The Effectiveness of Dance/Movement Therapy as a Treatment for Students in a Public Alternative School Diagnosed with Attention Deficit Hyperactivity Disorder: A Pilot Study

A Thesis

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DEDICATIONS

This thesis is dedicated to my fiancé, Jonah, whose love, support and encouragement helped me through this program and thesis process.

To my parents, Diana and Bill Redman. You both have always encouraged me to follow and achieve my dreams….With your love and support, this was possible.

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ABSTRACT

The Effectiveness of Dance/Movement Therapy as a Treatment for Students in a Public Alternative School Diagnosed with Attention Deficit Hyperactivity Disorder: A Pilot Study

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This mixed methodology study investigated dance/movement therapy as a treatment for students in a public, separate special education school who had a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD). The purpose of the study was to evaluate the effectiveness of dance/movement therapy in reducing the three main symptoms of ADHD; hyperactivity, impulsivity, and distractability in children diagnosed with ADHD who were not receiving medication for the symptoms. Based on the findings of this study, dance/movement therapy was associated with a reduction or maintenance of symptoms as measured by the Baltimore County Public Schools Classroom Teacher’s Checklist for Student’s Behaviors. Five male students participated in this study, two of which participated in an eight-week dance/movement therapy intervention and three of which were in a control/comparison group. The researcher collected field notes and compared the data with data reported by classroom teachers who completed two checklists; The Baltimore County Public Schools Classroom Teacher’s Checklist of Student’s Behaviors as well a non-standardized Dance/Movement therapy assessment called the Dance/movement therapy Progress Data Teacher Rating Form-Readiness to Learn. The results showed that the two children in the treatment group improved or had no change in their symptoms related to ADHD. The children in the control group showed that children in the control group improved, declined in progress, or had no
change in their symptoms related to ADHD over the eight-week study period. For the treatment group, the rate and direction of change in progress were triangulated with the researcher’s field notes to understand the context and nature of change. The researcher also identified limitations and implications for future research based on the results of this study.
CHAPTER 1: INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is a disruptive behavioral disorder with early childhood onset, characterized by symptoms of inattention, hyperactivity, and impulsivity (American Psychiatric Association, 1994). The diagnosis as well as its symptoms affect both children and adults in many settings including social, academic, and professional settings. This thesis will discuss the implications associated with this disorder such as etiology, diagnostic concerns, the effects of labeling children with this disorder, comorbidity, and how it continues into adulthood. This is a life-long multi-dimensional behavioral disorder that is being diagnosed more and more frequently in American society, which is why it is crucial that it be researched and evaluated in terms of diagnosis and treatment.

The purpose of this study was to evaluate the effectiveness of a dance/movement therapy intervention as a treatment for ADHD symptoms of hyperactivity, impulsivity and distractibility in children attending a special education public separate day school in Baltimore, Maryland. All students who participated were not receiving medication for their ADHD symptoms at the time of the study.

This study occurred at a Level V school that provides services to children with emotional and behavioral problems. Enrollment in this educational setting indicates that the child’s academic, social, emotional and behavioral needs cannot be met in the general public education setting. A Level V school is the “last stop” in the public school system before a child is transferred to a private, specialized setting with a higher level of services available to meet their needs. This study attempted to address the behavioral issues exhibited by students, in part due to their symptoms of...
Attention-Deficit Hyperactivity Disorder. It also served as an investigation into another treatment method that could complement pharmacological interventions with this population.

The rationale behind this project is based on the fact that ADHD is described as the most common neurobehavioral condition of childhood with its incidence among school-aged children to be estimated to be between 3 and 5% (Furman, 2005; Dulicai, 1999). There is much controversy surrounding the diagnosis as well as the treatment of this disorder because it encompasses psychological, social, emotional, behavioral and physical components (Carey, 2002).

According to Gronlund, Renck and Weibull (2005), there is a strong relationship between motor-perception dysfunction and Attention-Deficit Hyperactivity Disorder, which is why a movement intervention, such as Dance/Movement Therapy, could serve as an appropriate treatment method.

More research is needed in all realms of the disorder but specifically in regards to behavioral problems reflected in the nonverbal movement behavior and the treatment of those behaviors. This study attempted to evaluate the effectiveness of movement interventions using a dance/movement therapy model as a treatment for those nonverbal problem behaviors, which were not being treated with psychotropic medications.

There is limited published research in the specific area of utilizing dance/movement therapy with children who have ADHD and those that are available have small sample sizes. In a study by Goodman (1991), two previous research studies were reviewed to investigate qualitative movement features between
hyperactive boys and comparison boys. It was found that hyperactive children showed a greater incidence of Laban’s concepts of strength, intensity, and unexpected movement transitions. Cavanagh’s (2001) literature review explored aspects of learning disabilities and ADHD, specifically classroom behavior and social interaction. It was found that children with ADHD exhibit social deficits and inappropriate behaviors in the classroom. These examples illustrate why using dance/movement therapy to facilitate motor control and impulse regulation could serve to minimize ADHD symptoms and enhance academic and social success.

Gronlund, Renck and Weibull (2005) investigated the effect and value of dance/movement therapy as an alternative treatment for two aggressive and destructive boys that showed ADHD symptoms. They noted that besides having characteristic symptoms of inattention, hyperactivity and impulsivity, children with ADHD usually have issues surrounding body tensions, disturbed body image and fragmented movement patterns. Therefore, dance/movement therapy would be the creative arts therapy of choice to address the symptoms and integrate the body by focusing on nonverbal movement parameters of ADHD.

In this 8-week study, two groups of elementary school children who had a diagnosis of ADHD for which they were not receiving medication were included in the study. The children were randomly assigned to either a dance/movement therapy treatment group or an observation control group. Because there were only five students whose parents consented to their participation, the treatment group and control were unbalanced. There were two boys in the treatment group and three boys in the control group. It was expected that the children in the dance/movement therapy
group would have reduced symptoms of hyperactivity, impulsivity and distractibility in the classroom setting.

The relatively small and unequal number of children assigned to each group, delimits this study. Additionally, there was a lack of female gender representation in this study. Some participants were also receiving dance/movement therapy treatment services from the American Dance Therapist Registered (ADTR) Dance Therapist at White Oak School while participating in the study, which is a limitation. However, this could not be avoided as that service may have already been in place and required by the child’s Individual Education Plan (IEP). Children may also have been absent from some therapy sessions due to illness, etc, which could impact the continuity and effectiveness of the intervention.

It was also not possible to control for other unknown variables, such as the child’s home environment or outside therapeutic services, which may have affected behavior. Lastly, because a high percentage of children with ADHD also have a comorbid diagnosis, the aspects of those comorbid disorders and their pharmacological interventions may have impacted the outcome of this study. For example, if a student is taking a medication for a mood disorder, side effects may include increased restlessness.

The research question of this study is does dance/movement therapy, in conjunction with other therapeutic services at White Oak School, reduce symptoms of ADHD in children who are not receiving medication when compared with standard therapeutic services alone? The hypothesis is that dance/movement therapy interventions will reduce ADHD symptoms exhibited in the classroom, which would
then allow for maximum learning opportunities and positive social interactions for the child.

In Chapter 2, an overview of ADHD is provided along with the implications of ADHD in the school setting. Additionally, current treatment methods for ADHD are presented, including the Creative Arts Therapies. There are discussions included in Chapter 2 regarding the use of Dance/Movement Therapy techniques with children that have a variety of diagnoses. A review of the literature is presented in terms of how Dance/Movement Therapy has been utilized specifically in the treatment of children with ADHD.

Chapter 3 outlines the steps by which this study was conducted at White Oak School, a public special education day school, in Baltimore, Maryland. Chapter 4 displays the graphs and narrative results of the Classroom Behavior Checklist, Readiness to Learn Form and researcher field notes utilized to measure the effect of Dance/Movement Therapy with children with unmedicated ADHD.

Chapter 5 includes a description of the findings of this study, clinical and educational applications, limitations and implications for future research with this population. Chapter 6 offers a comprehensive, yet succinct summary of the background, findings and implications of this study.
CHAPTER 2: LITERATURE REVIEW

1. Overview of Attention-Deficit Hyperactivity Disorder

1.1 Diagnosis

According to the Diagnostic and Statistical Manual of Mental Disorders (1994), Attention-Deficit Hyperactivity Disorder (ADHD), is a disruptive behavioral disorder with early childhood onset. The three behaviorally manifested symptoms are inattention, hyperactivity, and impulsivity. In order to receive a diagnosis of ADHD, these symptoms must be chronic and pervasive across settings.

There are three subtypes of ADHD including ADHD, Combined Type (314.01), ADHD, Predominantly Inattentive Type (314.00), and ADHD Predominantly Hyperactive-Impulsive Type (314.01). There is also a diagnosis of Attention-Deficit/Hyperactivity disorder Not Otherwise Specified (NOS) in which the individual meets the criteria for ADHD Predominantly Inattentive type, but whose age at onset is seven years or after. In order to receive the subtypes, children must meet certain behavioral combinations of inattention, hyperactivity, and impulsivity for six months (American Psychiatric Association, 1994).

Individuals with clinically significant impairment who present with inattention and whose symptom pattern does not meet the full criteria for the disorder but have a behavioral pattern marked by sluggishness, daydreaming, and hypoactivity also meet the criteria for ADHD NOS (American Psychiatric Association, 1994).

Examples of inattention include difficulty with sustaining attention in tasks or play activities, not following through with instructions, failing to finish schoolwork,
chores or duties, and being easily distracted by extraneous stimuli. According to Kline and Silver (2004), the main problem with inattention in ADHD is the child’s inability to block out unimportant visual, auditory or internal stimuli. The child who is diagnosed with Predominantly Inattentive Type of ADHD is seldom impulsive or hyperactive, yet they have significant problems paying attention. They appear to be daydreaming, “spacey”, easily confused, slow moving, and lethargic (National Institutes of Mental Health, 2006).

Hyperactivity may manifest itself in fidgeting or squirming behavior, excessive talking, or excessive physical activity (such as running or climbing). Impulsivity may be expressed as blurting out answers before questions have been completed, difficulty awaiting turn, and frequent interruption of others verbally (American Psychiatric Association, 1994). Additionally, the child who displays impulsivity does not learn from or reflect on past experiences or consequences (Kline & Silver, 2004).

It has been found that although ADHD is present in males and females, the rate is much higher for males (Abikoff, 2002). This could be the case because males and females exhibit ADHD symptoms in different ways. Males are more likely to be referred for ADHD services due to low grades, aggressive behavior, and externalized behavior, while females describe more internalized symptoms such as depressive symptoms. (Graetz, Sawyer, Baghurst & Hirte, 2006; Abikoff, 2002). This contributes to the unequal gender representation for this disorder.

Not everyone who is overly hyperactive, inattentive, or impulsive has ADHD. It is important that the child receive a thorough examination and appropriate diagnosis
by a well-qualified professional (National Institute of Mental Health, 2006). This is encouraged because hyperactivity can manifest itself differently in different children. As children move toward adolescence, for instance, the obvious high activity level may become less apparent (Kline & Silver, 2004).

Attention Deficit Hyperactivity Disorder is described as the most common neurobehavioral condition of childhood (Furman, 2005). According to Barabasz & Barabasz (2000), the prevalence appears to be increasing. However, the “core” symptoms of inattentiveness, hyperactivity, and impulsivity, which characterize this disorder, are not unique to ADHD, which is why there is debate over many aspects of the issue.

\[ 1.2 \text{ Controversy} \]

There is much controversy surrounding the diagnosis, symptoms and treatment of ADHD for a number of reasons. These reasons include: 1) the symptoms are not clearly distinguishable from normal temperament variations, 2) there is an absence of clear evidence of a brain-related syndrome, 3) neglecting to include the role of environmental factors in the diagnosis, and 4) the harm to the child and family resulting from the diagnostic label (Dulicai, 1999). There is an assumption that ADHD is not a disease per se, but rather a group of symptoms representing a final common behavioral pathway of emotional, psychological, and/or learning problems (Furman, 2005).

According to Carey (2002), behavioral scientists and practitioners have failed to recognize the existence and importance of variations in temperament. Children with a “difficult” temperament cluster (low adaptability, negative mood, high intensity,
etc) are more likely to develop social behavioral problems (Carey, 2002). A study by Foley (2005), examined a proportion of children in an ADHD group to see if they were over represented on the high maintenance temperament profile. It was found that a high percentage of children with high maintenance temperaments were in the ADHD category. These results show that although the constructs of ADHD and temperament have been regarded as two separate bodies of knowledge, they are theoretically and empirically connected and should be considered within that connection.

Some researchers claim that a biologically based metabolic dysfunction in sub-cortical regions project to the frontal lobes of the brain. Barkley (1990) noted that smaller amounts of brain tissue are found in children who have ADHD when compared with normally developing children. Specific deficits suggest abnormalities in neural networks that affect input/output processing and attention (Dulicai, 1999).

There has also been discussion of ADHD being a disorder conveyed through heredity. Waldman & Gizer (2006) reviewed literature and found that 60-90% of ADHD cases were linked to genetics. The majority of the candidate genes found in connection with transmission of ADHD through generations were various facets of the dopamine, norepinephrine, and serotonin neurotransmitter systems. In 2005, Plizka discussed norepinephrine and dopamine and its connection with the long-standing hypothesis of catecholamine dysfunction in ADHD. He summarizes how stimulants effect both of these systems and shows there is a relationship between ADHD and neurotransmitters systems.
Although some authors categorize ADHD as a biologically based disorder (Kline & Silver, 2004), some researchers claim there is a lack of evidence supporting the biological nature of ADHD. Some preliminary brain imaging studies have shown inconsistent differences in children with ADHD, but there is no proof that they are deviations (Carey, 2002). This suggests a commonality of neurological, behavioral, and psychosocial contributory contexts. This behavioral disability has a pervasive negative impact on the wide range of adaptive functioning.

Another source of controversy surrounds the amount of emphasis placed upon consideration of environmental factors that may be contributing to the child’s behavioral issues. “Nowhere is there any requirement that there be consideration of the quality of the environment and of the child’s interaction with it” (Carey, 2002, pp.10). The National Institute of Mental Health (2006) reports that among other possible causes of ADHD-like behavior are: a sudden change in the child’s life, undetected seizures, middle ear infection, medical disorders that may affect brain functioning, underachievement caused by a learning disability, anxiety, and depression. It is imperative that the professional diagnosing the student rules out any of these other possible causes of the symptoms.

Some researchers assert that perhaps the reason some children and adolescents are misdiagnosed as having ADHD is that clinicians are unaware of this differential diagnostic issue and do not use the appropriate diagnostic approach (Kline & Silver, 2004).

Lastly, many experts in the field have difficulty accepting current subjective questionnaires and checklists most commonly used to diagnose ADHD (Carey, 2002).
(Kline & Silver, 2004). Despite the widespread use of these scales, which are often completed by teachers and parents, they have methodological problems (Carey, 2002). Some of these methodological problems include highly impressionistic terms such as “talks too much” and “messy work”. Carey (2002) claims that these types of questionnaires place much of the responsibility on the parents and teachers for reporting the behavior and making clinical judgments as to whether it is normal or excessive in nature. Variations in experiences, tolerance, emotional status, or other qualifications of the parents or teachers are not allowed for (Carey, 2002).

1.3 Consensus

Although there is controversy, general consensus supports the use of multi-modal models when diagnosing and treating ADHD. Research suggests that there is a strong need for individualized assessment and multi-modal treatment of ADHD. In order to address this issue, Kline and Silver (2004) recommend the following steps for comprehensive and well-informed diagnosis:

- Confirm the presence of DSM-IV-TR criteria to establish the presence of one or more of the three behaviors that are characteristic of ADHD.
- Show through clinical history that these behaviors have been present throughout life (chronic).
- Show through history that these behaviors are present in two or more life settings (pervasive).

Thorough evaluation of symptomatic children should be individualized and include assessment of educational, psychological, psychiatric, and family needs (Furman, 2005). There is necessity for individualized treatment tailored for each child’s needs, situation, and environmental context (Gronlund, Renck & Weibull, 2005).
Fisher (1998) asserts that interventions in addition to medication, should involve the learning of social skills, academic skills and psychotherapy for the total treatment of this disorder. Henley (1998) agrees with Fisher but adds that expressive arts therapies, family counseling, and educational monitoring should be included in the multi-modal model for treatment. A behavioral management program combined with a psychoeducational program that teaches coping skills is most beneficial (Henley, 1998).

1.4 Comorbidity

There is a high level of comorbidity associated with ADHD, such as Learning Disabilities (LD), Oppositional Defiant Disorder (ODD), Conduct Disorder (CD) and Mood Disorders (Oosterlaan, Logan, & Sergeant, 1998). This can be an issue when diagnosing, treating and assessing a child with ADHD. Comorbidity of ADHD with another diagnosis can impact the child in terms of academic, behavioral and social functioning.

It is estimated that 30-50% of students with ADHD also have a learning disability (Kline & Silver, 2004). A study by McNamara, Willoughby & Chalmers (2005) addressed the issue that learning disabilities may act as a risk factor, increasing the likelihood that children experience more negative outcomes in many areas of their lives. These researchers compared children with LD only, children with LD and ADHD and children without LD or ADHD regarding their academic orientation, temperament, well being, loneliness, parental relationships, victimization, activities, and friendships. It was found that LD may indeed act as a risk factor increasing the likelihood of more negative outcomes. The results also indicate that for some
psychosocial variables this likelihood may be increased in children with comorbid LD/ADHD.

Other comorbid concerns associated with ADHD are anxiety and mood disorders. In a study where adolescents with ADHD were compared to adolescents without ADHD regarding the rate of anxiety and mood disorders, there was no difference (Bagwell, et al., 2006). Within the ADHD group, however, anxiety and mood disorders in adolescence were predicted by childhood externalizing disorder symptoms and social problems but not by childhood internalizing disorder symptoms. These findings provide little evidence of an overall increased risk for anxiety and mood disorders in adolescents who had childhood ADHD.

There are also social problems associated with ADHD and ODD. Frankel & Feinberg, (2002) found that a diagnosis of ADHD was associated with increased classroom disruption and decreased resistance to provocation by peers, while the diagnosis of ODD was associated with increased hostility toward peers, decreased resistance to provocation by peers and decreased respect for adults. The findings of this study indicate that social skills programs should target social deficits associated with ADHD and ODD.

1.5 Adult ADHD

Fisher (1998) discussed how ADHD is linked to frontal areas of the brain and how if not treated early in life, the symptoms may lead to alcohol problems or conduct disorder in adolescence and adulthood. Arnold (2004) encourages awareness of vicious cycles of ADHD beginning in early childhood that continue into puberty and adulthood which could result in considerable secondary pathology and contribute
to maintaining symptoms. Adults with a history of childhood ADHD have a greater risk of substance abuse, mood disorders, higher divorce rates, and impaired parenting (Barkley, 1998). Early identification of ADHD as a social disability may result in provision of preventative services, such as parent mentor trainings, maximizing of chances for positive experiences in school, extracurricular activities, and the neighborhood, which could minimize the impact of symptoms in adulthood (Gentschel & McLaughlin, 2000).

A phenomenological study by Holmes (2006) aimed to identify coping adaptation strategies utilized by adults with ADHD. It was found that hyperfocus, creativity, resilience, motivation, and drive were potential positive results for ADHD. Negative symptoms consisted of hyperactivity, inattention, and difficulties with relationships. This study also pointed to exercise regimens and accommodations in workplace settings to allow for added movement aided in the reduction of hyperactivity. Focusing on the positive attributes of ADHD and making accommodations may reduce the negative stigma of this disorder in childhood and allow the use of these coping strategies well into adulthood.

2. Implications of ADHD in the school setting

2.1 Overview

Advocacy for children with ADHD is still needed in the public education system. In 1999, the Department of Education estimated that the cost of servicing children with ADHD at $5435 per pupil. Children with ADHD can receive special education services in the public school system if they are categorized in one of the following categories: “Learning Disabled”, “Seriously emotionally disturbed”, or “Other
Health Impaired” (Kline & Silver, 2004). Some children are serviced in the regular
classroom with support, some in resource rooms, some receive special classes, and
others receive services in special schools (Dulicai, 1999). Additional work is needed
to reform instruction with regards to accommodating the differences in between
children with ADHD and normally developing children (Vile Junod, et al., 2006).
ADHD affects school performance in the academic and social realms. Children with
ADHD have a higher probability of low academic engagement, inconsistent work
completion, greater rates of grade retention, failure, and suspension (DuPaul, 2006).

2.2 Behavioral Issues

Observing a child in the classroom environment has the potential to inform the
clinician and school system regarding how the environment may be affecting
behavioral patterns and may help to indicate how severe a target child’s behavior may
be, especially in relation to his or her peers (Epstein, 2005). Research has also
consistently found that students with ADHD experience academic difficulties.
“Previous research suggests that it is the elevated levels of off-task behavior exhibited
by students with ADHD that contribute to the chronic academic underachievement
observed among this population as they progress through their educational careers”
(Vile Junod, et al., 2006, pp. 98).

Cavanagh (2001) summarized studies that have assessed main classroom
behaviors exhibited in ADHD children. It was found that distractibility, lower task
orientation, hostility, and inappropriate movements to be observed. Compared to
same aged peers without ADHD, children with ADHD exhibit higher rates of off task
behaviors, engage in disruptive and inattentive behaviors that interfere with their ability to attend to complete academic tasks (Vile Junod, et al., 2006).

Because of their impulsivity, ADHD children may respond prematurely without understanding what is required by a specific task. The result is a high careless error rate. Additionally, problems in task performance arise when the task demands require executive function (frontal lobe) processing to solve complex problems. Difficulties in organization and controlling their own behaviors are expressed in great variability in schoolwork or task performance (Barabasz & Barabasz, 2000).

2.3 Social/Emotional Aspects

In terms of social skills and peer relations, children who have ADHD struggle with both of these realms. However, few researchers have examined the peer problems of clinically diagnosed children with ADHD (Hosa, et al., 2005). Results of what has been examined indicate that other children do not see children with ADHD as desirable companions.

Children with hyperactivity were overwhelmingly rated as less desirable play companions by unfamiliar children without hyperactivity after only two brief play sessions (Hosa, et al., 2005). Possible reasons for peer rejection include inappropriate social behavior, social knowledge deficits, and negative interactions with peers and teachers (Stormont, 2001). Due to this dynamic, children with ADHD can often get caught up in a cycle of rejection and withdrawal. Their symptoms cause rejection by peers and consequently, the ADHD child withdraws socially which leads to low self-esteem and often dependence on technology, such as television or video games, for stimulation and the cycle perpetuates itself (Henley, 1998).
It has been found that boys with ADHD are poor monitors of their own behavior in social interaction (Hosa, et al., 2005). This suggests a lack of insight and poor social perception likely contributes to the peer problems of children with ADHD, perhaps by impairing their ability to select others most likely to reciprocate their attempts at friendship initiation.

This situation can lead to the child with ADHD having low self-esteem. Van Wagnen (1999) asserts that self-esteem is an important component of a child’s ability to perform academically and socially. Results of research suggest that impaired social functioning with peers is established by early to middle elementary school in children with ADHD (Hosa, et al., 2005). Because children with ADHD are at risk for negative social outcomes, multiple intervention options are necessary (Stormont, 2001).

According to Koshland, Wilson & Wittaker (2004), children with ADHD may do better academically and socially, with a structured learning and play time in a way that may sustain successful interactions. It has also been suggested that children should be given opportunities to respond actively to instructional tasks, which would possibly increase academic performance and levels of achievement (Vile Junod, et al., 2006). This is a recommendation based on Vile Junod’s study (2006) where classroom activities that required passive engagement (such as reading silently) were particularly problematic for students with ADHD. Although all students should benefit from opportunities to actively respond to academic material, this may be especially true for students with ADHD.
3. Current treatment used for childhood ADHD:

3.1 Psychopharmacological Treatment

Currently, stimulant and psychotropic medications are used widely for the treatment of ADHD symptoms. Medications provide short-term behavioral and academic improvement but the children must take them long term to maintain benefits.

Stimulants specifically treat ADHD core symptoms of inattention, hyperactivity, and impulsivity (Arnold, 2004). The results of these medications, including Ritalin and Adderall, are usually seen immediately and will sometimes calm comorbid aggression and oppositional defiant disorder. However, the side effects of these medications include diminished appetite, daydreaming, irritability, and tics (Dulicai, 1999). Others noted by Arnold (2004) include exacerbated mood disorder symptoms, zombie appearance, depression, hallucinations (such as skin crawling), sleep disturbances, and headaches.

Agonists are also prescribed to treat both hyperactivity and impulsivity and comorbid tic disorders. This type of medication may help those children who do not respond to stimulants or antidepressants. It is recommended that it may be effective for those who are overaroused and who have comorbid anxiety (Arnold, 2004). Side effects of agonists include sedation, dry mouth, and rare hallucinations.

3.2 Behavioral Treatment

The foremost strategy for dealing with ADHD has been behavioral contingency training. The goal of behavioral interventions is to lower the level of undesired behavior and strengthen the positive desired result of the child’s behavior (Rachmany,
Programs must motivate the child to overcome destructive impulses, which they seek to gratify (Henley, 1998). Some of these behavioral treatments include star charts, daily report card, token economy, one to one attention, response cost (take away privileges), and time out (Arnold, 2004).

These behavioral interventions can be effective when there is consistency in the child’s various environments. The success of the intervention is highly dependent upon both the parent(s) and teacher(s) cooperation. Not all children respond to the treatment and there is no carryover to the classroom behaviors when learned only with parents (Barabasz & Barabasz, 2000).

Kline & Silver (2004) discuss the importance of ascertaining which of the many ADHD behaviors the student exhibits and to accommodate for that child’s specific needs. For example, accommodations for hyperactivity could include allowing directed and non-disruptive movement about the classroom or using teaching methods that encourage active responding (talking, moving, working at the board).

### 3.3 Alternative Treatments

In addition to pharmacological and behavioral treatments, there are a number of alternative treatments used to treat ADHD symptoms. One of these is neurotherapy where the goal is to normalize the patient. Without dependence on medication or continuous behavioral management therapy, patients are provided with reinforcing EEG responses (Barabasz & Barabasz, 2000). Other methods include nutritional supplements, herbs, biofeedback, elimination diets, vestibular stimulation, and massage (Arnold, 2004). A study by Khilnani, et.al, 2003) revealed that massage
therapy benefited students with ADHD by improving short-term mood state and longer-term classroom behavior.

4. Treatment of ADHD using the Creative Arts Therapies (CAT)

4.1 Creative Arts Therapies

There has been some research on the use of creative arts therapies with children who have ADHD. A case study by Workman (2001) illustrated the efficacy of using multi-modal interventions including expressive movement, sculpture, pottery, meditative relaxation to decrease impulsive behavior, increase attention span, increase emotional expression and improve self-esteem in a young boy with ADHD and dyslexia.

Henley (1998) supports that expressive arts therapies can help to break the cycle of rejection and withdrawal and can facilitate and enhance the effectiveness of other interventions. This author’s intervention created socialization objectives which included establishing rules of behavior, practicing communicating and listening, awareness of body language and facial expressions, awareness of emotional states of others/empathy, resolution of conflicts, self-control, and self-confidence (Henley, 1998). “Art therapies such as art, dance, drama, and music therapy offer parents more treatment alternatives” (Gronlund, Renck, & Weibull, 2005, pp. 65).

4.2 Music Therapy

In a survey where music therapists were asked to list the methods they use to treat children with ADHD, they noted that they most use a combination of music and movement and their treatment goals are mostly behavioral in nature (Jackson, 2003).
These modalities facilitated reinforcement of behavioral goals and the use of coping strategies.

Rickson (2006) compared the impact of instructional and improvisational music therapy approaches on the level of motor impulsivity displayed by adolescent boys with ADHD. While no firm conclusions could be drawn, there were indications that the instructional approach may have contributed to a reduction of impulsive and restless behaviors in the classroom. The author suggests that music therapy could be related to improvement in a range of developmental areas.

4.3 Art Therapy

Safran (2002) asserted that art therapy allows for students to express how they feel about issues surrounding their diagnosis of ADHD, such as medications, school, punishments, and peer relationships. In this intervention, the children’s artwork was shown to the teachers and parents. Expressive arts therapies allowed the parents and educators to get a glimpse into the feelings the child had about dealing with the difficulties of ADHD, which can facilitate better understanding for assessment and treatment.

A case study by Goforth (2001) investigated whether first drawing a mandala led to improved focus on the next art task offered after the mandala was completed in boys, ages 7-11. The results indicated that mandalas were a useful therapeutic technique in art therapy with children, and that there was a link between creating a mandala and improved focus on a subsequent art task.

Using art therapy combined with energy education has also been researched. Plagens (2004) investigated the effect of a multi-modal treatment...
approach of these two modalities with a 10-year-old girl diagnosed with ADHD. The results of the child’s self-reports indicated an increase in awareness of body sensations and increase in ability to artistically and verbally articulate her feelings. The researcher asserts that the child had reached a higher level of psychological and physical integration after this intervention and it was maintained up to four months after the completion of the intervention, suggesting long-term efficacy.

5. Dance/Movement Therapy as a treatment for children

Dance/Movement Therapy is “the psychotherapeutic use of movement as a process which furthers emotional, social, cognitive, and physical integration of the individual” (American Dance Therapy Association, 2006). In Dance/Movement Therapy practice, movement is used to foster social interactions and expression of feelings as well as to gain a sense of self-control (Koshland, Wilson, Wittaker, 2004). Dance/Movement therapy has been used with children for the treatment of a variety of needs and disorders including aggression, sexual abuse, trauma, psychiatric disorders, pervasive developmental disorders, medically involved children and more. According to Erfer (1995), broadening or expanding a child’s movement repertoire provides him or her with a wider range of skills to use in understanding and coping with the environment.

5.1 Children with varied diagnoses

A study by Koshland, Wilson & Wittaker (2004), evaluated a dance/movement therapy violence prevention program with 54 multicultural elementary school children. The emphasis was placed on development of critical thinking skills and conflict resolution skills. Three skill-building areas were addressed: self-control,
emotional regulation and problem solving. Specific movement structures facilitated the incorporation of these skills through the use of physical action to expand understanding, mastery and control of physical, cognitive, social/emotional aspects of behavior. The authors found the intervention to be effective in reducing aggressive behaviors and classroom observations showed a significant decrease in the frequency of negative behaviors. Since children with ADHD may become aggressive due to their impulsivity, a dance/movement therapy could also prove to be beneficial with the ADHD population.

When working with children who have experienced sexual abuse, there are often distortions regarding self-concept, shame, and trauma symptoms. Truppi (2001) compared the efficacy of two interventions, multi-modal verbal therapy and dance/movement therapy for the treatment of these issues with adolescent girls in a residential placement. This study found both methods to be equally beneficial. There were no significant differences found when shame, sexual concerns, dissociation, and post-traumatic stress were measured after using these two forms of interventions. This was attributed to the possibility that the group size was too small and the length of treatment was not sufficient.

A recent study aimed to use dance/movement therapy to facilitate cohesion in groups of children ages 5-8 in an inpatient psychiatric unit (Erfer & Ziv, 2006). According to the authors of this study, cohesion is important because it provides support, and a safe, nonjudgmental atmosphere in which the children are able to work toward attaining therapeutic goals. Improved impulse control, increased frustration
tolerance, gratification delay, and the ability to get along with others were observed in the dance/movement therapy group, which facilitated cohesion.

In 2001, Hartshorn, et al. examined the effects of creative movement therapy on autistic children. Results of biweekly sessions over a two-month period showed that movement therapy was associated with an increase in attentive behaviors and a decrease in stress behaviors. Subjects spent less time wandering, more time showing on-task behavior, less time showing negative responses to being touched and less time resisting the teacher, when compared with autistic control subjects. The movement therapy addressed attention, tactile and interactional components.

A thesis study by Conner (1998) investigated the merit of group dance/movement therapy and its effects on social relatedness and development of play behaviors in preschool aged children with pervasive developmental disorders (PDD). Children with PDD often have social and communicative deficits, and the research hypothesized that group DMT would facilitate social relatedness. Statistically significant improvement was noted in regards to social relatedness in the subjects.

Medically involved children often deal with issues surrounding body image. Mendelsohn (1999) discusses three cases of children with medical conditions and how the opportunity to communicate through dance and movement leads naturally to playing and non-verbal enactments through which hospitalized children can express their needs and feelings.

5.2 Children diagnosed with ADHD

In 1991, Goodman explored the qualitative and stylistic features of movement that might distinguish hyperactive children from normally developing children. This
model was utilized because the stylistic and contextual aspects of activity, such as intensity and situational appropriateness, are probably far more important than the more easily quantified dimensions, such as frequency and duration (Whalen, 1989).

The author discussed two studies, which investigated movement features of hyperactive boys. It was found that the hyperactive children showed a greater incidence of strength and intensity, and unexpected transitions. There were also greater rates of sudden and inappropriate behavior in hyperactive boys than comparison boys.

A pilot study by Gronlund, Renck & Weibull (2005) investigated the effect and value of dance/movement therapy as an alternative treatment for aggressive and destructive boys that showed symptoms of ADHD. The results showed that there is a strong relationship between motor dysfunction and ADHD. Besides having characteristic symptoms of inattention, hyperactivity, and impulsivity, children with ADHD usually have problems with body tensions, disturbed body image and fragmented movement patterns. Based on the results, the authors suggested that kinesthetic coherence and motor planning/coordination might be a stepping-stone to the successful treatment of young boys diagnosed with ADHD.

Van Wagnen (1999) found that certain body postures and attitudes are correlated with the child’s emotional state. Therefore, if the child is more likely to experience low self-esteem due to the symptoms and implications of ADHD, the body attitude would be impacted. Since children with ADHD often suffer from low self-esteem, dance therapy can provide the very avenue they need to express their strengths and personal resources/coping skills and transform underlying emotions
such as shame, which leads to the destructive impulsivity that characterizes their behavior and coping methods (Gronlund, Renck & Weibull, 2005).

Dance/movement therapy (DMT) with children diagnosed with ADHD generally focuses on a clearer positive sense of self, including better perception of external body boundaries as well as internal boundaries (Rachmany, 2000). Rachmany (2000) claimed that DMT can facilitate connection of the sensory experience of self in a child with ADHD and thus form a firmer sense of self though increasing grounding, impulse control, safe emotional expression and physical/psychological integration.

Based on previous literature, dance/movement therapy could serve to be an appropriate treatment method for this population. Children with ADHD benefit the most – more than any other disorder – from regular exercise, because movement exercises increase dopamine in the brain, just like a stimulant does (Gronlund, Renck, & Weibull, 2005). The strong research finding for the effectiveness of behavioral and motor treatments should prove useful for dance/movement therapists working with ADHD children (Dulicai, 1999).

“A potential research study derived from these findings may include the focus of dance/movement therapy and its effect on motor movements in the classroom with children with ADHD” (Cavanagh, 2001, pp.101). It was suggested that all subjects would have ADHD and observation of classroom behavior would be needed for the experimental group and control group.
CHAPTER 3: METHODOLOGY

Design

The purpose of this study was to evaluate the effectiveness of a dance/movement therapy intervention as a treatment for ADHD symptoms of hyperactivity, impulsivity, and distractability in children who are not receiving medication to treat those symptoms. The proposed outcome of this study was that the dance/movement therapy intervention would reduce the symptoms that characterize ADHD in children. The independent variable was dance/movement therapy and the dependent variables are inattentiveness, hyperactivity and impulsivity.

A pre/post control group mixed methodology design was the original design utilized at the outset of this study. However, due to the small and unequal sample size, a typical control/treatment group design would not have been able to fully describe the nature of change. Therefore, the researcher also used both qualitative and quantitative data to do a mixed methodology case-by-case analysis. This allowed for a contextual understanding of each child and the nature of any change that may have occurred over the course of the study. One group was randomly assigned to a dance/movement therapy group and continued with their regular services while another group was only observed while they continued with their regular services.

Location and space of the study

This study was conducted at White Oak School in Baltimore, Maryland. White Oak School is a public separate day school for special education students with emotional and behavioral disorders, serving students from preschool through seventh
The students exhibit a wide range of psychiatric diagnoses – ADHD, autistic disorder, conduct disorder, oppositional defiant disorder, mental retardation, bipolar disorder, etc. Students receive a wide range of services at White Oak School including reading services, speech and language services, occupational therapy, social work services, family counseling, art therapy, and dance/movement therapy. Their therapeutic case manager works with the teacher and parents to discern what services would best suit the child’s needs. The school’s main concern is to tailor the child’s Individualized Education Plan (IEP) to meet the specific needs of the child. The environment is structured for small classrooms, with a low student to teacher ratio and one to one attention for students who need it.

The Baltimore County Public School System Department of Research, Accountability and Assessment reviewed and approved this research study to be conducted at White Oak School (Appendix C). Additionally, the principal of White Oak school was aware of the study and supplied verbal permission. The Institutional Review Board at Drexel University also provided approval for this study.

The therapy sessions were conducted in the current Dance/Movement Therapy room, which is a classroom that was converted into an open movement space. This room has a large rug in the center and a wall size mirror on the wall; with large movement props (such as a trampoline, wedge mat, large foam “donut”) on the side of the room and small movement props (such as scarves, balls, blocks, instruments) inside of a cabinet or on a bookshelf.
Subjects

1. Description of Subjects

The subjects were selected from the student body of White Oak public separate day school for special education students in Baltimore, Maryland. Only students who are referred to dance/movement therapy by their designated Therapeutic Case Manager at White Oak School were included in the study. Of the referred students, those students who had a diagnosis of any subtype of ADHD and were not receiving medication for the treatment of those symptoms at the beginning of the study, were included in the study. There were no incentives or remuneration offered to the subjects or their parents for participation in the study.

Students at White Oak School who had a diagnosis of any subtype of ADHD and were not receiving medication for their symptoms for this disorder were included in the study. There was no indication in the educational chart regarding specific subtypes of ADHD. It was acceptable if the students were receiving outside therapeutic services or had a comorbid psychiatric diagnosis for which they may or may not have been receiving medication. All candidates who met these criteria and fell within the age range of 4 to 13 were considered regardless of gender, race, ethnicity or socioeconomic status. Students who were taking stimulants or psychotropic medications for ADHD symptoms were not included in the study.

Males and females from all racial and ethnic backgrounds were eligible for participation in the study if they meet the inclusion criteria. Five male subjects, out of ten males recruited, were consented to participate in this study. The five students were given permission for consent by their parents by the deadline given by the researcher. One child’s parent would have given permission for their child to
participate, however, the study had already begun. Therefore, that child was not eligible for the study.

There was one dance/movement therapy treatment group and one control group. The ages of the subjects included in this study ranged from 6 to 11 years of age. The composition of the eligible, consented students was 1 first grader, 2 third graders, and 2 fifth graders.

1.11 Description of subjects in the treatment group

Prior to the study, the researcher did not know the subjects in the treatment group.

1) Case #1- Thomas (a pseudonym)

Thomas was an eleven-year-old boy in the fifth grade, from a mixed ethnic background (Cherokee Indian and Liberian). He lived with his mother and had a brother who is two years his senior. In his educational chart, he was described as having Attention Deficit Hyperactivity Disorder as well as Pervasive Developmental Disorder- Not Otherwise Specified (PDD NOS). He has a history of asthma. He is currently not receiving medication for any of his medical, behavioral, emotional or psychological symptoms.

2) Case #2- Charles (a pseudonym)

Charles was a nine-year old African American male in third grade. He was an only child and lived with both of his parents, although they were not married at the time of the study. His chart described his diagnosis as Attention Deficit Hyperactivity Disorder for which he was not receiving medication. His medical health was listed as normal.
1.2 Description of subjects in the control group

Prior to the study, the researcher knew one student (Case #4) in the control group. This was due to his enrollment in previous dance/movement sessions at White Oak School, in which the researcher was a co-leader. However the researcher ceased coleadership of that dance/movement therapy session during this study.

3) Case #3- Ryan (a pseudonym)

Ryan was a six-year old first grade student. His parents were married and he resided with both of them in the same household. He had a diagnosis of ADHD and was also described as being “developmentally delayed” in the area of communication. He was not on any medication and his medical history was noted as normal.

4) Case #4- Trent (a pseudonym)

Trent was a nine-year old third grade Caucasian student. He resided with his grandfather and his grandfather’s fiancé. His grandfather’s occupation caused him to be out of the home much of the time; therefore the grandfather’s fiancé was the primary caregiver. Trent previously lived in a group home before living with his grandfather, due to neglect and abandonment on behalf of his biological parents. Trent’s chart described him as having ADHD as well as a history of adjustment problems with anxiety. His medical record was unremarkable and he was not receiving medication for any reason.
5) Case #5- Nathan (a pseudonym)

Nathan was an eleven-year old fifth grade student whose chart listed his diagnosis as ADHD. Nathan’s grandmother gained custody of Nathan and his younger sister due to neglect on behalf of the biological mother. Nathan had two other sisters who resided with the biological mother at the time of this study. He was not receiving medication and his medical health was described as normal.

2. Subject Selection Procedures

Criterion sampling was used in this study, in which a criterion was set and then cases that met the criterion were selected (Mertens, 2005). The criterion was to have a diagnosis of ADHD and to not be receiving medication for that diagnosis. After the criterion was given to the Therapeutic Case Manager’s at White Oak School, they referred potential candidates to the researcher. All candidates who were referred were included in the study; except for one whose consent was given past the study start date.

Of the children who were consented to participate in the study, they were randomly assigned to either the dance/movement therapy treatment group or control group. Since there were an uneven number of subjects to assign to each group, the researcher randomly selected which group would receive two subjects and which group would receive three subjects by selecting the groups from a hat. There were to be two students assigned to the dance/movement therapy treatment group and three students to be assigned to the control group. Then, the researcher put all names into a hat and randomly selected which students would go into each group.
**Investigational Methods and Procedures**

**Procedures**

Dance/Movement Therapy sessions are a regular part of treatment at White Oak School. Many children receive individual, dyad, or group dance/movement therapy as part of their IEP services. This group was assembled for the specific goal of addressing ADHD symptoms in students using dance/movement therapy. The group sessions were led by this researcher and took place once a week for 30 minutes.

The teachers of the two children in the treatment group chose the time of day for the group therapy session. They chose a time period so as not to have students absent during subjects where they needed the most instruction for state testing, such as reading or math. Since the students in the control group did not receive the intervention, the pretest occurred before 1pm (the time of the DMT group session) and the posttest was completed after 1:30 pm on the Weeks 1, 4, and 8.

This time period may have contributed to the scores children in both groups received, as some children perform better in school in the beginning of the day and become more restless as the day goes on. However, some children have difficulty transitioning from home to school in the morning and their day improves over the course of the day. Students in this study fluctuated in terms of their behavioral patterns noted at certain times of the days. Some children exhibited positive behaviors more in the morning; others did so in the afternoon.

The subjects were asked to participate in eight weekly dance/movement therapy sessions and after each session were brought back to their classroom by the student researcher/therapist. At the beginning of the first session, the children were asked to
sign an assent form (Appendix B). The researcher told them that this group was for a research study that they could drop out of the group at any time. Both students signed consent willingly and verbally repeated back the parameters of consent.

2.2 Instrumentation

Teachers were instructed to complete two pretests, two interim tests, and two posttests at the beginning, middle and end of the 8-week dance/movement therapy sessions. These included the Classroom Teacher’s Checklist of Student’s Behavior (Appendix D) and the Readiness to Learn assessment (Appendix E).

The first checklist, which is currently approved and used by Baltimore County Public School system, focuses on frequency of behaviors often exhibited by children with ADHD and other diagnoses. This is a Likert-Type scale instrument in which a behavior is checked as being observed at a range scaling from Very Often to Not At All. For the purposes of this study, each description was assigned a number; Very Often, 0; Often, 1; Moderately, 2; Seldom, 3; and Not at All, 4. The checklist is divided into 5 categories, Activity, Attention, Conduct, Social/Emotional, and Other Behaviors. These categories each had a possible number of points varying from 16 to 24. The higher scores correlated with a higher rate of more desirable behaviors. For the purposes of this study, the researcher focused on rate of change in the Activity, Attention, and Conduct categories, since they are directly related to the three dependent variables measured; hyperactivity, distractibility, and impulsivity.

Since teachers at White Oak School currently use this checklist to evaluate classroom behaviors of students with ADHD to provide information for a doctor or psychiatrist, it was not necessary to train them to use this instrument. Although there
are other standardized measures used to assess ADHD behaviors, the researcher chose this assessment in light of time constraints of this study and lack of time to train teachers to use a different measure. Also, the researcher did not want to overload teachers with additional demands of using a new instrument.

The Readiness to Learn assessment served as a movement profile that corresponds to the Classroom Teacher’s Checklist of Student’s Behavior. This is also a short Likert Scale instrument in which a number is assigned to three categories: Emotion, Tension, and Attention. This scale ranges from 1 to 5 for each of the three categories, with 1 being the lowest score and 5 being the highest. The American Dance Therapist Registered (ADTR) Dance Movement Therapist on staff at White Oak School developed this assessment. This tool also focused on evaluation of ADHD symptoms and has been used by classroom teachers to assess White Oak students in the past.

Additionally, the researcher took qualitative field notes while using a movement therapy progress form, of each group session and each child to more clearly understand the context and nature of the dance/movement therapy effects.

Informed Consent/Assent (30 minutes)-

The researcher contacted parents of the qualifying children, by telephone or letter, to discuss their interest in enrolling their child and scheduled a meeting to discuss the details of the study. Written consent forms (Appendix A) and verbal explanation of the purpose of the study, procedures, and their child’s rights as a research participant were given. The researcher also informed parents of their right to remove their child from the study at any point with no penalty to them or their child.
Children over the age of 7 were asked to sign assent forms (Appendix B) after their parents consented to their participation in the study.

The researcher explained that the child and parent’s confidentiality would be maintained by having the child’s files locked in a cabinet and would only be viewed by the researcher, the researcher’s supervisor and the child’s teacher. The child’s name was not to be recorded or used in any written material pertaining to the study. At the conclusion of the explanation, the researcher asked the parent to repeat in his/her own words their understanding of their participation in the study. If they understood, they were asked to sign two copies of the consent form. One copy was given to the parent for their records while the other was stored in a locked, secure file in the Hahnemann Creative Arts in Therapy Offices.

*Data Collection One- Week 1 (Treatment and control group)*

*Demographic Data (15 minutes):*

Once the students were referred to dance/movement therapy or consented to be in the control group, the researcher collected demographic data using a White Oak School Therapy Cover Sheet (Appendix F). This cover sheet is an organizational tool used to collect data from confidential files so that only pertinent, need to know information is recorded. These files include mostly educational data. Due to the nature of the setting and confidentiality concerns, psychiatric data is minimal. This data was stored in a locked, confidential file for each child at White Oak School.
Data Collection Two- Week 1 (Treatment and control group)

Pretest (5 minutes per child):

At the beginning of the 8-week dance/movement therapy treatment period, each participant’s classroom teacher completed two assessments, the Classroom Teacher’s Checklist of Student’s Behavior and the Readiness to Learn Assessment and returned them to the researcher. These assessments were completed on the same day (before 1pm and after 1:30 pm) based on natural observations in the classroom setting and given to the researcher within one week.

Data Collection Three- Week 1-8 (Treatment group only)

Dance/Movement Therapy Session (30 minutes, 1x/wk):

The researcher described that the children were selected for this study to see if dance/movement therapy could help them to keep their bodies in control, discuss feelings, and work together to perform movement activities. They were told they could decide not to come to dance/movement therapy at any time, for any reason. The dance/movement therapy session addressed the goals of each group and each child’s behavioral issues.

The researcher began with a warm-up exercise/greeting (5 minutes) using stretches, yoga, and breathing to greet each child and welcome them to the group. During the process portion of the session (20 minutes), the researcher instructed the group members to decide on a game or activity together. There were a wide variety of fine and gross motor activities offered such as puzzles, board games, puppets, a trampoline, a large foam donut, a log swing, etc. This structure was chosen in order to address social, emotional, and behavioral goals outlined in White Oak School’s
social/emotional IEP goals for each child. Both students had goals related to increasing their frustration tolerance and increasing positive interaction with peers.

The closure (5 minutes) consisted of relaxation on a mat on the floor with the lights dimmed and classical music to calm the children and prepare them for their return to the classroom teacher. During this time, sometimes the researcher remained silent. Other times, the researcher reminded the students to consider anything positive they did during the session (such as following directions, taking turns, etc.) and asked them to keep that in their minds for the day.

After the children were returned to their classrooms, the researcher then reflected and recorded observations, using the movement progress form, of each child’s response to the intervention as well as the group as a whole.

Data Collection Four- Week 4 (Treatment and control group)

Interim Test (5 minutes per child)

An interim test, using the same instruments as the pre and posttest, completed for both the treatment group and the control group, during the 4th week of the study. This served to inform the researcher of any changes exhibited by the children or trends as the study progressed. After the teachers completed this interim assessment they returned them to the researcher within one week. The assessments were completed before 1pm and after 1:30 pm on the same day.

Data Collection Five- Week 8 (Treatment and control group)

Posttest (5 minutes per child):

At the conclusion of the study, the teacher completed a new Classroom Teacher’s Checklist of Student’s Behavior for all participants and a new Readiness to Learn
assessment and returned the posttests to the researcher within one week. The assessments were completed on the same day.
CHAPTER 4: RESULTS

This chapter describes results from each of the seven sessions of study protocol and outlines. The study was to originally have eight consecutive dance/movement therapy sessions. However, due to inclement weather and cancellation of the county school system on the scheduled study group day, the sixth DMT session was cancelled and therefore not included in the study.

The case by case results of each child in the DMT treatment group are presented in the following order: (1) Field Notes with Movement Data from the Movement Therapy Progress Form (2) Baltimore County Public Schools (BCPS) Classroom Teacher’s Checklist of Student’s Behavior Data (3) Dance/Movement Therapy Readiness to Learn Data and (4) Case Summary. A synthesis of Case #1 and Case #2 is provided.

The case by case results of each child in the control/comparison group are presented in the following order: (1) Baltimore County Public Schools Classroom Teacher’s Checklist of Student’s Behavior Data (2) Dance/Movement Therapy Readiness to Learn Data (3) Case Summary. A synthesis of Case #3, #4, and #5 is provided.

Due to the small sample size, the researcher did not test results for statistical significance. Rather, the researcher analyzed the results case-by-case, based on patterns and trends displayed in the data from the pretest, interim test, and posttest.

Language from Laban Movement Analysis and the Kestenberg Movement Profile are used throughout the session data described. The reader should refer to the glossary in Appendix I for definitions of these terms.
Treatment Group:

Case #1- Thomas (pseudonym)

1. Field Notes with Movement Data from the Movement Therapy Progress Form

The following are the field notes taken by the researcher/therapist after each session. Each of the seven out of eight scheduled sessions is described in narrative form.

Session #1— Week of Pretest

Content/themes/tasks of the group: During this first group, the therapist introduced herself to the group members, explained the group and this study, asked the children to sign consent, discussed the time frame for these groups and set the group and session structure. After talking, the therapist led the group in a series of warm-up stretches and then asked each member to share a stretch for all group members to participate in. This would become the routine for the warm-up in all of the following sessions. The therapist then asked the two group members to decide on an activity together in order to assess their ability to cooperate and come to a decision together. It also provided the therapist with information regarding each child’s preference for certain movement activities. The therapist allowed the group members to look around the room and choose a prop or activity they would like to do together. They chose a log swing that was in the corner of the room and the therapist hung it up using a steel beam in the ceiling. Then, they chose dodge ball as a second activity. Both of these group tasks were focused on working together, taking turns, and impulse control. The end of session consisted of resting on
mats with the lights dimmed and classical music in the background. This would become the routine closure procedure for ending sessions.

Movement Therapy Progress Form Data: Thomas was quiet and his affect was pleasant when he came to session and during the first portion of the session. His stretch he offered to the group was one that included twisting the legs in a knot while crawling. His stretches thereafter were all the same as the other student’s, he refrained from creating his own. He used *bound flow* and core strength on the log swing. He did not want the other group member to push him on the swing and asked that only the therapist push him. He was able to use *strength and directness* when throwing the dodge ball. During dodge ball, both group members chose to be on the same team against the therapist, however they would not throw the ball at the therapist. During rest, his body was calm and still.

Clinical Impression:

*Activity Level:* Thomas was tentative, hesitant, and somewhat “slow to warm up”. His mood was pleasant and calm. He shows no signs of hyperactivity in the session and was often in control of his body

*Attention:* He followed directions after one prompt and was compliant with all requests. However, when conversing with Thomas, his thoughts often became tangential and he was hypervocal. Thomas’ main symptom that was related to ADHD was his internal distractibility.

*Conduct:* He was able to interact well with the other group member, even though he was eleven and the other group member was nine. He was able to
verbalize his preference for activities and how he wanted to perform an activity. He worked well as a team with the other group member in the dodgeball activity. His gross motor ability seems somewhat developmentally immature as evidenced by his disorganized stretch in the warm up.

Session #2—

Content/themes/tasks of the group: The task for the second group was to share stretches in the warm-up and have the group member decide on an activity together. Both members decided on foam “swords”/bats in which they used to perform a duel. The goal and rules of this activity structured by the therapist was to stay safe and only use a bat to hit another bat, not the other student’s body. After this activity, the members chose a large foam “donut” in which they decided to roll in together. The session ended with playing catch with Velcro mitts.

Movement Therapy Progress Form Data: Thomas displayed flat affect when he was retrieved from his classroom. Thomas offered different stretches in warm-up of the second session. During the sword fighting, he suggested they slow down the duel fighting and do it in “slow motion”. Thomas’ affect brightened during this activity. Thomas was advancing with directness and strength towards the other student with his sword for the majority of the activity. During the donut activity, Thomas used more free flow and passive weight and allowed himself to roll “floppily” in the donut. Although both students were very close in proximity, they kept their bodies in their own kinespheres. During the catch activity, Thomas changed the manner in which
he threw the ball each time, using *strength, lightness, and directness in the high, medium and low levels.*

*Clinical Impression:*

*Activity Level:* Thomas was again calm and slightly hesitant in the second session. He was calm, compliant and controlled. His mood seemed slightly somber and almost flat. Yet, he seems to enjoy both exerting energy, such as in the sword fighting, as well as recuperation in the donut. *His affect changed from flat to bright, with the activities throughout the session.* This was evidenced by his smile during the sword fighting and donut activities.

*Attention:* Thomas seemed internally preoccupied as the therapist had to repeat comments to him a few times before he made eye contact with the therapist and responded.

*Conduct:* Thomas was more creative during the warm-up stretches, offering new ideas. This creativity and changing of ideas occurred during the sword fighting and during catch, as well. He took a more offensive position during the sword fighting activity. He was respectful and conscious of personal space in the donut and kept his body in control.

Session #3—

*Content/themes/tasks of the group:* The group began with acknowledgement of Thomas’ affect, which included crying, *bound flow,* and an inability to verbalize anything beyond grunting. Thomas immediately entered the room and wanted to hide in the donut and behind a large therapy ball. The therapist encouraged him to join the group in the circle and he did. Then we continued
with the warm-up stretching routine. Although Thomas did not want to contribute his own stretch, he participated in performing others stretches. The therapist suggested the log swing and Thomas said “I don’t care if we do the log swing”, he could not verbalize if he wanted to do the activity or not. Since the other group member wanted to do the log swing and the therapist thought it would calm Thomas, we proceeded with swinging. The therapist could have made a choice to work with the expression of strength, however the therapist sensed that Thomas needed a way to calm his body in order to express and verbalize his feelings. The goal of this task was to physically calm the body with the swaying/indulging rhythms and release some of the bound flow to reach a point of being able to converse about the emotions presented, which the group was able to do. The session ended with rest on mats and deep breathing while listening to nature sounds music.  

Movement Therapy Progress Form Data: Thomas would not make eye contact with or respond to the therapist as we transitioned to the movement session. He was pushing and hitting the wall in the hallways. He appeared angry and frustrated. The therapist had to ask him if he would be able to come to session due to his agitation. He grunted, “Yes”. During the warm-up, his body attitude was a “Ball”/concave shape, and his torso was extremely bound. His level of interaction was minimal and he seemed withdrawn. He was displaying a twisting rhythm (Kestenberg-Amighi, 1999) that looked like writhing, although this was subtle. He also had tension in his face. As soon as Thomas got on the log swing, his bound flow immediately decreased in his...
whole body and he smiled. This seemed like an abrupt shift in affect and the *
Flow Effort*. His transition back to class was appropriate and calm, he was
using more *free flow* and *sustainment* in his gait.

*Clinical Impressions:*

*Activity Level:* Thomas’ activity level was one of agitation rather than
hyperactivity. He was frustrated, angry and upset at the beginning of the
session. The release of *bound flow* on the log swing seemed to encourage
more *free flow* and calming. Calming down may have allowed him to access
ego strength, cognitive attributes, as well as physical self-control. This
facilitated Thomas to verbalize the shift from being “mad” at the beginning of
session to being “happy” at the end of session. Although Thomas was unable
to give a reason for his anger the experience of labeling the emotions and
being aware of the progression of change seemed to calm Thomas.

*Attention:* Because Thomas was agitated, his attention was not focused and
he was preoccupied with his emotions. As the session progressed, his focus
seemed to improve and his affect and body calmed.

*Conduct:* In the beginning of the session, Thomas was very upset and unable
to verbalize his feelings. He was not able to interact with the other group
member or the therapist. He chose to silently follow the stretches and he did
participate in the activity chose by the therapist and other group member. By
the end of the session, Thomas was much calmer and able to verbalize and
express his emotions and needs. The transition back to his classroom was
smooth.
Session #4—Week of Interim Test

Content/themes/tasks of the group: The therapist introduced yoga cards, of varying degrees of difficulty, with the group as a structure for the warm-up. The therapist reminded the group of the high level of affect presented in the previous week’s group and offered the opportunity to discuss it. Thomas’ torso retreated a bit and both he and Charles did not make eye contact with the therapist. Since neither student wanted to discuss the previous week, the therapist summarized what occurred. The group members both decided on a game of tag and the donut as the activities for the day. The task of this group was to work together, exert energy and be able to recuperate on a body level to return to class. The group ended with rest on mats.

Movement Therapy Progress Form Data: Thomas used a lot of passive weight in the warm up and displayed moderately bright affect. He did not want to discuss the affect displayed in the previous session. His typical movement includes even phrasing with indirectness. He chose yoga cards that included resting on the floor, standing tall and breathing. His energy level was normal. However, during the game of tag, he was able to use quickness and strength. He also used strength and directness in the donut by ramming his shoulder into the side to get it to roll. With therapist input, Thomas worked with the other group member to push the donut together. Thomas was able to rest his body on the mat during closure.
Clinical Impression:

Activity Level: Thomas was calm and pleasant in the fourth session. He was appropriately active for each of the activities performed. He followed directions and kept his body in control.

Attention: Thomas had focused attention in this session. He listened and made appropriate eye contact toward the therapist and the other group member throughout the session.

Conduct: Thomas worked well with the other member. He was engaged with the activities and was able to come to and from session without a problem.

Session #5—

Content/themes/tasks of the group: The therapist introduced yoga cards for the warm-up and included some cards that showed yoga positions that required two participants. The members could choose whatever cards they liked. The therapist structured a feeling identification activity in which the members had to view a feeling chart and identify the feeling state shown. The donut was used after this in which the members chose to roll inside together and then individually. The session ended with rest.

Movement Therapy Progress Form Data: Thomas displayed flat affect during the transition to the session. Thomas was using sustainment, directness, and strength in the yoga poses. During the feeling activity, he used appropriate eye contact and did not intrude on the other member’s kinesphere although they were in close proximity to each other. Thomas used passive weight and
stillness during rest. In this session, his interaction mainly involved following others.

**Clinical Impression:**

**Activity Level:** Thomas’s energy level seemed a bit low and he looked withdrawn. As the session progressed, he became more engaged and interactive.

**Attention:** He was able to focus and sustain attention in warm up and in the identification of feelings activity. He got some of the feelings correct in this activity, however he often described what the person might be doing such as “looking at a bug” or “hearing loud noises” rather than describing the feeling state.

**Conduct:** Thomas was engaged in the partner yoga with the other group member, which included weight support, touch and balance. He was calm during the feeling identification activity. He did roll in the donut with the other member but then asked to roll alone, indicating he probably needed space.

Session #6— This session was cancelled due to inclement weather

Session #7—

**Content/themes/tasks of the group:** The warm-up consisted of each member and the therapist sharing stretches that we all performed. The therapist chose an activity of acting out feelings on cards. The students randomly chose various feelings and exhibited them in a nonverbal manner (with body language and facial expressions) in order to allow the other group member to
guess the feeling. The therapist brought up the issue of closure and termination of this eight-week group. Rest was used to facilitate the closure of the group.

*Movement Therapy Progress Form Data:* Thomas used *sustainment,* *directness,* and *strength with stretches.* He has difficulty with *lightness* but can use it with support. With the feeling cards, he immediately jumped into the role of enacting feelings such as “frustration”, “out of control”, “confused” and “bored”. During frustration, he used *directness, bound flow, and strength.* When he was “out of control”, he used the *Slash Effort Action* which is a combination of *indirectness, strength* and *quickness.* While “confused” he used *lightness and directness* to scratch his head. Boredom was exhibited by his *passive weight* and wandering attention and *indirect eye contact.*

*Clinical Impression:*

*Activity Level:* He was able to exhibit the feelings clearly, although bored was difficult for the other member to guess. Thomas’ ability to guess the other group member’s feelings was not able to be assessed as the other group member often gave up on displaying his assigned feeling. During the discussion of closure, his body slowed a bit and his torso retreated. He seemed to not want sessions to conclude.

*Attention:* Thomas was actively engaged and invested in this activity. He became slightly distracted when the other member was trying to think of a way to display his assigned feeling. On a whole, his mood seemed to brighten
during this activity as evidenced by his smile. During the discussion of
closure, Thomas expressed that he wanted to continue with the group.

Conduct: Thomas was interacting appropriately with his group member. He
was able to transition to and from session without incident.

Session #8—Week of Posttest

Content/themes/task of the group: The final session consisted of stretches as
the warm-up. Then Thomas and the other group member decided to play a
modified football game, which they called “Fly”. This game allows for one
player to throw the football to the rest of the players in a cluster. The players
trying to catch the ball must do so three times in order to switch positions with
the thrower. The thrower then comes to the catching side. The closure
consisted of the two members doing a craft activity in which they could take
the product as a tangible reminder of the work they had done in
dance/movement therapy. The therapist asked them to think of a positive skill
that they learned in dance/movement therapy and could “take with them”.
This served as a symbol, or transitional object, of their experience in therapy
that they could take into other settings in their lives. The session ended with
rest on mats.

Movement Therapy Progress Form Data: Thomas was not interested in
stretches today and wanted to do movement such as sit-ups and push-ups.
There seemed to be an element of resistance in his movement and behavioral
choices; possibly because he knew that this was the last session. He used
quickness and indirectness to block players during the game of “Fly”. He
could also use strength and directness to throw the ball to the person he wanted to catch it. He was able to use bound flow and directness while completing the craft task. He chose not to rest on the floor; rather he kept his body vertical by sitting in a chair quietly and calmly during the rest period. This also seemed to be connected to his reluctance to end the group.

Clinical Impression:

Activity: Thomas was not engaged in the warm-up and wanted to do activities that were more exerting, using strength and bound flow. He was active and engaged in the football game. During the craft activity, he was calm and attentive. At rest, he seemed reluctant to lie down.

Attention: Thomas was attentive throughout the session, although he made clear choices and verbalized his opinions about participating in the warm-up and closure.

Conduct: Thomas was appropriate in his level of engagement and interaction in the session. He was calm during transitions to and from the sessions as well.

2. BCPS Classroom Teacher’s Checklist of Student’s Behavior

The results of teacher observation of Thomas’ behavior are presented in Table 1.
Table 1: Baltimore County Public Schools Classroom Teacher’s Checklist of Student’s Behavior for Case #1- Thomas.

Comparison by Week:

Thomas’ behavior scores for each category are listed in Table 1. The higher the score, the more desired behaviors are noted by the teacher. For each category there was a maximum score of 16, 20 or 24. For Week 1, Thomas’ Activity score remained at 20 for the pretest and posttest. His Attention score increased from a score of 10 to 11. Thomas’ Conduct score decreased from 14 to 13. His Social/Emotional score increased from 15 to 17. He did not display Other Behaviors during Week 1 or Week 4. During Week 1, he remained the same for
Activity and Other Behaviors. His score increased for Social/Emotional and Attention, while his score for Conduct decreased.

The observation at Week 4 revealed that again Thomas’ Activity score did not change from pretest to posttest. His Attention score increased from 12 to 16 according to the teacher. His Conduct score increased from 17 to 20 and his Social/Emotional score increased from 18 to 24, which is the maximum score possible for that category. For Week 4, his score remained the same for Activity and Other Behaviors, while it increased for Attention, Conduct, and Social/Emotional categories.

Week 8 showed that again Thomas received a maximum score of 20 in the Activity category for both the pre and posttest. He maintained the same scores across all categories of Attention, Conduct, and Social/Emotional as well. The only change was an increase in the Other Behaviors score when comparing the pretest to the posttest.

*Longitudinal Comparison:*

In the area of Activity subscale on the checklist, Thomas consistently received the maximum behavior score of 20 for all observations, which indicates that he did not display overactive or disruptive behavior in the classroom at any time over the course of this study.

When comparing the pretest from Week 1 with posttest from Week 8, Thomas’ attention score increased from 10 to 12. The teacher cited Thomas’ main attention issues as evidenced by his “inattention to classroom instruction” and “incomplete classroom work”.
Thomas’ Conduct subscale score increased from 14 in Week 1 and to 15 at Week 8. The main issues cited in the Conduct category were “loses temper easily” and “is passively uncooperative”.

Thomas’ Social/Emotional functioning was the same at Week 1 pretest as Week 8 posttest. In this category, the teacher reports that he was moderately sad/sullen, isolated and unaccepted by the group, and was easily frustrated. In the Other Behaviors category, Thomas received a score of 10 points out of 10 during the Week 1 pretest and the Week 8 posttest. The Other Behaviors he displayed on the Week 8 Pretest were crying, sulking/pouting, and being overly sensitive.

In summary, Thomas’s score remained the same for Activity, Social/Emotional functioning, and Other Behaviors when comparing the score at Week 1 to the score at Week 8. His score for Attention increased by one point as did his score for Conduct.

2. Dance/Movement Therapy Readiness to Learn Data

Results from the Dance/Movement Therapy Readiness to Learn Teacher Rating Form are presented in Table 2.
Table 2: Dance/Movement Therapy Progress Data Teacher Rating Form Readiness to Learn for Case #1-Thomas.

<table>
<thead>
<tr>
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<th>Behavior Score</th>
<th>Emotion</th>
<th>Tension</th>
<th>Attention</th>
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<td>3</td>
<td>4</td>
<td>3</td>
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<tr>
<td>Wk 8-Pos</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Comparison by Week:

The Readiness Score ranged from 1 to 5 in terms of measuring the three parameters, and like the Behavior scale, the higher the score the more of the desired behavior was observed. Week 1 pretest and posttest scores remained consistent with the exception of the Emotion category. The Emotion score increased from 3 to 4. During Week 4 Thomas’s score for Emotion and Attention increased, while the Tension score decreased from 4 to 3. Week 8 indicated an increased score in the Tension category as well as the Attention category, while Emotion remained at a score of 3.
At Week 1, Thomas’ emotion score started at a 3, which is a score that indicates the student calms with assistance. The posttest indicated a score of 4, which shows he was moving in the direction of being stable and calm.

Week 4’s tests showed that Thomas’s score for Emotion increased from 2 to 3, which showed he was able to calm with assistance at the posttest. His Attention also increased from 3 to 4, which indicates he was initially distractible but responded to redirection and moved toward being more focused and attentive at the posttest. The decrease in Thomas’ Tension score indicates that he was tenser after the session than before.

Week 8 shows that Thomas’ Emotion score of 3 remained the same before and after the intervention. This indicates he was able to be “calm with assistance”. His Tension score increased from 3 to 4 showing he was perceived as less tense after the movement session. His Attention score increased from 2 to 3 indicating he was “distractible but responded to redirection” after the movement session.

*Longitudinal Comparison:* When Thomas’ pretest score at Week 1 is compared with his posttest score at Week 8, both Emotion and Attention remain the same, while his Tension score increased by one point.

3. **Case Summary**

As evidenced by the researcher’s field notes and the two teacher completed forms, Thomas was an eleven-year-old fifth grader who displays little to no signs of motor hyperactivity. His level of activity was consistently appropriate during the course of this study. His main symptom and need that
was related to his diagnosis of ADHD was distractibility and sustaining attention to complete assigned tasks. In the social/emotional realm, Thomas needed improvement in the areas of release of tension, emotion regulation and social skills to positively interact with peers and cope with the social norms of the school setting. After the Dance/Movement Therapy sessions, Thomas’ scores for Attention and Conduct increased on the BCPS checklist, as did his score for Tension on the Readiness to Learn Form.

Case # 2- Charles (pseudonym)

1. Field Notes with Movement Therapy Progress Form Data

   The following are the field notes taken by the researcher/therapist after each session. This described each of the seven out of the eight planned sessions in narrative form.

   Session #1— Week of Pretest

   Content/themes/tasks of the group: During this first group, the therapist introduced herself to the group members, explained the group and this study, asked the children to sign consent, discussed the time frame for these groups and set the group and session structure. After talking, the therapist led the group in a series of warm-up stretches and then asked each member to share a stretch for all group members to participate in. This would become the routine for the warm-up in all of the following sessions. The therapist asked to two group members to decide on an activity together and they chose a log swing that hangs from a beam in the ceiling. Then, they chose dodge ball as a second activity. Both of these group tasks were focused on working together, taking
turns and impulse control. The end of session consisted of resting on mats with the lights dimmed and classical music in the background. This would become the routine closure procedure for ending sessions.

Movement Therapy Progress Form Data: Charles was using good eye contact during the stretches and warm-up portion of the session. After a few moments of doing the warm-up, he repeatedly tried to perform handstands. In his attempts, he was able to push himself up to a handstand but could not use bound flow, strength, and control to hold it and would fall immediately out of the position. He was using bound flow and control while on the log swing. During dodge ball, he was using directness but his there was not much strength. He could prepare for the action of throwing but could not follow through with the action. Follow through to perform activities relates to modulation of the Flow Effort. At rest, he was unable to keep his body completely still and needed to be redirected numerous times.

Clinical Impressions:

Activity Level: Charles had an average level of activity throughout the session, with the most difficulty at rest time.

Attention: Charles could sustain brief periods of attention but often became distracted by objects in the room such a combination lock or rope hanging from the ceiling for movement equipment. This occurred most when he had to wait his turn or listen to directions from the therapist.

Conduct: Charles did not follow directions at times throughout the session. For example, he was asked not to perform handstands due to safety concerns. He
continued to do the action. Also, he was unable to follow the directive to leave objects in the room alone.

Session #2—

Content/themes/tasks of the group: The task for the second group was to share stretches in the warm-up and have the group member decide on an activity together. Both members decided on foam “swords”/bats in which they used to perform a duel. The goal and rules of this activity structured by the therapist was to stay safe and only use a bat to hit another bat, not the other student’s body. After this activity, the members chose a large foam “donut” in which they decided to roll in together. The session ended with playing catch with Velcro mitts.

Movement Therapy Progress Form Data: Charles had trouble with replicating other people’s stretches in the second session. This improved when the therapist used verbal and visual cues to explain the stretches. During the sword fighting activity, Charles retreated with sustainment mostly. When he did advance and gesture toward the other student with the sword, he could only slow it down briefly; he preferred quickness. He frequently stepped outside of the dual circle, which indicates a lack of spatial awareness when he is engaged in an activity. However, he was spatially aware when his focus was direct. For instance, when he was asked to hit only the foam sword, he could do so. Charles was strong and bound while rolling in the donut, so that as the therapist tried to push him, it was very difficult. During catch, he was throwing the ball very high and with strength. The therapist asked and modeled for him to keep the ball lower and throw with lightness, which he was able to do.
Clinical Impression:

Activity Level: Charles’ overall energy level was appropriate, however his actions are somewhat impulsive. He interacts appropriately with the other group member and is able to take turns.

Attention: Charles is easily distracted by objects in the room. He also loses focus if we are doing an activity he does not want to do. He can sustain attention for brief periods of time (about 5 minutes) before he needs redirection.

Conduct: Charles was able to work together with the other student. He was respectful of the other student’s space in the donut and kept his body in control and in his own kinesphere.

Session #3—

Content/themes/tasks of the group: The group began with acknowledgement of Thomas’ affect, which included crying, bound flow and inability to verbalize anything beyond grunting. Charles also came to group after a confrontation with another student in his classroom. He stated he was “mad” but did not know why. Then we continued with the warm-up stretching routine. Both Thomas and Charles hid in the donut during some point in the session.

Charles contributed his own stretch and acknowledged Thomas’ dismay. The therapist suggested the log swing and Thomas said “I don’t care if we do the log swing”, he could not verbalize if he wanted to do the activity or not. Since Charles wanted to do the log swing and the therapist thought it would calm both members, we proceeded with the swing. The goal of this task was to physically calm the body with the swaying/indulging rhythms and release some of the bound flow to reach a point of
being able to converse about the emotions presented, which the group was able to do. The session ended with rest on mats and deep breathing while listening to nature sounds music. The therapist reminded the members of their own coping skills and ability to calm themselves when they are upset.

*Movement Therapy Progress Form data:* Charles displayed pleasant affect during the third session. Charles exhibited *impulsive phrasing* and a lot of *strength* throughout the session. On the swing, his body and movement were agitated, taking a while to get himself into position. He wanted the therapist to push him “high on the swing”. He had difficulty with maintaining *spatial boundaries*, as evidenced by his getting too close to the log swing and risking injury to himself. *When going back to class,* Charles pretended to kick or punch a wall, but would stop himself right before hitting the wall. This indicates some control and ability to modulate the *Flow Effort*, which is connected to feelings.

*Clinical Impressions:*

*Activity:* Charles was impulsive in the third session and needs clear limits and expectations to be able to follow directions. When he becomes frustrated, he gets agitated on a body level, (i.e., pretending to kick or punch the wall) often using *impactive phrasing.*

*Attention:* Charles would lose focus easily when he was frustrated or angry. He often had difficulty establishing attention as well as maintaining it.

*Conduct:* Charles tended to act out more when he became angry, as indicated by his pretend kicking and punching of walls. However, he interacted appropriately with the
other group member and displayed empathy when he asked him a few times “What’s wrong “Thomas”? “Are you tired?”

Session #4— Week of Interim Test

Content/themes/tasks of the group: The therapist introduced yoga cards, of varying degrees of difficulty, with the group as a structure for the warm-up. The group members both decided on a game of tag and the donut as the activities for the day. The task of this group was to work together, exert energy and be able to recuperate on a body level to return to class. The therapist often used modeling and positive reinforcement of desired behaviors. The group ended with rest on mats.

Movement Therapy Progress Form Data: Charles came to session with a frown on his face and bound flow in his torso and extremities. He used impactive phrasing again on the way to session, pretending to kick the walls. He was unable to replicate stretches provided by the therapist or on the yoga cards, although he was actively trying. He wanted to do handstands and the therapist said, “We need a mat so that we can stay safe”. Charles performed the handstand despite directions not to. Then when the therapist offered a mat for him to do it safely, he gave up and wanted to change activities. Charles had poor spatial awareness today, often running into objects during the tag game. During rest, he was fidgety and agitated. His affect was brighter as he returned to class.

Clinical Impression:

Activity Level: Charles was slightly hyperactive and showed signs of impulsivity and defiance. He chose yoga cards that were difficult to perform then gave up when he
could not complete them effectively. The therapist encouraged him to keep trying and pointed out his movement skills, such as using strength.

Attention: Charles attention was not focused today. He had difficulty following directions and would often defy instructions to do activities he wanted to do.

Conduct: Charles was not in control of his body and space today. He often disobeyed directions given by the therapist. However, he did interact well with the other student, using appropriate eye contact and personal space boundaries while playing tag. The other student did not acknowledge Charles’ negative behaviors, which seemed to deescalate Charles’ impulsivity at times.

Session #5—

Content/themes/tasks of the group: The therapist introduced yoga cards for the warm-up and included some cards that showed yoga positions that required two participants. The members could choose whatever cards they liked. The therapist structured a feeling identification activity in which the members had to view a feeling chart and identify the feeling state shown. The donut was used after this in which the members chose to roll inside together and then individually. The session ended with rest.

Movement Therapy Progress Form Data: During transition to and from session, Charles walked with passive weight and “lagged behind” the therapist and other group member. Charles often gave up performing movement stretches and said they were “too hard”, and had trouble coming up with his own stretches. Charles’ eye contact was minimal and he needed redirection to stay focused on the activity. During the feeling identification activity, he continually gestured toward the post-its
covering the answer to the picture clues. The therapist sat next to Charles as a cue not to touch the post-its. This helped moderately and Charles was able to keep his body calm while lying on the floor in the horizontal plane. He rolled in the donut by himself and was able to use free flow and be more floppy. At rest, he was fidgeting with his shoes with lightness and quickness.

Clinical Impressions:

Activity Level: Charles was hyperactive and impulsive in regards to his nonverbal behaviors and movement.

Attention: Even though Charles was distracted by the post-its, he was able to sustain attention long enough to complete the feeling identification activity.

Conduct: Charles had difficulty following directions frequently during the session. For example, he was preoccupied with jumping on top of the donut, rather than rolling in the donut. He physically attempted to jump on top even after being told not to for safety reasons. The therapist had to place her body in front of the donut to stop the behavior.

Session #6—This session was cancelled due to inclement weather.

Session #7—

Content/themes/tasks of the group: The warm-up consisted of each member and the therapist sharing stretches that we all performed. The therapist chose an activity of acting out feelings on cards. The student chose various feelings and exhibited them in a nonverbal manner (with body language and facial expressions) in order to allow the other group member to guess the feeling. The therapist brought up the issue of
closure and termination of this eight-week group. Rest was used to facilitate the closure of the group.

Movement Therapy Progress Form Data: Charles was agitated coming to the session and he was distractible. He ran ahead in the hallway, using quickness and directness. During stretches, Charles offered stretches in the horizontal plane and began to shape letters of the alphabet with his body. He was using strength and sustainment to carefully lift his body off of the floor.

Charles often had difficulty acting out the feeling states listed on the cards. He did well with “happy” and “sad”, but other feelings such as “worried”, “surprised”, or “excited”, he did not perform. He would lie on the floor and therapy ball while he was “giving up”. He then reverted to his impactive phrasing where he pretended to kick the wall at the end of the session.

Clinical Impression:

Activity Level: Charles was active in the warm-up section of the session and dropped into passivity during the acting out of feelings. The therapist questions whether it was the topic of feelings or the nature of the activity (reading a card, understanding, embodying, and labeling an emotion, thinking of how other’s will perceive the emotion, etc).

Attention: Charles was engaged in the warm-up when he offered “letter” stretches. His attention diminished when he was asked to do the feeling performance activity. He often needed reminders from the therapist to continue to find new ways to enact his feeling or guess the other member’s feeling. During talk about closure of the group the following week, Charles seemed distracted and avoided the topic.
Conduct: Charles seemed to be aware of his choices to disengage and avoided following directions. When he fell to the floor or laid on the therapy ball, he seemed to need support of some kind. The therapist focused on Charles strengths, such as when he offered the idea of “letter” stretches.

Session #8—Week of Posttest

Content/themes/tasks of the group:

The final session consisted of stretches as the warm-up. Then Charles and the other group member decided to play a modified football game, which they called “Fly”. This game allowed for one player to throw the football to the rest of the players in a cluster. The players trying to catch the ball must do so three times in order to switch with the thrower. The thrower then comes to the catching side. The closure consisted of the two members doing a craft activity in which they could take the product as a tangible reminder of the work they had done in dance/movement therapy. The therapist asked the group members to think of a positive skill they learned and dance/movement therapy that they could “take with them”. The session ended with rest on mats.

Movement Therapy Progress Form Data: Charles ran ahead of the therapist and other group member on the way to session. Charles was able to follow stretches presented by the therapist in the warm-up. During the football game, Charles used physical contact and strength to push his opponent out of the way to catch the ball. When he was the thrower, he began to pretend to throw the ball with strength and directness, but would use bound flow to stop it before letting the ball go. By the end of the game, he began throwing the ball with a lot of strength and directness, with impactive
phrasing. He described that he was throwing “a bullet”. Charles was interested in the craft activity and he was able to use directness and bound flow to pour sand to complete the task. Although, he did begin to lose his use of sustainment and revert to using more quickness when the sand would not pour smoothly. Charles was not able to calm his body at rest, tapping his feet with quickness and lightness, while making vocalizations, etc.

Clinical Impressions:

Activity: Charles was engaged in all of the activities and followed directions throughout the session, with the exception of the rest period.

Attention: Charles was fully attentive in all activities but seemed distracted and hyperactive at rest time.

Conduct: Charles was appropriately interacting and participating in the sessions. He was able to transition to and from the session without a problem. He did not lose his temper or openly defy directions or instructions.

2. BCPS Classroom Teacher’s Checklist of Student’s Behavior

Table 3 displays pretest, interim test, and posttest results of Charles’ scores on the Classroom Teacher’s Checklist of Student’s Behavior Checklist.
Table 3: Baltimore County Public Schools Classroom Teacher’s Checklist of Student’s Behavior for Case #2-Charles

Comparison by Week:

The BCPS Checklist measured student’s behavior in terms of four categories. The higher the score, the more desired behaviors are noted by the teacher. For each category there was a maximum score of 16, 20 or 24. Week 1’s pretest scores indicate that Charles received a score of 0 for the categories of Activity and Conduct, while the posttest shows that he his score increased up to 6 for Activity and 5 for Conduct. His Attention increased by 1 point and his Social/Emotional score increased from 17 to 22.
The observation at Week 4 indicates that Charles’ Activity score increased from 1 to 2 and his Attention score increased from 3 to 5. His Conduct score increased from 6 to 8, while the score for Social/Emotional remained the same.

The posttest at Week 8 indicates the largest increased score was Conduct, going from 3 to 14. Charles’ Activity score increased from a score of 2 to a score of 3. His Attention score increased from a 3 to a 6 and his Social/Emotional score increased from a 16 to 17. Throughout the observation intervals, Charles received a consistent maximum score of 10 for Other Behaviors.

*Longitudinal Comparison:*

When comparing data from the pretest at Week 1 and the posttest at Week 8, Charles’ score for Activity, Attention, and Conduct increased. The Social/Emotional score also increased, while the score for Other Behaviors remained the same.

Overall, this graph indicates that Charles scores are low in the category of Activity and Attention. In the Activity realm, he “makes disruptive noises”, “is overactive”, “speaks out of turn”, “fidgets”, and “disturbs others nearby”. His issues surrounding Attention are that “he does not attend to classroom instruction”, “has a short attention span”, and “does not follow through on instructions.” In terms of Charles’ Conduct score, the teacher cites his behavior as including “loses temper easily”, “provokes quarrels/fights”, and “openly defies authority.” Generally, he scores highest on the Social/Emotional and Other Behaviors subscale. His is rarely “sad or sullen”, “fearful or avoidant”, or “isolated/unaccepted by the group”.


Table 4: Dance/Movement Therapy Progress Data Readiness To Learn Teacher Rating Form for Case #2-Charles

<table>
<thead>
<tr>
<th>Observation</th>
<th>Behavior Score</th>
<th>Emotion</th>
<th>Tension</th>
<th>Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wk 1-Pre</td>
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<tr>
<td>Wk 1-Pos</td>
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<tr>
<td>Wk 4-Pre</td>
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<tr>
<td>Wk 4-Pos</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wk 8-Pre</td>
<td></td>
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<td></td>
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<tr>
<td>Wk 8-Pos</td>
<td></td>
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</tbody>
</table>

The Readiness Score ranged from 1 to 5 in terms of measuring the three parameters, and like the Behavior scale, the higher the score the more of the desired behavior was observed. Week 1 scores show that Charles received a consistent score of 3 for the Tension pre and posttest as well as the Attention pre and posttest. His Emotion score increased from a 1 to a 2 indicated that he was less persistently agitated.

Week 4 scores indicate that Charles’s score in the Emotion category increased from 2 to 3 indicating he could “calm with assistance”. The Tension score
remained at 4 indicating he may have not had “tension in his extremities” but he was not “relaxed”. Charles’ Attention score increased from 3 to 4 during Week 4 indicating that he was “still distractible” but moving toward being “focused and attentive”.

The pretest at Week 8 shows that Charles received a score of 1 for all three categories. His Emotion and Tension scores increase to a score of 2 and his Attention score increased to a score of 3.

From Week 1 to Week 8, Charles’ score for Emotion increased, his Tension score decreased and his Attention score remained the same.

4. Case Summary

Charles is a nine-year-old in third grade that displays motor hyperactivity and impulsivity frequently as indicated by these teacher’s checklists and the researcher’s field notes. He also shows need in the realm of acquiring and sustaining attention needed for academic success. Charles’ strengths lie in the arena of his Social/Emotional functioning and social skills. Following eight weeks of Dance/Movement Therapy, Charles’ scores for Activity, Attention, and Conduct increased.

Synthesis of Results for Case #1 and Case #2

Thomas’ scores all increased or remained the same from same day pre and posttests, with the exception his score for Conduct during Week 1. So, short term score increases were noted for Thomas. Charles’ scores also increased or remained the same when same day pre and posttests were conducted.
When Week 1 results are compared with Week 8, both students’ scores on the BCPS Checklist either increased or remained the same in various categories. This would indicate that there was a relationship between the dance/movement therapy intervention and the maintenance or reduction of symptoms for this study period. On the Readiness to Learn Scale, Charles scores increased, decreased, and remained the same. Thomas’s score increased or remained the same.

The Readiness to Learn results for Case #1 and Case #2 show that both students had an increased Emotion score for Week 1 and Week 4. For Week 8, both students had an increase in their Tension and Attention scores. Therefore, dance/movement therapy may be related to increased scores for Emotion, Tension, and Attention on those Weeks observed for the study.
Control Group:

Case # 3-Ryan (a pseudonym)

1. BCPS Classroom Teacher’s Checklist of Student’s Behavior

Table 5: Baltimore County Teacher’s Checklist of Student Behavior for Case # 3-Ryan

Comparison by Week:

The BCPS Checklist measured student’s behavior in terms of four categories. The higher the score, the more desired behaviors are noted by the teacher. For each category there was a maximum score of 16, 20 or 24. Week 1 shows that Ryan’s activity score decrease from 16 to 15 and his Attention score decreased...
from 13 to 10. Ryan’s Conduct score increased from 16 to 20 and his Social/Emotional score increased from 18 to 24, which is the maximum score for that category. Throughout Weeks 1, 4, and 8, Ryan consistently receives a score of 7 out of 10 on the Other Behaviors subscale.

Week 4 indicates that Ryan’s Activity score decreased from 13 to 10. His score for Attention decreased from 10 to 3. His score in the Conduct category decreased from 14 to 10. His Social/Emotional score decreased from 18 to 15.

Ryan’s score for Activity during Week 8 showed an increase from 11 to 15. His Attention score increased from 11 to 12. In terms of the Conduct subscale, his score remained at 9 and he received a score of 16 for both the pre and posttest in the Social/Emotional category.

Ryan’s lowest score received was in the category of Attention. The teacher cites the parameters indicating this as “does not attend to classroom instruction”, “does not complete classroom work”, “has short attention span”, and “does not follow through on instructions”. He also struggles in the area of Conduct where he was noted as “openly defying authority”. The teacher consistently noted that Ryan’s Other Behaviors included that he was tense, poorly organized, and displayed signs of poor fine motor coordination. In a section for additional teacher comments, the teacher commented that Ryan constantly sucks his thumb and shakes and trembles often.
Longitudinal Comparison:

A comparison of the pretest at Week 1 with the posttest at Week 8 indicates that Ryan’s score remained the same for Attention and Other Behaviors. The scores for Activity, Conduct, and Social/Emotional categories decreased.

2. Dance/Movement Therapy Readiness to Learn Data

Table 6: Dance/Movement Therapy Teacher Progress Rating Form Readiness to Learn for Case #3- Ryan

The Readiness Score ranged from 1 to 5 in terms of measuring the three parameters, and like the Behavior scale, the higher the score the more of the desired behavior was observed. Week 1 pretest indicated that Ryan was “stable and calm”,

Comment [DKR24]:


“relaxed”, and “focused and attentive”, according to his teacher. The posttest, which occurred after 1:30 pm shows that Ryan’s behavior scores decreased in terms of Emotion, Tension, and Attention decreased to a 3.

The same trend occurred in Ryan’s scores during Week 4. Ryan’s Emotion score at the Week 4 observation decreased from a 5 to 2. His Tension score decreased from a 3 to a 1 and his attention decreased from 4 to 1.

Ryan’s score for Emotion increased from 2 to 4 and his score on the Tension subscale increased from 3 to 4. The teacher recorded his attention span to be a score of 3 indicating he was “distractible but responded to direction”.

The pretest at Week 1 indicated that Ryan received a score of 5 for all three categories. The posttest at Week 8 shows that Emotion, Tension, and Attention scores decreased.

3. Case Summary

Ryan is a six year old first grade student who whose main deficits lie in his Attention span and Conduct in the classroom. Ryan also displays quite a bit of tension in his body. His strengths include his social/emotional skills and his activity level. Although, these could use improvement, Ryan seems able to interact with peers appropriately and uses impulse control to regulate his level of activity.
Case #4- Trent

1. BCPS Classroom Teacher’s Checklist of Student Behavior

Table 7: Baltimore County Public Schools Classroom Teacher’s Checklist of Student Behavior for Case #4-Trent

Comparison by Week:

The BCPS Checklist measured student’s behavior in terms of four categories. The higher the score, the more desired behaviors are noted by the teacher. For each category there was a maximum score of 16, 20 or 24. The pretest and posttest for Week 1 indicate that Trent received a score of 0 for the Activity subsection and a score of 1 for the Attention category. His Social/Emotional
functioning score was rated as 15 and he received 10 out of 10 points for the Other Behaviors score.

The pretest for Week 4 indicated that Trent received 0 points for all subsections, (Activity, Attention, Conduct, Social/Emotional) with the exception of Other Behaviors, where he received 10 points. Each of these score increased on the posttest with Activity, 6; Attention, 3; Conduct, 12; and Social Emotional at a score of 15.

The results from Week 8 pre and posttest show there was no change. Trent’s score for Activity stayed at 5, Attention remained at 7, Conduct was at 11 and the Social/Emotional score was 19.

Overall, Trent struggles in all categories of this checklist. He tends to function best in the realm of Social/Emotional functioning and was not “sad or sullen”, “fearful or avoidant”, or “is not self-isolated by the group”. His needs remain in the categories of Activity, Attention, and Conduct. He “is overactive”, “has a short attention span”, and “openly defies authority” consistently.

Longitudinal Comparison:

Activity, Attention, Conduct, and Social/Emotional score all increased when Week 1 pretest and Week 8 posttest are compared. The Other Behaviors score remained the same.
The Readiness Score ranged from 1 to 5 in terms of measuring the three parameters, and like the Behavior scale, the higher the score the more of the desired behavior was observed. Week 1 showed that Trent received the same scores on the pre and posttest of 1, 2, and 1 for Emotion, Tension, and Attention respectively. The Week 4 pretest also indicated a similar trend in behavior where Trent was “rigid” and “unfocused”. Week 4’s posttest showed that after 1:30 pm, Trent’s score increased in all three categories; Emotion, Tension, and Attention.
The results of Week 8 observation show that Trent’s Emotion score decreased from 2 to 1, while his score for Tension increased from 2 to 3. His Attention score increased from 1 to 2.

Trent received the highest ratings in the category of Tension, although they were still relatively low. Trent never received a score above 3. He was somewhat relaxed in his body, however, he had trouble regulating emotion and sustaining attention.

The pretest at Week 1 compared with the posttest at Week 8 indicates that Trent scores for Emotion remained the same, while his scores for Tension and Attention increased.

2. Case Summary

Trent is a nine-year-old third grade student. He is relatively relaxed in his body, but his deficits lie in social/emotional relationships with peers and authority. He also struggles with the ability to maintain attention to succeed in the classroom environment.
**Case #5- Nathan**

1. **BCPS Classroom Teacher’s Checklist of Student Behavior**

Table 9: Baltimore County Public Schools Classroom Teacher’s Checklist of Student Behavior for Case #5- Nathan

The BCPS Checklist measured student’s behavior in terms of four categories. The higher the score, the more desired behaviors are noted by the teacher. For each category there was a maximum score of 16, 20 or 24. The pretest and posttest data was not completed due to the student’s absence from school on the scheduled day for the pretest.

**Comparison by Week:**

The BCPS Checklist measured student’s behavior in terms of four categories.
Week 4 results indicate that Nathan’s Activity score increased from 3 to 11. His Attention score increased from 15 to 16. The score for Conduct increased from 11 to 14. His Social/Emotional functioning was scored as 17 for both the pre and posttest. His score for displaying Other Behaviors increased from 5 to 9. Nathan’s score for Activity increased from 4 to 5 and his Attention score increased from 15 to 16. In terms of Conduct, his score increased from 12 to 16. The teacher rated his Social/Emotional functioning at 16 on the pretest and 20 on the posttest. The score for the Other Behaviors category increased from 6 to 10.

Nathan’s teacher noted that Nathan often “speaks out of turn”, “fidgets”, “disturbs others nearby” in the Activity category. Nathan’s main issues with Conduct include “loses temper easily”, “openly defies authority”. His strengths include his ability to focus, “attend to classroom instruction”, and “complete classroom work”. He is also noted as not having deficits in the areas of sadness, fear, or isolation, which are all components of Social/Emotional functioning.

*Longitudinal Comparison:*

Since Week 1 data was not available, the researcher compared data from the pretest at Week 4 to the posttest data at Week 8. Nathan’s score for Activity, Attention, Social/Emotional, and Other Behaviors all increased, while the score for Conduct decreased.
2. Dance/Movement Therapy Readiness to Learn Data

Table 10: Dance/Movement Therapy Teacher Progress Rating Form Readiness to Learn for Case #5-Nathan

Dance/Movement Therapy Progress Data
Readiness to Learn
Case #5 Nathan

<table>
<thead>
<tr>
<th>Observation</th>
<th>Wk 1-Pre</th>
<th>Wk 1-Pos</th>
<th>Wk 4-Pre</th>
<th>Wk 4-Pos</th>
<th>Wk 8-Pre</th>
<th>Wk 8-Pos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotion</td>
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<tr>
<td>Tension</td>
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<tr>
<td>Attention</td>
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</tbody>
</table>

The Readiness Score ranged from 1 to 5 in terms of measuring the three parameters, and like the Behavior scale, the higher the score the more of the desired behavior was observed. Due to absence of the student, data for Week 1 was not recorded. Week 4 results indicate that Nathan’s score for Emotion increased from 1 to 3 and his Tension score increased from 1 to 4. Nathan’s Attention score increased from 2 to 4.
Week 8 results indicated that Nathan scored a 1 for the Emotion pretest and a 4 for the Emotion posttest. His Tension score increased from 1 to 5. Nathan’s score for Attention also increased, from 4 to 5.

Both pretests show that before 1pm, Nathan is “persistently agitated” and “rigid” in terms of Tension in his body. After 1:30pm, Nathan generally improves in all three categories. His scores indicate a moderate to high level of Attention skills, while his needs are in the Emotion and Tension realm. Some of the Other Behaviors noted for Nathan were crying, sulking and pouting, tense, destructive to property and being overly sensitive.

Scores for all three categories increased from the pretest at Week 4 when compared with the posttest at Week 8.

3. Case Summary

Nathan was an eleven-year-old fifth grade student. According to the data provided by his teacher, Nathan had strong Attention skills required for learning and completing classroom tasks. His needs include emotion regulation, as the teacher noted he “is easily frustrated” and can be “sad or sullen”.

Synthesis of Results for Case #3, Case #4, and Case #5

When assessing Week 1 and Week 8 observations of the Control Group, BCPS Checklist scores of all three cases increased, decreased, or remained the same. Ryan’s scores remained the same or decreased, there were no increases. Trent’s scores increased or remained the same. Nathan’s scores (assessed at Week 4 and Week 8) increased or decreased.
The results from the Readiness to Learn Scale, when comparing Week 1 to Week 8, indicate that all three categories of Ryan’s score decreased. All three of Nathan’s scores increased. Trent’s scores either increased or remained the same.

*Synthesis of Results for Treatment Group and Control Group*

The difference between results for the treatment group and control group is that the treatment group’s scores on the BCPS Checklist either remained the same or increased. The scores for the control group remained the same, increased, or decreased. One would expect that the control group and treatment group are similar and would have similar behavioral outcomes. However, the dance/movement therapy intervention was associated with increased scores or same scores. This means that the symptoms either did not change or they were reduced. The treatment group scores were not associated with decreased scores or an increase in symptoms.

The control group scores increased, decreased, or remained the same. There were reductions of symptoms, increases in symptoms, and no change during the course of this eight week observation.

The Readiness to Learn scale scores did not show any pattern differences between the treatment group and control group; both groups experienced increased, decreased, and scores that did not change.
CHAPTER 5: DISCUSSION

The purpose of this study was to determine the effectiveness of dance/movement therapy (DMT) in reducing symptoms of Attention Deficit Hyperactivity Disorder in children who were not receiving medication for the treatment of that disorder. The researcher used a process of data triangulation to assess patterns and trends in a group receiving DMT as well as in a control group. Based on the results and patterns identified in this study, the researcher hopes to develop a treatment model that would best address the needs of children with ADHD.

This chapter discusses the following: (1) overview of results; (2) researcher insight from the study; (3) clinical applications; (4) limitations, and (5) implications for future research.

Due to nature of this case study’s small and unequal sample size, any inference drawn from the two groups can not be generalized to all children with ADHD in the public school setting; however, the detailed description of their non-verbal behaviors and interactions in the treatment group provide some insight into the behavioral manifestations of their symptoms and how they can be addressed using dance/movement therapy.

This study also displays the vast difference in behavioral symptoms in five children diagnosed with the same disorder and gives perspective as to how dance/movement therapy could address those individualized behavioral symptoms. The behavioral differences may be connected to environmental differences and varying life issues that impact each child.
Overview of Results

The results of this eight week study suggested that dance/movement therapy was associated with a reduction or maintenance of symptoms in children diagnosed with nonmedicated ADHD, as measured by the Baltimore County Public Schools Classroom Teacher’s Checklist of Student’s Behavior. The comparison/control group received increased, decreased or same scores over the course of the study. This suggests that the dance/movement therapy intervention was related to behavioral symptom improvement and homeostasis in children diagnosed with ADHD.

Gronlund, Renck & Weibull’s (2005) pilot study concerning short term dance/movement therapy for two young boys aged 5-7 with symptoms related to ADHD was interested in improving motor function as well as reducing behavioral and emotional symptoms. Results from this study suggest that short-term dance/movement therapy treatment in a paired group setting may produce positive results.

Rachmany (2006) discusses clinical goals in the treatment of children with ADHD. The goals include improving regulation of urges and impulses (activity), improving the ability to focus and concentrate (attention), and developing the ability to interact with others (conduct and social/emotional). Each of these behavioral components relates to parameters of movement that provide “windows” into addressing the symptom.

For instance, Goodman’s (1991) study qualitatively analyzed the movement behavior of hyperactive children. This study found that hyperactivity was evidenced by quickness, a greater incidence of strength and intensity as well as unexpected
transitions. Another study by Pitcher (2002) indicated that speed of movement and variability might be associated with ADHD symptomatology.

In the present study, both case #1 and case #2 Activity scores remained the same or increased, indicating that the student’s hyperactive behavior in the classroom either did not change or decreased. Both students displayed the ability to use quickness and strength, however, it was not overused. This indicated that hyperactivity was might not be their main deficit associated with ADHD.

The largest discrepancy in movement that connected with the differences in Activity scores between case #1 and case #2 is related to lack of sustainment (indulging in time) in the Time Effort (North, 1978). In order for one to reflect before acting, one must be able to use sustainment in movement. If quickness is overused (with strength and/or lightness), and sustainment is not used in movement, there is no recuperation and the person is continually moving at a fast pace.

Both Thomas and Charles needed more exploration of sustainment, perhaps in moving their bodies in slow motion in the sword fighting activity. Rather than overusing quickness, they were not using the full range of the Time Effort, which includes sustainment. The Time Effort is related to decision-making, therefore their lack of use of sustainment means that Thomas and Charles may have difficulty making decisions or thinking before acting in the classroom or other settings in their lives.

The activity score stayed the same for case #1, Thomas, over the 8 weeks, since his pattern of movement indicated quickness was used appropriately in session. Case #2 began the study with a score of 0 in the realm of Activity and increased to a 3
by the end. Although, there was improvement in this category, his relatively low score in this category was connected to his pattern of slightly overusing quickness and little to no use of sustainment. DuPaul (2006) claims that behavioral interventions are effective in reducing disruptive, off-task behaviors in children. The therapist incorporated movement interventions combined with behavioral techniques to decrease activity, and increase attention. For example, some warm-up exercises included performing stretches based on picture cues on yoga cards, which required sustainment and single focus.

In terms of Attentiveness, case #1 and case #2 both improved as per their teacher’s report on the BCPS Checklist. Attention is related to spatial awareness, body sensations, and thinking (North, 1978). Harshorn, et al. (2001) discussed the positive relationship between creative movement therapy and increased attentive behaviors with children who have autism.

In the present study, dance/movement therapy activities addressed spatial awareness to encourage attention to one’s surroundings, such as staying inside of a circle on the floor while performing sword-fighting activity. Kline & Silver (2004) note that inattentiveness and distractibility can be internal or external. The most frequent issue with attention is blocking out unimportant stimuli and then becoming overloaded on a sensory level.

Case #1, Thomas, was spatially aware but there were a few times when he was intrusive into another’s space or unaware of his body in space. This indicated his need for increased spatial awareness. Thomas was rarely distracted by visual or
auditory stimuli, rather he seemed to be internally distracted often seeming “lost in his own world”.

Case #2, Charles, struggled with spatial awareness, which was reflected in his score for Attention in Week 1. He displayed more external distractibility evidenced by his hyperfocus on a combination lock in the room, that he repeatedly tried to open. However, by the end of the study, Charles’ score for Attention had increased to 6. At this time, the researcher noticed slight improvement in spatial awareness and focus on the task at hand while Charles was playing the game “Fly”. He also seemed less distracted by objects in the room.

The category Conduct is connected to Impulsivity and the ability to control one's urges. Kline & Silver (2004) describe impulsivity as a child’s inability to reflect before talking or acting and the child does not learn from consequences. Dance/movement therapy is a valuable treatment modality for creating cohesion and connection in groups of children who have previously been chaotic and disorganized (Erfer & Ziv, 2006).

In movement, impulsivity is connected to impulsive phrasing in which movement begins with a strong intensity and then the phrase ends with diminishment. Another movement connected to Conduct and impulsivity was the Flow Effort. According to North (1978), bound flow is related to control, restraint and caution. Dance/movement therapy activities were geared to increase bound flow for this student, to encourage body control and restraint. An example of this was a tense and release exercises for muscle groups.
Case #1, Thomas’ scores for Conduct increased from Week 1 to Week 8. In every one of the dance/movement therapy sessions, Thomas was able to use some *bound flow* and *directness* during stretches, which indicates he rarely struggles with impulsivity. Case #2, Charles, has difficulty using *sustainment* at any point during Week 1 and Week 4 sessions. His movement preference is to move with *quickness*. In the session on Week 8, Charles used *sustainment* during stretches and to slowly pour sand. Week 8’s score for Conduct increased from Week 1, when he had a score of 0.

Although Social/Emotional category was not a variable specifically included in this hypothesis, it is important to consider its results on the BCPS Checklist. Research has consistently documented that children with ADHD are more rejected and less accepted by their peers due to inappropriate social behaviors, social knowledge deficits, and negative interactions with peers and teachers. (Stormont, 2001); as well as low self-esteem, bad reputations among peers, conflicts in friendships, and difficulty in overcoming self-centeredness (Gentschel & McLaughlin 2000). These social/emotional issues play a large role in the child’s academic functioning.

Important movement parameters that impact social/emotional functioning include the previous parameters for Activity, Attention, and Conduct; use of *Flow*, *Space*, and *Time*. If a student is not able to use *bound flow* to control one’s body, peers may feel the student is unpredictable. If the student is unable to maintain *spatial boundaries*, and *awareness*, peers may feel the student is intrusive and not respectful of other’s space. Hervey & Kornblum (2006) found that a DMT intervention for violence prevention increased interpersonal spatial awareness, which
was associated with positive peer interactions. If the student is unable to use sustainment to calm their bodies, peers may feel overwhelmed and overstimulated. In this case, peers may choose to disengage from that student with these symptoms.

Case #1, Thomas’ Social/Emotional functioning remained at the same score when Week 1 is compared with Week 8. However, Week 4’s posttest indicated an increase of 6 points. Thomas’ internal distractibility may lead peers to believe he is not interested in forming relationships.

Case #2, Charles Social/Emotional functioning remained at a level of 17 when comparing Week 1 to Week 2. Charles’ external distractibility and lack of verbal and motor impulse control may contribute his score. Charles did display the ability to connect and communicate as evidenced by his offering of stretches in the horizontal plane in some sessions. He was also able to role play certain concrete feelings such as “happy” or “sad”. He had trouble enacting more complex feelings such as “worried”, “surprised”, and “excited”. Therefore, he has some understanding of emotions and a focus of future dance/movement therapy sessions may be to expand on those skills.

Charles had some difficulty utilizing bound flow, strength, and control in some movement activities. These movement parameters of the Flow and Weight Effort may indicate that Charles does not have a strong sense of self and may have poor ego strength and/or self-esteem. Encouraging the use of these Efforts in dance/movement therapy could facilitate better social/emotional functioning for Charles.
Another aspect of movement that is important to consider are tension flow rhythms (Kestenberg-Amighi, 1999). Thomas often displayed the *anal twisting* rhythm in sessions. Thomas often said he was “always bored”. Kestenberg-Amighi (1999) describes that later in life, *anal twisting* is seen in people who are unable to find pleasure in anything. Charles often displayed the *running/drifting* rhythm in his movements. Kestenberg-Amighi (1999) describes that later in life, such a rhythm causes one to have difficulty to keep focused on one goal or task or on time limits.

The randomly assigned dyad structure of the dance/movement therapy group may have contributed to the improvement in these categories, as well. Hoza (2005) discussed that close, dyadic, reciprocated friendships serve different needs than do peer group relationships. Although this was not a “friendship”, the members had to decide on activities together. Hoza (2005) also notes that in a dyadic relationship, each member must verify the importance of the relationship and take an interest in the other person’s well-being. This was the case in the dance/movement therapy group, as evidenced by Charles’ comments on Thomas’ mood in the session on Week 3.

There were instances in the study where the researcher noted a change in session that was not reflected in the teacher’s score report. This could be because of the differences between the therapy session and the classroom setting; (tasks and demands of the setting, number of students/adults in the environment, the appropriate level of activity/movement, etc.). The context of each setting varies, therefore, the child’s behaviors are going to vary.
The Researcher’s Insight from the Study

The therapist’s countertransference

Throughout this study, the therapist had to interact with teachers of students in both the treatment group and control group. Some teachers were willing to do anything to help the students and made an effort to fill out the checklists without any complaint. However, some teachers were not as willing to fill out the checklists and confronted the therapist with complaints about the inconvenience of the study. As therapist, I felt what it must be like for the students in the study to receive reprimands from these particular teachers. Having experienced these feelings, I identified with the rebellion and frustration that may be stirred in students who interact with these teachers daily.

This identification with the group members may have impacted my ability to practice therapy from an objective standpoint. I may have been more lenient in my discipline with them or I may have taken on the role of the teacher and been too harsh with them. Countertransference is an unconscious process, however, I made every attempt to be aware of any feelings of affiliation with the group members or their teachers.

Clinical Applications

The findings from this study appeared to match many of the findings from other studies covered in the literature (Goodman, 1991; Gronlund, Renck, & Weibull, 2005). This study was unique in that it occurred in a Maryland Public school, where the Dance/Movement Therapist on staff is the only one employed in the state. The results of this study offer a non-verbal understanding and treatment modality for
children who need control of their bodies to function well in the academic setting. The study also begins to introduce the concept that movement games and activities used in dance/movement therapy can be utilized in the classroom to meet IEP goals. The ultimate goal of dance/movement therapy in the school setting is to facilitate therapeutic goals and change that transfers improved functioning in to the classroom.

Dance/movement therapy offers a unique approach to observation, assessment, and intervention with children diagnosed with ADHD. This treatment approach combined with a multi-modal model could improve an individual’s ability to cope with the diagnosis of ADHD and academic, behavioral, social, and emotional implications.

Suggestions for Dance/Movement Therapy with children with ADHD

Children with ADHD experience life differently than normally developing children. Many of these children have a negative association with the school system and may be more likely to not complete assignments, have a higher rate of grade retention, and may, in extreme cases, drop out of school.

Based on the literature review and the results of this study, the researcher understands the complexity of this diagnosis, and how it manifests itself differently in each child. Two children in the treatment group both had ADHD, however, their strengths and limitations varied greatly. The same was the case for the children in the control group.

Although they had the same diagnosis, their behavioral issues were different. This may be due to differences in age, social/emotional functioning, temperament, environmental factors, subjective diagnostic assessments, etc. Carey (2002)
discussed that children with a “difficult” temperament cluster are more likely to develop social behavioral problems. There is also a source of controversy surrounding the amount of emphasis placed upon consideration of environmental factors that may be contributing to the child’s behavioral issues (Carey, 2002). Kline & Silver (2004) claim that highly impressionistic terms and subjective scales also influence the assessment of behavioral issues in children with the same diagnosis.

This is important to consider when working with this population in dance/movement therapy. The dance/movement therapist should assess the child’s strengths and limitations on a body level; considering Efforts, shaping, body attitude, and interaction parameters. Interventions should be tailored to meet the child where they are and then exploring ranges of movement they may need improvement with.

Although this study was limited to an eight week time period, the therapist was able to establish a therapeutic relationship with the children in the treatment group, which facilitated progress. An important part of dance/movement therapy is creating a safe environment, or “sacred space” with the structure of the session and the time and space boundary of the session. This is important when working with children with ADHD because so often, teachers and parents are reprimanding them for their behavioral problems. They need to know there are limits and rules in therapy, but they could benefit from receiving redirection in a positive manner, such as focusing on what they are doing correctly and could do more of. If they learn to trust that the therapist expects them to do their best but will not reprimand them for their mistakes (unless they are being unsafe or disrespectful), they will hopefully keep trying to do their best.
This study found that the students in the treatment group used a lot of fighting efforts (strength, quickness, bound flow, directness). Working on movement parameters to encourage positive social/emotional functioning in these children could prove beneficial. Some of these may include free flow, lightness, indirectness, and sustainment. This could be done with the use of props such as scarves or ribbons. Allowing them to feel these efforts in their body could facilitate better interpersonal interactions between children with ADHD and their peers, parents, and teachers.

Limitations of the Study

It is necessary to consider that the results of this study were derived from 5 specific cases and therefore the results cannot be readily generalized to the population of children with ADHD who are not on medication. The sample size was relatively small and the treatment group and control group were not equally matched in terms of age, developmental level, or social/emotional functioning.

There was a third grade student and fifth grade student in the treatment group, while there was a first, third, and fifth grade student in the control group. Additionally, the treatment group included children who lived in relatively stable households with stable family structures. All of the children in the control group had severe early traumas in their lives including death of a parent, neglect, and residency in group homes. This is an important distinction to consider when comparing the two groups behaviors. This study was also limited by the lack of female representation.

Another limitation is that, in spite of earnest attempts to keep the session occurring at the same time of day every week, one week the session was two hours
earlier. Also, session #6 was cancelled due to an inclement weather advisory that caused the schools to close early.

The instruments used in this study were not standardized and subjective in nature, which were limitations. The researcher chose these instruments since teachers were familiar with how to complete them and they were relatively short, which was convenient for the teachers. The operationally defined behavioral categories on the BCPS checklist could have been a variable that contributed to the difference in scores in the treatment group when compared with the control group. The Readiness to Learn scale did not show differences in scores for the two groups, perhaps because it is a more subjective instrument. The scope of the data collected by the instruments may not have fully encompassed all aspects of behavior related to ADHD.

Additionally, one teacher did not complete the checklists on the first week, because the student was absent (Case #5-Nathan), which limited this study.

During the last week of the study, some of the third grade students moved to new classes. One of these students was Case #4-Trent. Therefore, the teacher who completed his checklists for Week 1 and Week 4 was not the same teacher who completed his checklists for Week 8. This causes concerns surrounding interrater reliability. Each teacher brings their own subjective experience to the situation and the scores they give the students include their own biases. Therefore, there was no controlling for those subjective biases when Trent changed classes.

There was no specific movement observation or data for the control group, which was another limitation. Therefore, behavioral data from the control group checklists could not be compared to movement data.
In reviewing case histories, checklist scores and noted behaviors for both the treatment and control group, there is a difference in other variables that may have impacted scores recorded by the teachers. Although all of the participants had a diagnosis of ADHD, the members of the control group also had other life stressors such as neglect, and social emotional issues listed in their charts. Therefore, this could have impacted the checklist scores and results of the study.

Another limitation is the overlap of comorbid behavioral issues that impact the validity of the diagnosis and symptoms of ADHD. It is difficult to know if the behavioral issues are signs of ADHD or components of another disorder and/or their pharmacological treatments. Knowing the root of a symptom impacts the treatment approach.

This study assessed patterns of increases and decreases in behavioral scores. A limitation is that the significance of those increases and decreases could not be tested for statistical significance due to the small sample size.

**Implications for Future Research**

The results of this study indicate a better understanding of how dance/movement therapy can be utilized in the treatment in symptoms of Attention Deficit Hyperactivity Disorder (ADHD). The triangulation of qualitative and quantitative data show the connection between movement parameters and behaviors exhibited in the classroom. This provides a basis for understanding how a dance/movement therapist can use movement to address behavioral needs of children with this diagnosis.
There are a few recommended areas for future research; obtaining a homogeneous sample in regards to background, age, family structure, etc., a longer intervention period, inclusion of the children’s feedback, the creation of an assessment tool and/or a treatment model, and the development of a training workshop for teachers and parents.

Future outcome research studies should aim to obtain a homogeneous sample of children with ADHD. There are many environmental factors that influence ADHD symptoms and progress such as age, comorbid diagnoses, family structure and support, history, etc. Controlling for these variables would allow for more concrete assessment of how much a certain intervention may improve a child’s symptoms of ADHD.

A longer intervention period would allow for analysis of long-term patterns to more deeply understand the nature of the behaviors and their fluctuations due to the intervention or other variables. It is also recommended that this study be replicated but with a larger sample size.

Although the researcher informally asked the students what they learned or gleaned from the DMT intervention, a more structured interview could provide relevant information as to how each student felt and responded to the intervention.

Another future research study could develop a standardized assessment tool or scale for measuring change of children who have ADHD participating in dance/movement therapy. Some suggestions would be to develop a tool that quantitatively measures the rate of change and could be analyzed for statistical
significance. The behavioral categories should have clear, operationally defined parameters and use language that educators understand.

The other area of future research would be to devise a treatment model based on the results of this study, which would address the needs of children who have been diagnosed with this prevalent disorder.

Another suggestion would be to offer dance/movement therapy training specifically tailored for teachers and parents of children with ADHD. This could provide them with insight into how movement parameters are connected to the behavioral issues and provide them with nonverbal suggestions for ways of managing behavior in children with this diagnosis.
CHAPTER 6: SUMMARY AND CONCLUSION

The purpose of this study was to investigate the effectiveness of dance/movement therapy as a treatment for the symptoms of Attention Deficit Hyperactivity Disorder (ADHD). The researcher, from a dance/movement therapist’s perspective, based on a review of relevant literature, clinical experience, identified patterns and trends in behavioral data and movement data to assess the effectiveness of dance/movement therapy for reducing hyperactivity, impulsivity, and distractibility in students diagnosed with ADHD who are not taking medication for the treatment of those symptoms. Furthermore, connections were made between behaviors seen in dance/movement therapy sessions and behaviors recorded in the classroom.

Attention Deficit Hyperactivity Disorder is a disruptive behavioral disorder that is a life-long multi-dimensional disorder that is being diagnosed more frequently in American society, with an incidence at 3-5% (Dulicai, 1999). Research is needed in this area because the diagnosis, as well as its symptoms, affects both children and adults in many settings including social, academic, and professional settings. This is a life-long and lifetime disorder that severely impacts the functioning and quality of life in the individual diagnosed. This is why it is necessary to identify the best course of treatment for ADHD and intervene at an early age.

The results of this study, synthesized from the triangulation of data, behavioral assessment, movement considerations, and field notes demonstrated that students in the treatment group improved or remained the same in terms of their behavior. Students in the control group experienced improvement, no change, as well as decreases in desired behavior. Therefore dance/movement therapy was associated...
with improved behaviors as per the results recorded by classroom teachers. The results of the readiness to learn scale did not show any clear difference between rate of improvement or decreases in desired behavior.

Children diagnosed with Attention Deficit Hyperactivity Disorder often face many academic, social/emotional, and behavioral difficulties due to their behaviorally manifested symptoms of hyperactivity, distractibility, and impulsivity. They often end up unliked by their peers and unsuccessful in the school setting. Using dance/movement therapy and its unique treatment approach to assess and intervene with children who have these problems can provide educators and mental health professionals with another tool to maximize functioning in students with ADHD.
REFERENCES


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Appendix G

Glossary of Movement Terms

In the order of A-Z

**Affect**- emotion

**Body Attitude**- Qualities that are maintained in the body; which spatial emphases, body part relationships, and tensions are held in the body as a kind of baseline from which the mover operates.

**Body Boundary**- The awareness that one’s body is contained, integrated, and physically separate from others; the sense that enables a mover to judge how close to place his or her body next to someone else during interactions.

**Effort**- Movement qualities individuals use to make an impact on the environment. It is used to define the qualitative accents and specific characteristics of movement. It has four motion factors: flow, space, weight, and time.

**Effort Combination**- The eight combinations of three effort elements; weight, space, and time; in a group can be performed in a sequence of movement in which only one element is changed from one combination to the next. Laban attached an everyday action word to each of these combinations. They are: float, wring, press, glide, dab, flick, slash, and punch.

**Eye Contact**- Mutual gaze/eye contact occurs when interactants look into each other’s eyes.

**Flow Effort**- One of the four Effort motion factors that describe the feeling tone or inner attitude of movement, characterized by creating a movement attitude along the spectrum
of free to bound tension; referring to how a person maintains or interrupts the flux or normal communication of his or her movements.

**Gesture- Movements** which occur in one or more parts of the body without involving the whole body in the same movement quality.

**Horizontal plane**- The “table plane” is composed of the two dimensions side to side and forward/backward. Movement in this plane facilitates explorations of small and large spaces, and when used with spatial efforts, the give and take of communication.

**Interpersonal Space**- In the space category of movement analysis, the area of space shared when two individuals are engaged; the interactive, changing spatial distances between people in a given environment.

**Kinesphere**- In the space category of movement analysis, the personal space around each individual that is reachable while the individual stay in one spot. It includes three-dimensional orientation of the surrounding space.

**Mirroring**- A process that involves a therapist embodying the shape, form, movement qualities, and feeling tone of another person’s action, as if the therapist were creating an emotional and physical mirror image.

**Phrasing**- Pattern/organization of sequences of movement. A person’s movement phrasing is indicative of personality/psychological attributes.

**Posture**- Any movement that activated the whole body. All parts of the body move in a sequential and continuous fashion, supporting and enhancing movement.

**Proximity**- It refers to physical closeness or distance between two people.

**Sagittal Plane**- The “wheel plane” has the two dimensions forward/backward and up/down. Movement in this plane facilitates anticipation and initiation of action or
carrying out operations. Motor skills which are typically done in the sagittal plane include somersaulting and tossing a ball. This is the plane where one advances forward or retreats backward in space.

**Space Effort- One** of the four Effort motion factors that describe the feeling tone or inner attitude of the movement; characterized by movement along the spectrum of direct to indirect or flexible attitude, focus, concentration, or attention toward space.

**Tension Flow Rhythms-** The rhythmic patterns created by the change of muscle tension. Most rhythmic movements consist of alternations between what is called bound and free flow. The ten rhythms are: sucking, snapping/biting, twisting, strain/release, running/drifting, starting/stopping, swaying, surging/birthing, jumping, and spurting/ramming.

**Time Effort- One** of the four Effort motion factors that describe the feeling tone or inner attitude of the movement; characterized by movement along the spectrum of sudden quickness to a sustained attitude toward time. The attitude associated with time relates to decision-making and intuitive readiness.

**Reach Space-** It refers to the movement range which includes far, intermediate or near reach space.

**Vertical Plane- The** “door plane” is composed of the two dimensions up/down and side-to-side. Movement in this plane facilitated evaluation, presentation, and confrontation.

**Weight Effort- One** of the four Effort motion factors that describe the feeling tone or inner attitude of a movement. An attitude of weight creates a strong or light physical body intention when executing an action.
Sources of definitions in glossary included:

