 1997). This departure from current practices raises questions regarding the pandemic use of behavioral approaches for treating emotional and behavioral problems among children with disabilities. Results also lend credibility to Goodman and Linn's (2003) assertion that professionals should design interventions that foster exceptional children's autonomy, choice, and self-regulation.

In a follow-up interview with classroom staff, the classroom teacher remarked that "Andrea seemed calm and self-controlled after each play therapy session." She further indicated that Randy seemed happier and cooperative. These anecdotal reports seem to substantiate primary tenets of CCPT and highlighted the importance of allowing children with intellectual disabilities opportunities to process and assimilate experiences and feelings (Landreth, 2002). As substantiated in the literature, children's play is a significant marker of health as play contributes to cognitive and emotional development (Brodin, 2005; Landreth, 2002; Schaefer, 1993; Wadsworth, 1986). As indicated by the findings in this study, both participants seemed to benefit from the therapeutic factors of play therapy.

Reports from the teacher and classroom aide also seemed to affirm the social validity of play therapy as an intervention for children identified with an intellectual disability and problem behaviors. Specifically, both raters indicated that they believed

play therapy facilitated decreases in problem behaviors for both participants and indicated that Andrea and Randy were performing better in the classroom. These reports implicate that play therapy was clinically meaningful for both participants. Overall, the results suggested that children with intellectual disabilities and problem behaviors may be capable of moving toward self-direction and self-control when given opportunities to develop their sense of self. Literature has shown that play therapy improves a wide range of childhood problems (Baggerly, 2004; Blanco, 2009; Fall et al., 2002; Packman & Bratton, 2003; Post, 19999; Schottlekorb & Ray, 2009). The findings of this study contributes to the play therapy literature and highlights the need for additional research.

Clinical Implications

Through the duration of this study, significant clinical implications for play therapists working with children with intellectual disabilities were noted. As previously mentioned, I, the author of this study have specialized training in working with children with disabilities and have served as a special education teacher for five years. During the intervention phase, I experienced numerous difficulties with Randy that seemed to impact our psychological contact (Rogers, 1957). Rogers referred to psychological contact as a 'minimal relationship' that exists between a client and counselor and indicated that a fundamental component of this relationship is the ability to impact another.

As Rogers further explained, psychological contact between a client and counselor is an integral prerequisite to the development of a therapeutic relationship.

Therein, Rogers postulated that impaired psychological contact between client-counselor dyads poses significant threats to the relationship and invalidates the five remaining necessary and sufficient conditions. To supersede this perceived contact impairment, two CCPT adaptations were implemented and clinical inferences were documented. Specifically, I embraced developmentally appropriate strategies that enhanced communicative contact between Randy and I.

During the intervention phase, Randy often ran throughout the school building and playground on his way to the playroom and often sat in the middle of the hallway on his way back to the classroom. During these instances, I used behavioral strategies for assisting him to his destination. Specifically, I displayed pictures of images depicting rewards and indicated that he would be rewarded if he walked to his destination with me. For example, I presented a 2x2 picture of a computer to Randy and explained that he could play on the computer if he walked with me. This intervention was helpful in assisting Randy to his destination and I speculate that I would have struggled during these instances if I had not received prior training in special education.

This speculation raises questions regarding the need for disability training in counselor education programs. Moreover, this modification extends support for the use of specific strategies for promoting psychological contact among individuals with disabilities (Wyatt, 2007; Prouty, 2001) and raises questions regarding the need for therapists to combine words with symbols when working with clients that have limited functional communication and contact impairments.

Another noteworthy observation was the use of limit setting, specifically the use of following Landreth's ACT model. According to Landreth (2002), limits are set by

(a)acknowledging the child's feelings, wishes, or desires, (b) communicating the limit, and (c) targeting two alternatives. For example, "Randy, you are angry at me, but I am not for throwing sand at, you can choose to throw sand in the red bucket or the blue bucket." In my sessions with Randy, limits were set in order to protect the playroom or our relationship. However, because Randy's expressive and receptive communication were limited, the ACT model was adapted. When I stated limits, I only communicated the limit. For example, "Randy, no throwing sand" or "Randy, no hitting." In the first session with Randy, I followed Landreth's model and noticed that Randy seemed confused. Because children with limited functional language often need for adults to communicate in short phrases (Howard, Shaughnessey, Sanger, & Hux, 1998; Kaiser & Delaney, 2001), the ACT model was quickly adapted. I observed that the adapted version of limit setting was useful and Randy seemed to better understand me when I simplified my use of language. This clinical observation highlights the need for play therapists to make developmentally appropriate modifications when working with contact impaired clients (Wyatt, 2007; Prouty, 2001).

An additional clinical observation was Randy's play development. During the entire intervention phase, Randy's play behaviors were characterized by the absence of goal-directed actions, pretense, or symbolism. In play sessions, Randy often displayed an interest in observing himself in the mirror, and engaged in simple cause-effect motor movements. Because play therapy is based on symbolic play, a higher form of play development, it seems ironic that Randy showed improvements in his behavior (Landreth, 2002). The improvements in his behaviors suggest that Randy benefited from the therapeutic relationship and non-directive therapeutic stance. His results

further highlighted the importance of permissiveness in the relationship, namely the ability to explore and make decisions on his own (Axline, 1947; Landreth). Moreover, the suggestion that children need to be taught symbolic play behaviors to promote play development appears questionable according to these findings (Lang et al., 2009).

Additionally, during the end of the treatment phase, I explained to both participants that they would continue participating in play therapy after a two-week break. Because both participants did not seem to understand me, I decided to visit their classroom once per week for 15 minutes during the maintenance phase. During this time, I talked with both participants in their classroom as they were getting ready to leave school for the day. The rationale for my behavior stemmed from an ethical obligation to ensure they did not feel abandoned (American Counseling Association [ACA], 2005).

Recommendations for Future Research

The promising findings of this study advance the need for further research into the effectiveness of play therapy as an intervention for reducing emotional and behavioral problems for children with disabilities. A dearth of empirical literature exists on the effects of CCPT or CCPT-based interventions with exceptional children, therefore the following recommendations are suggested for future research.

1. Research using play therapy as intervention for treating emotional and behavioral problems for children identified with disabilities in various settings.

2. Studies should further examine whether play therapy is an effective approach for individuals with severe intellectual disabilities.

3. Conduct studies that examine the effectiveness of group play therapy with children with intellectual disabilities and social problems.

4. Conduct CCPT-based teacher training studies with special education teachers.

5. Conduct a randomized single subject design study whereby independent observers are blind to the treatment group.

6. Conduct a replication study to strengthen validity and reliability of results.

7. Examine effects of play therapy on play behaviors of children with disabilities, specifically examining if children demonstrate increases in their use of symbolic play.

Limitations

Readers are cautioned to interpret the findings of this study within the context of the following limitations.

1. Participants were invited from a convenience sample of children from one Southwest elementary school. The sample was homogenous regarding developmental level and cognitive ability, yet quite different regarding speech-language ability and play development. Therefore, applicability of findings in this study are not generalizeable.

2. In this study, the Aberrant Behavior Checklist (ABC), a behavioral rating assessment, served as the only method for data analysis. Results could have been strengthened by the utilization of multiple instruments, and by the inclusion of independent observers.

3. Observers in this study had knowledge of the intervention that both participants were receiving, therefore their ratings of participants' behaviors may have

been biased.

4. Further research is warranted because little empirical evidence can substantiate the effectiveness of play therapy for children with disabilities.

5. Findings of this study are confined to problem behaviors as assessed by the Aberrant Behavior Checklist. Because play therapy is a holistic intervention, important information regarding treatment effect may not have been detected.

Conclusions

Researchers have highlighted the growing disparity between the mental health needs of children with disabilities and their subsequent treatment (Einfeld & Tongue, 1996; U.S. Public Health Service, 2002; U.S. Public Health Service, 2001). Consequences for children identified with an intellectual disability and emotional or behavioral problems include decreased quality of life, strained relationships, and substandard care (Dekker et al., 2002; Einfeld & Tonge, 1996; Matson et al., 2009; Murphey et al., 2005). A dearth of outcome research in the treatment of children with disabilities warranted new research and formed the basis of this study.

The purpose of this single subject research study was to examine the effect of play therapy on problem behaviors among children identified with an intellectual disability. Results of this study seem to support play therapy as an intervention for reducing problem behaviors for children with intellectual disabilities. The findings demonstrated participants' hyperactivity and irritability scores decreased across conditions. Effect size measures indicated that play therapy was a very effective treatment for both participants. Results from clinical observations call attention to the

need for disability training in counselor education programs. Further, teacher reports indicated that play therapy was a viable intervention for reducing participants' problem behaviors. Although the results of this study are promising, the nature of this exploratory study necessitates the need to conduct further CCPT and CCPT-based interventions with individuals with disabilities.

APPENDIX A

PARENT/GUARDIAN INFORMED CONSENT

University of North Texas Institutional Review Board
Parent Informed Consent Form

Before agreeing to your child's participation 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: Effectiveness of Play Therapy on Behaviors of Children with Intellectual Disabilities: A Single Subject Design

Principal Investigator: Dee Ray, Ph.D., LPC, NCC, RPT-S, University of North Texas (UNT) Department of Counseling, Development, and Higher Education.

Purpose of the Study: You are being asked to allow your child to participate in a research study which involves evaluating if play therapy is effective in assisting children with an intellectual disability improve the way they act and feel. The study will also investigate if play therapy improves the behavioral functioning of children identified with an intellectual disability. .

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 manner. Elementary-age children have difficulty working through problems with words, so play therapy assists children by providing an environment whereby they can explore their feelings, behaviors, and thoughts.
If you agree to allow your child to participate, your child will receive three 30-minute play therapy sessions every week for 4 weeks. Your child's play therapist is a doctoral student at the University of North Texas in the Counseling Program, and is also a certified special education teacher, who has taught for 5 years

Your permission also allows your child's homeroom teacher and educational staff to fill out the Aberrant Behavior Checklist (ABC), which asks the teacher to report on your child's behavior at school. As part of this study, you are also asked to complete the Aberrant Behavior Checklist. You will be asked to complete this instrument at two different points during the course of this study. Specifically, you will be asked to complete the instrument at the beginning of the 4 week period and three weeks after play therapy has ended.

When your child is scheduled for play therapy, the play therapist will work with your school counselor and your child's teacher to schedule a time that will best fit your child's schedule. Your child will participate in play therapy in the playroom designated at your child's school.

Your permission allows the researcher to contact the school counselor to obtain information related to your child's scores on intellectual testing, as well as any cognitive, behavioral, or emotional diagnoses your child may have.
Your permission also allows the researcher to assess your child's development and growth using the Gesell Developmental Observation (GDO) at two different points during the course of this study.

Foreseeable Risks: There are no significant foreseeable risks involved in this study. Your child's participation is completely voluntary. You may withdraw your child at any time during the course of the study. Because your child would be participating in therapy, possible risks may include one or 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 school official or adult. 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. When your child participates in play therapy, he or she will be pulled from another school activity upon the approval of the teachers. It is possible that your child might miss an academic or extracurricular experience. However, because your child's principal and teacher have agreed to their participation in this study, your child will not be placed at academic risk.
3. Because play therapy is a counseling method, your child will be expressing emotions that could be strong 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 your child by possibly improving his or her social interactions, behavioral difficulties, emotional difficulties, and self-esteem. The results of this study may provide school counselors with knowledge that improves the behavioral functioning of children with intellectual disabilities. Although positive changes are expected, individual benefit cannot be guaranteed.

Compensation for Participants: You will receive a $15.00 in cash at the completion of each instrument administration, meaning that upon completion of the study, you will have received $30.00

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 participant's names. The play sessions will be videotaped. The research team will observe the videotapes to ensure the quality of the study, and to observe your child's behavioral functioning. At the end of this study, the videotapes 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 at telephone number (940) 565-2066.

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' Rights: 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:

- Dr. Dee Ray or a research assistant 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 you do not have to allow your child to take part in this study, and your refusal to allow your child to participate or your decision to withdraw him/her from the study 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 rights as the parent/guardian of a research participant and you voluntarily consent to your child's participation in this study.
- You have been told you will receive a copy of this form.
-

Printed Name of Parent or Guardian Date

_____

Signature of Parent or Guardian

For the Principal Investigator or Designee: I certify that I have reviewed the contents of this form with the parent or guardian signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the parent or guardian understood the explanation.

Signature of Principal Investigator or Designee Date

APPENDIX B

TEACHER/PARAPROFESSIONAL INFORMED CONSENT

University of North Texas Institutional Review Board
Teacher Informed Consent Form

Before agreeing 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: Effectiveness of Play Therapy on Behaviors of Children with Intellectual Disabilities: A Single Subject Design

Principal Investigator: Dee Ray, Ph.D., LPC, NCC, RPT-S, University of North Texas (UNT) Department of Counseling, Development, and Higher Education.

Purpose of the Study: You are being asked to participate in a research study which involves investigating if play therapy is effective in helping children with an intellectual disability improve the way they act and feel. The study will also investigate if play therapy improves the behavioral functioning of children identified with an intellectual disability.

Study Procedures: Children identified with an intellectual disability by the Denton Independent School District who have difficulties with behavioral functioning will be identified as potential participants. Identified children, whose parents give permission, will participate in play therapy three times per week for 4 weeks.

Play therapy is a counseling intervention designed for children to express themselves in a developmentally appropriate manner. Elementary-age children have difficulty working through problems with words, so play therapy assists children by providing an environment whereby they can explore their feelings, behaviors, and thoughts.

Your student's play therapist is a doctoral student at the University of North Texas in the Counseling Program, and is also a certified special education teacher, who/m has taught for 5 years.

As part of this study, you will be asked to complete the Aberrant Behavior Checklist (ABC), which asks you to report on your student's behavior at school. You will be asked to complete this instrument at 2 different points during the course of this study. Specifically, you will be asked to complete the instrument at the beginning of the 4 week period and three weeks after play therapy has ended.

Foreseeable Risks: There are no significant personal risks directly involved in this study. Your participation is completely voluntary. You may withdraw at any time during the course of the study. Any instrument completed by you is considered confidential, meaning that the researchers will not reveal anything that is said or written during the administration process. However, if you or your student's parent or guardian discloses child abuse, neglect, exploitation or intent to harm another person, the therapist is required by law to report to the appropriate authority

Benefits to the Subjects or Others: We expect the project to benefit your student by possibly improving his or her social interactions, behavioral difficulties, emotional difficulties, and self-esteem. The results of this study may provide school counselors with

knowledge that improves the behavioral functioning of children with intellectual disabilities. Although positive changes are expected, individual benefit cannot be guaranteed.

Compensation for Participants: You will receive a $15.00 in cash at the completion of each instrument administration, meaning that upon completion of the study, you will have received $ 30.00

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 teachers, 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 participant's names.

Questions about the Study: If you have any questions about the study, you may contact Dr. Dee Ray at telephone number (940) 565-2066.

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' Rights: 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:

- Dr. Dee Ray or a research assistant 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 you do not have to take part in this study, and your refusal to participate or your decision to withdraw from the study will involve no penalty or loss of rights or benefits. .
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as the parent/guardian of a research participant and you voluntarily consent to your child's participation in this study.
- You have been told you will receive a copy of this form.

_____

Printed Name of Teacher Date

_____

Signature of Teacher

For the Principal Investigator or Designee: I certify that I have reviewed the contents of this form. 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

APPENDIX C

INFORMATIONAL PARENT LETTER

Dear Parents:

You and your child are invited to participate in a study that is aimed at determining if play therapy is an effective approach for reducing problem behaviors exhibited by children with an intellectual disability. Because children with intellectual disabilities have an increased risk for developing emotional and behavioral problems, this study may potentially contribute to an understanding of how to address children's behavioral difficulties as well as their social, emotional, and developmental needs.

Enclosed, you will find information pertaining to the purpose of the study, confidentiality, use of research data, procedures, and approval of this research. If you are interested in participating in this study, please return the enclosed consent forms to your child's teacher or to Mrs. Gorton, your child's school counselor.

Once your consent forms are received, you will be contacted by a member of the research team to schedule an informal meeting.

Thank you for your time and consideration.

Sincerely,

APPENDIX D

BACKGROUND FORM

Date: _____

Interviewer: _____

Parent Interview

Parent(s)/Guardian(s):_____
_____

Address:
_____

Phone number:
_____

Child's name:
_____

Child's date of birth:
_____

Child's age:
_____

Child's grade in school:
_____

Ethnicity:
_____

Marital status:
_____

General Information

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

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

Family Information

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

2. How often has your family moved?

3. Have there been any significant changes in your family?

4. What family support systems do you have?

5. What is the primary language used in the home?

Developmental History

Pregnancy

1. Was the pregnancy planned?
2. What was your level of stress during pregnancy?
3. Were there any complications during pregnancy?
4. Was your child delivered on time, late, or premature?
   A. If premature, how long was your child hospitalized?
   B. Additional information pertaining to hospitalization?
5. What was your child's birth weight?
6. Was your child born with any birth defects?
7. Did you or your child experience any complications after delivery?

Developmental Timeline

1. At what age did your child crawl?
2. At what age did your child walk?
3. At what age did your child begin to speak single words?
4. At what age did your child begin to speak in sentences?
5. At what age was your child toilet trained?
6. At what age did your child begin to eat solid foods?

A. Did the developmental milestones seem normal?

Health

1. Has your child had any recent illnesses, accidents, or hospitalizations?
2. Does your child have seizures?
3. Any health issues?

4. Identified disability (s)?
5. Medications?
6. Side effects of medications?
7. Child's primary form of communication?

Behavior Problems

1. Describe your child's problem behaviors?
2. Do your child's behavior problems create conflict amongst your family members?
3. How often does your child exhibit problem behaviors?
4. When do your child's problem behaviors typically occur?
5. How do you deal with your child's problem behaviors?
6. Is your child receiving services for reducing his or her problem behaviors?

Social/Emotional

1. Does your child have any friends? Who?
2. Describe your child's friendships?
3. Describe your child's relationships with siblings?
4. Does your child care about other people's feelings?

Child's Strengths

1. Describe your child's strengths?
2. What do you like about your child?
3. What do you enjoy about your child?

APPENDIX E

FOLLOW-UP QUESTIONS FOR PARENTS/GUARDIANS

Follow-Up Questions for Parents/Guardians

1. Over the past 10 weeks, has your child experienced any events or changes in his or her routine that you believe may have affected his or her behavior?

2. Describe any changes that you have observed in your child in the last 2 months?

3. Have there been any changes in your child's medications, health, or education?

4. Has your child's behavior problems changed in the past 2 months? If so, describe those changes?

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

APPENDIX F

FOLLOW-UP QUESTIONS FOR TEACHERS/PARAPROFESSIONALS

Follow-Up Questions for Teachers and Paraprofessionals

1. Over the past 10 weeks, has your student experienced any events or changes in his or her routine that you believe may have affected his or her behavior?

2. Describe any changes that you have observed in your student in the last 2 months?

3. Have there been any changes in your student's educational environment or routine?

4. Has your student's behavior problems changed in the past 2 months? If so, describe those changes?

5. What has this play therapy experience been like for you and your student?

APPENDIX G

PLAY THERAPY SKILLS CHECKLIST

Play Therapy Skills Checklist (PTSC) ***Center for Play Therapy/University of North Texas***

Therapist:_____ Child/Age _____ Date: _____
Observer: _____

Therapist Non-Verbal Communication:	Too Much	Appro -priate	Need More	None	Therapist Responses/ Examples	Other Possible Responses
Lean Forward/Open						
Appeared Interested						
Relaxed Comfortable						
Tone/Expression Congruent with Child's Affect						
Tone/Expression Congruent with Therapist's Responses						

Therapist Responses:	Too Much	Appro -priate	Need More	None	Therapist Responses/ Examples	Other Possible Responses
Tracking Behavior						
Reflecting Content						
Reflecting Feelings						
Facilitating Decision Making/Responsibility						
Facilitating Creativity/Spontaneity						
Esteem Building/Encouraging						
Facilitating Relationship						
Enlarging the Meaning/Facilitating Understanding						
Succinct/Interactive						
Rate of Responses						

Non-CCPT Responses:

Limit-Setting

Child Made Contact/Connectedness:

Identified Themes:

Therapist's Strengths: Areas for Growth:

REFERENCES

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.

American Association on Mental Retardation. (2002). *Mental retardation: Definition, classification, and systems of supports* (10th ed.). Washington, DC: Author.

Association for Play Therapy. (n. d.). Retrieved April 11, 2009, from http://www.a4pt.org/ps.playtherapy.cfm?ID=1158

Axline, V. M. (1947). *Play therapy*. New York: Ballantine Books.

Baggerly, J. (2004). The effects of child-centered group play therapy on self-concept, depression, and anxiety of children who are homeless. *International Journal of Play Therapy, 12*(2), 31-51.

Barlow, D. H., Hersen, M. (1987). *Single case experimental designs: Strategies for studying behavior change* (2nd ed). New York: Pergamon Press.

Benson, B. A., & Havercamp, S. M. (1999). Behavioral approaches to treatment: Principles and practices. In N. Bouras (Ed.), *Psychiatric and behavioural disorders in developmental disabilities and mental retardation* (pp. 262-278). Cambridge: Cambridge

Blanco, P. J. (2009). *The impact of child-centered play therapy on academic achievement, self-concept, and teacher-child relationship stress*. (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3381780)

Blinn, E. L. (1999). *Efficacy of play therapy on problem behaviors of a child with attention-deficit hyperactivity disorder*. Unpublished doctoral dissertation, California School of Professional Psychology, Fresno, CA.

Bradley, E.A., Summers, J.A., Wood, H. L., & S.E. Bryson. (2004). Comparing rates of psychiatric and behavior disorders in adolescents and young adults with severe intellectual disability with and without autism. *Journal of Autism and Developmental Disorders, 34*(2), 151-161.

Bratton, S. (2010). Meeting the early mental health needs of children through school-based play therapy: A review of outcome research. In A. A. Drewes & C. E. Schaefer (Eds.), *School-based play therapy* (2nd ed., pp. 17-59). Hoboken, NJ: Wiley

Bratton, S. C., Ray, D., Rhine, T., & Jones, L. (2005). The efficacy of play therapy with children: A meta-analytic review of treatment outcomes. *Professional Psychology: Research and Practice, 36*(4), 376-390.

Brodin, J. (2005). Diversity of aspects on play in children with profound multiple disabilities. *Early Child Development and Care, 175*(8), 635-646.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New York, NY: Academic Press.

Danger, S., & Landreth, G. (2005). Child-centered group play therapy with children with speech difficulties. *International Journal of Play Therapy, 14*(1), 81-102.

Dekker, M.C., Koot, H.M., Ende, J., & Verhulst, F. (2002). Emotional and behavioral problems in children and adolescents with and without intellectual disability. *Journal of Child Psychology and Psychiatry, 43*(8), 1087-1098.

Didden, R., Pieter, C., & H, Korzilius. (1997). Meta-analytic study on treatment effectiveness for problem behaviors with individuals who have mental retardation. *American Journal on Mental Retardation, 101*, 387-399.

Dosen, A., & Day, K. (2001). Epidemiology, etiology, and preservation of mental illness and behavior disorders in persons with mental retardation. In A. Dosen & K. Day (Eds.), *Treating mental illness behavior disorders in children and adults with mental retardation* (pp. 3-26). Washington DC: American Psychiatric Press.

Drews, C., Yeargin-Allsopp, M., Decoufle, P., Murphey, C. (1995). Variation in the influence of selected sociodemographic risk factors for mental retardation. *American Journal of Public Health, 85*(3), 329-334.

Dubay, L., Joyce, T., Kenney, G. M. (2001). & Kenney, 2001). Changes in prenatal care timing and low birth weight by race and socioeconomic status: Implications for the medicaid expansions for pregnant women. *Health Services Research, 36*(2), 373-398.

Dykens, E.M. (2000). Annotation: Psychopathology in children with intellectual disability. *Journal of Child Psychology and Psychiatry, 41*(4), 407-417.

Einfeld, S.L. & Tonge, B.J. (1996). Population prevalence of psychopathology in children and adolescents with intellectual disability: II epidemiological findings. *Journal of Intellectual Disability, 40*(2), 99-109.

Emerson, E., & Bromley, J. (1995). The form and function of challenging behaviors. *Journal of Intellectual Disability Research, 39*(5), 388-398.

Emerson, E., Moss, S., & Kiernan, T. (1999). The relationship between challenging behavior and psychiatric disorders in people with severe developmental disabilities. In N. Bouras (Ed.), *Psychiatric and behavioural disorders in developmental disabilities and mental retardation* (pp. 38-47). Cambridge: Cambridge University Press.

Emerson, E., Robertson, J., & Wood, J. (2005). Emotional and behavioral needs of children and adolescents with intellectual disabilities in an urban conurbation. *Journal of Intellectual Disability Research, 49*(1), 16-24.

Fall, M., Navelski, L. F., & Welch, K. K. (2002). Outcomes of a play intervention for children identified for special education services. *International Journal of Play Therapy, 11*(2), 91-106.

Floyd, F. J., & Gallagher, E. M. (1997). Parental stress, care demands, and use of support services for school-age children with disabilities and behavior problems. *Family Relations, 46*(4), 359-368.

Garofano-Brown, A. (2007). *Relationship between child centered play therapy and developmental levels of young children: A single case analysis*. (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3300943)

Gavidia-Payne, S., & Hudson, A. (2002). Behavioural supports for parents of children with an intellectual disability and problem behaviors: An overview of the literature. *Journal of Intellectual & Developmental Disability, 27*(1), 31-55.

Goodman, J.F., & Linn, M.I. (2003). “Maladaptive” behaviors in the young child with intellectual disabilities: A reconsideration. *International Journal of Disability, Developments and Education, 50*(2), 137-148.

Green, V.A., O’Reilly, M., Itchon, J., & Sigafoos, J. (2004). Persistence of early emerging aberrant behavior in children with developmental disabilities. *Research in Developmental Disabilities, 26*, 47-55.

Hellendoorn, J. (1994). Play therapy with mentally retarded clients. In K.J. O’Conner & C. H. Schaefer (Eds.). *Handbook of play therapy* (pp. 349-369). New York: John Wiley & Sons.

Holden, B., & Gitlesen, J.P. (2005). A total population study of challenging behavior in the county of Hedmark, Norway: Prevalence, and risk markers. *Research in Developmental Disabilities, 27*, 456-465.

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Council for Exceptional Children, 71*(2), 165-179.

Hove, O., & Havik, O. (2008). Mental disorders and problem behavior in a community sample of adults with intellectual disability: Three-month prevalence and comorbidity. *Journal of Mental Health Research in Intellectual Disabilities, 1*, 223-237.

Howard, S., Shaughnessy, A., Sanger, D., & Hux, K. (1998). Lets talk! Facilitating language in early elementary classrooms. *Young Children, 53*(3), 34-39.

Kaiser, A. P., & Delaney, E. M. (2001). Responsive conversations: Creating opportunities for naturalistic language teaching (pp. 13-23). In M. Ostrosky & S. Sandall (Eds.), Young exceptional children monograph series No. 3: *Teaching strategies: What to do to support young children's development.* Longmont, CO: Sopris West.

Kaptein, S., Jansen, D.E.M.C., Vogels, A.G.C., & S.A. Reijneveld. (2008). Mental health problems in children with intellectual disability: Use of the strengths and difficulties questionnaire. *Journal of Intellectual Disability Research, 52*(2), 125-131.

Karabekiroglu, K., Aman, M. G. (2009). Validity of the aberrant behavior checklist in a clinical sample of toddlers. *Child Psychiatry & Human Development, 40*, 99-110.

Kennedy, C. H. (2005). *Single-case designs for educational research*. Boston: Pearson Education.

Kerker, B.D., Owens, P.L., Zigler, E., & Horwitz, S.M. (2004). Mental health disorders among individuals with mental retardation: Challenges to accurate prevalence estimates. *Public Health Reports, 119*, 409-417.

Kot, S., Landreth, G., & Giordano, M. (1998). Intensive child-centered play therapy with child witnesses of domestic violence. *International Journal of Play Therapy, 7*, 17-36.

Landreth, G. L. (2002). *Play therapy: The art of the relationship* (2nd ed.). New York: Brunner-Routledge.

Landreth, G. (1993). Self-expressive communication. In C.E. Schaefer (Ed.), *The therapeutic powers of play* (pp. 41-64). New Jersey: Jason Aronson.

Landreth, G. L. (1993). Child-centered play therapy. *Elementary School Guidance and Counseling, 1*(28), 17-29.

Lang, R., O'Reilly, M., Rispoli, M., Shogren, K., Machalicek, W., Sigafoos, J., Regester, A. (2009). Review of interventions to increase functional and symbolic play in children with autism. *Education & Training in Developmental Disabilities, 4*(44), 481-492.

LeBlanc, M., & Ritchie M. (2001). A meta-analysis of play therapy outcomes. *Counseling Psychology Quarterly, 14*(2), 149-163.

Leonard, H., Wen, X. (2002). The epidemiology of mental retardation: Challenges and opportunities in the new millennium. *Mental Retardation and Developmental Disabilities Research Reviews, 8,* 117-134.

Linna. S. L., Moilanen, I., Ebeling, Piha, J., Kumpulainen, K., Tamminen, T., & Almqvist, F. (1999). Psychiatric symptoms in children with intellectual disabilities. *European Child & Adolescent Psychiatry, 8*(4), 77-82.

Lundervold, D.A., & Belwood, M.F. (2000). The best kept secret in counseling: Single-case (n=1) experimental designs. *Journal of Counseling & Development*, 78, 92-102.

Mahoney, G., & Wheeden, A. (1999). The effect of teacher style on interactive engagement of preschool-aged children with special learning needs. *Early Childhood Research Quarterly, 14(*1), 51-68.

Matson, J.L., Fodstad, J.C., & Rivet, T.T. (2009). The relationship of social skills and problem behaviors in adults with intellectual disability and autism or PDD-NOS. *Research in Autism Spectrum Disorders*, 3, 258-268.

Matson, J. L., Minshawi, N.F., Gonzalez, M.L., & Mayville, S.B. (2006). The relationship of comorbid problem behaviors to social skills in persons with profound mental retardation. *Journal of Intellectual & Developmental Disability, 30*(4), 496-506.

Matson, J.L. & Rivet, T.T. (2008). Characteristics of challenging behaviors in adults with autistic disorder, pdd-nos, and intellectual disability. *Journal of Intellectual & Developmental Disability, 33*(4), 323-329.

McClean, B., Dench, C., Grey, I., Shanahan, S., Fitzsimons, E., Hendler, J., & M. Corrigan. (2005). Person focused training: A model for delivering positive behavioral supports to people with challenging behaviors. *Journal of Intellectual Disability Research. 49*(5), 340-352.

McClintock, K., Hall, S., & Oliver, C. (2003). Risk markers associated with challenging behaviors in people with intellectual disabilities: A meta-analytic study. *Journal of Intellectual Disability Research, 47*(6), 405-416.

McGillivray, J.A., McCabe, M.P. (2004). Pharmacological management of challenging behavior of individuals with intellectual disability. *Research in Developmental Disabilities,* 25, 523-537.

Mehlman, B. (1953). Group play therapy with mentally challenged children. In G. L. Landreth, L. E. Homeyer, G. Glover, & D. S. Sweeney (Eds.), *Play therapy interventions with children's problems* (pp. 172-173). Northvale, NJ: Jason Aronson.

Morgan, D. L., & Morgan, R. K. (2009). *Single-case research methods for the behavioral and health sciences*. Los Angeles: Sage.

Moustakas, C. E. (1959). *Psychotherapy with children: The living relationship*. New York: Ballantine Books.

Mundy, L. (1957). The effect of play therapy on IQ and emotional and social development of mentally challenged children. In G. L. Landreth, L. E. Homeyer, G. Glover, & D. S. Sweeney (Eds.), *Play therapy interventions with children's problems* (pp. 174-176). Northvale, NJ: Jason Aronson.

Muro, J., Ray, D., Schottelkorb, A., Smith, M., & Blanco, P. (2006). Quantitative analysis of long-term child-centered play therapy. *International Journal of Play Therapy, 15*(2), 35-58.

Murphey, G. H., Beadle-Brown, J., Wing, L., Gould, J., Shah, A., Holmes, N. (2005). Chronicity of challenging behaviors in people with severe intellectual disabilities and/or autism: A total population sample. *Journal of Autism and Developmental Disorders, 35*(4), 405-418.

Murphey, C., Yeargin-Allsopp, M., Decoufle, P., & Drews, C. (1995). The administration prevalence of mental retardation in 10-year-old children in metropolitan Atlanta, 1985 through 1987, *American Journal of Public Health, 85*(3), 319-323.

Myrbakk, E., & S. Tetzchner. (2008). Psychiatric disorders and behavior problems in people with intellectual disability*. Research in Developmental Disabilities*, 29, 316-332.

Newcomer, B. L., & Morrison, T. L. (1974). Play therapy with mentally challenged institutionalized children. In G. L. Landreth, L. E. Homeyer, G. Glover, & D. S. Sweeney (Eds.), *Play therapy interventions with children's problems* (pp. 172-173).

Packman, J., & Bratton, S. (2003). A school-based group play/activity therapy intervention with learning disabled preadolescents exhibiting behavior problems. *International Journal of Play Therapy, 12*(2), 7-29.

Paczkowski, E., & B.L. Baker. (2007). Parenting children with and without developmental delay: The role of self-mastery. *Journal of Intellectual Disability Research, 61*(6), 435-446.

Post, P. (1999). Impact of child-centered play therapy on the self-esteem, locus of control, and anxiety of at-risk 4th, 5th, and 6th grade students. *International Journal of Play Therapy, 8*, 1-18.

Prouty, G. F. (2001). The practice of pre-therapy. *Journal of Contemporary Psychotherapy, 1*(31), 31-40.

Raman, V., & Kapur, M. (1999). A study of play therapy in children with emotional disorders. *National Institute of Mental Health and Neuro Sciences Journal, 17*(2), 93-98.

Ray, D., Henson, R. K., Schottelkorb, A. A., Garofano Brown, A., & Muro, J. (2008). Effect of short- and long-term play therapy services on teacher-child relationship stress. *Psychology in Schools, 45*(10), 994-1009.

Ray, D., Schottelkorb, A. A. (2010). Single-case design: A primer for play therapists, *International Journal of Play Therapy. 19*(1), 39-53.

Ray, D., Schottelkorb, A., & Tsai, M. (2007). Play therapy with children exhibiting symptoms of attention deficit hyperactivity disorder. *International Journal of Play Therapy, 16*(2), 95-111. doi: 1555-6824/07

Ray, D. (2007). Two counseling interventions to reduce teacher-child relationship stress. *Professional School Counseling, 10*(4), 428-440.

Ray, D. (2004). Supervision of basic and advanced skills in play therapy. *Journal of Professional Counseling, Practice, Theory, & Research, 32*(2), 28-41.

Reese, R. M., Hellings, J. A., & Schroeder, S. R. (1999). Treatment methods for destructive and aggressive behavior in people with severe mental retardation/developmental disabilities. In N. Bouras (Ed.), *Psychiatric and behavioural disorders in developmental disabilities and mental retardation* (pp. 249-262. Cambridge: Cambridge University Press.

Roeleveld, N., Zielhuis, G.A., & Gabreels, F. (1997). The prevalence of mental retardation: A critical review of recent literature. *Developmental Medicine & Child Neurology, 39,* 125-132.

Rogers, C. (1951). *Client-centered therapy*. Boston: Houghton Mifflin.

Ruiter, K.P., Dekker, M.C., Verhulst, F.C., & Koot, H.M. (2007). Developmental course of psychopathology in youths with and without intellectual disabilities. *Journal of Child Psychology and Psychiatry, 48*(5), 498-507.

Schaefer, C.E. (1993). What is play and why is it important? In C.E. Schaefer (Ed.), *The therapeutic powers of play* (pp. 41-64). New Jersey: Jason Aronson.

Schottelkorb, A. A., Ray, D.(2009). ADHD symptom reduction in elementary students: A single-case effectiveness design. *Professional School Counseling, 13*(1), 11-22.

Seltzer, M., & Krauss, M. (2001). Quality of life of adults with mental retardation/developmental disabilities who live with family members. Mental Retardation and Developmental Disabilities Research Reviews, 7, 105-114.

Singh, A.N., Matson, J.L., Cooper, C.L., Dixon, D., & Sturmey, P. (2004). The use of risperdone among individuals with mental retardation: Clinically supported or not? *Research in Developmental Disabilities, 26*, 203-218.

Tankersley, M., Cook, B.G., & Cook, L. (2008). A preliminary examination to identify the presence of quality indicators in single-subject research. *Education and Treatment of Children, 31*(4), 523-548.

Tankersley, M., Harjusola-Webb, S., & Landrum, T.J. (2008). Using single-subject research to establish the evidence base of special education. *Intervention in School and Clinic, 44*(2), 83-90.

Tarver-Behring, S., Spagna, M. (2004). Counseling with exceptional children. *Focus on Exceptional Children, 36*(8), 1-12.

Tonge, B. J. (1999). Psychopathology of children with developmental disabilities. In N. Bouras (Ed.), *Psychiatric and behavioural disorders in developmental disabilities and mental retardation* (pp. 157-174). Cambridge: Cambridge University Press.

United States Public Health Service. (2001). *Report of the surgeon general's conference on children's mental health: A national action agenda*. Washington, DC: Department of Health and Human Services.

United States Public Health Service. (2002). *Closing the gap: A national blueprint to improve the health of persons with mental retardation*. Washington, DC: Department of Health and Human Services.

Wadsworth, B. (1989). *Piaget's theory of cognitive and affective development* (4th ed.). New York: Longman.

Wilson, K., Ryan, V. (2005). *Play therapy: A non-directive approach for children and adolescents* (2nd ed). London: Elsevier.

Wyatt, G. (2007). Psychological contact. In M. Cooper, M. O'Hara, P. Schmid, & G. Wyatt (Eds.). *The handbook of person-centered psychotherapy and counseling* (pp. 140-153). New York, NY: Palgrave Macmillan.

Zhan, S., & Ottenbacher, K. (2001). Single subject research designs for disability research. *Disability and Rehabilitation*, *23*(1), 1-8.