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The effects of behavior interventions on first grade students diagnosed with ADHD combined type

Kelley Rand

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**THE EFFECTS OF BEHAVIOR INTERVENTIONS ON FIRST GRADE
STUDENTS DIAGNOSED WITH ADHD COMBINED TYPE**

by
Kelley L. Rand

A Thesis

Submitted to the
Department of Language, Literacy and Special Education
College of Education
In partial fulfillment of the requirement
For the degree of
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Thesis Chair: S. Jay Kuder, Ed. D.

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Dedications

This thesis is dedicated to my students who allowed me to conduct this study. I also dedicate this thesis to my family and friends who helped support and guidance throughout my journey in this program.

Acknowledgements

I would like to express my appreciation to my Professor, S. Jay Kuder for his support throughout this dissertation. Without his guidance, expertise, and support this Thesis would not have been possible. I would also like to thank my school and participants for allowing me to conduct research to enhance success in my classroom.

Abstract

Kelley L. Rand

THE EFFECTS OF BEHAVIOR INTERVENTIONS ON FIRST GRADE STUDENTS DIAGNOSED WITH ADHD COMBINED TYPE

2014/15

S. Jay Kuder, Ed.D.

Master of Arts in Learning Disabilities

The purpose of the study was to examine the effects of multiple behavior interventions of first grade students diagnosed with Attention Deficit Hyperactivity Disorder. This study implemented three behavior interventions. The results were analyzed to determine the successes and comparisons of the interventions. The participants were two first grade male students diagnosed with ADHD. Data was collected during a baseline phase, intervention one phase, intervention two phase, intervention three phase, and post-intervention phase. The independent variables were the use of three singular behavior interventions. The dependent variable was the measure of the participants' appropriate behavior in the classroom. Overall, the results of the study demonstrated that a teacher scheduled behavior intervention, which allowed students a break and physical movement to be the most effective intervention to increase students' appropriate behavior. The study demonstrated results for the use of a sensory behavior intervention or self-monitoring intervention to be ineffective.

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Chapter 1

Introduction

The American Psychological Association defines Attention Deficit Hyperactivity Disorder, or ADHD, as a behavioral condition that makes focusing on everyday requests and routines challenging. Individuals with ADHD typically have trouble getting organized, staying focused, making realistic plans and thinking before acting. Children, specifically, with ADHD can be defiant, impulsive, socially inept or aggressive (American Psychological Association, 2014).

In the past, there has been controversy regarding the existence of subtypes of ADHD. Initially ADHD was identified as minimal brain dysfunction until the *Diagnostic and Statistical Manual of Mental Disorders* (2nd edition: DSM-II, APA, 1968) was published and an emphasis on the hyperactivity component with hyperkinetic syndrome was addressed. Most recently, the DSM-V (APA, 2013), defined three subtypes, or “presentations” of ADHD: Predominantly Inattentive (PI), Predominantly Hyperactive-Impulsive (HI), and Combined Type (CT) (Riccio, Homack, Jarratt, & Wolfe, 2006).

The Predominantly Inattentive (PI) subtype is when an individual mostly demonstrates symptoms of attention problems. Individuals with ADHD (PI) display recurrent inattentiveness and inability to maintain focus on tasks or activities. In the classroom, this may be the child who “can’t stay on track” or is “spacing out.” Individuals diagnosed as having ADHD Predominantly Hyperactive-Impulsive (HI), often exhibit impulsive behaviors and inappropriate movements or restlessness (Mersh,

2014). It is currently defined as a cognitive/behavioral developmental disorder where all clinical criteria are behavioral (Sagvolden, T., Aase, H., Johansen, E., Russel, V., 2005).

The last subtype, which I primarily will be focusing on, is ADHD Combined Type. This is when an individual exhibits both inattentive symptoms along with hyperactive-impulsive behaviors. ADHD (CT) children are more aggressive, more noncompliant with authority figures, and more likely to be rejected by their peers. These children are also more likely to be placed in classes with emotional disturbances and behavior disorders. They are also more frequently suspended from school and are referred for psychological evaluations and treatment (Power & DuPaul, 2012). Children diagnosed with ADHD (CT) also are often considered to appear as having Oppositional Defiant Disorder (ODD). These children are not only faced with the problems of staying on task and focusing, but also their behavior and impulse control.

There are many different interventions that can be implemented to help treat children with all subtypes of Attention Deficit Disorder. The most common, and typical, intervention is the use of a stimulant medication. There are also alternative interventions that can be used with children diagnosed with ADHD that does not include the use of medication. To help individuals with ADHD (PI), educators and guardians would use interventions to address the academic impairments. These types of interventions include peer- and parent-tutoring, task and instructional modifications, strategy training, self-monitoring, use of functional assessment, and homework management programs (Raggi & Chronis, 2006). When working with a child who is diagnosed with ADHD (HI) or ADHD (CT), functional behavior analyses are completed, and behavior interventions are

put into place. Behavior interventions used with these individuals can be the use of positive reinforcement, self-monitoring, token/reward system, physical movement scheduled in their day and many more. It is also popular to use the trainings of Applied Behavior Analysis (ABA) practices with this population of students.

Research Problem

The focus of my thesis will be directed only towards children diagnosed with ADHD Combined Type. My thesis will focus on the implementation of three different behavior interventions to reduce the amount of explosive tantrums in the classroom when a demand is placed on the child. A demand is defined as an instruction told to a child in which they are then expected to follow that instruction. An explosive tantrum is defined as any behaviors including cursing, destruction of property, physical aggression towards another person and bolting from the instructor.

The questions to be investigated in this study include:

1. Will the use of a sensory input intervention help reduce the amount of explosive tantrums in primary students diagnosed with ADHD (CT)?
2. Will the use of a self-monitoring intervention reduce the amount of explosive tantrums in students diagnosed with ADHD (CT)?
3. Can a teacher instructed, scheduled movement intervention help reduce the amount of explosive tantrums in students diagnosed with ADHD (CT)?
4. Which intervention was most effective for reducing the amount of explosive tantrums in the classroom?

Implications

When implementing an intervention, it is extremely important that the intervention procedures are clearly defined and followed exactly. If precisely the instructor, or the aids within the classroom do not follow any of the intervention procedures, this could affect the outcome of the results. Another implication is the attendance of the students. Data cannot be taken if a student is absent, so if any student is absent for a long period of time, this can affect the results of the intervention being implemented at the time.

Summary

Many students diagnosed with ADHD (CT) face many difficulties in school, primarily with behavioral issues. These students are often placed in classrooms designated for students with Emotional Disorders (ED) and Behavioral Disorders (BD). This study was conducted in a first grade self-contained classroom with students who were determined eligible for special services as Other Health Impaired (OHI) with ADHD (CT) as their primary diagnoses along with emotional and behavioral disorders. In this study, I will examine the effects of three different behavior interventions with two first grade students to see which behavior interventions prove to be most successful. I will be implementing a sensory intervention, self-monitoring intervention and scheduled movement/physical activity intervention. In this study, I hope to find the intervention that is most successful for students in grade one.

Chapter 2

Review of Literature

Presently, it is recommended that treatment for children with ADHD be comprised of a multimodal approach that combines medication, behavior modification, accommodations and ancillary services (Reis, Trout & Schartz, 2005). Within this chapter, I will be reviewing current research and studies examining the results of these behavioral interventions used with ADHD (CT) individuals.

Behavior Difficulties of Students with ADHD

Educators are seeing more and more students with the ADHD diagnosis in the past several years. Many children who display ADHD often have tendencies to display problematic behaviors in the classroom setting. It has been debated whether children diagnosed with ADHD display more problem behaviors than children in the general population, or if the student population as a whole displays these problematic tendencies (Hill, 2011).

A study was done by Hill (2011), to determine whether students with ADD/ADHD tendencies, display more aggressive and/or defiant behaviors than students in the general population. The study included 43 participants in a preschool, first grade, and eighth grade class. The sample consisted of the entire student population in each class who displayed ADD/ADHD tendencies along with those children who did not show any symptoms. Classroom teachers collected data over a five-day period; teachers had a sheet with two columns labeled students who displayed ADD/ADHD tendencies and students who did not display ADD/ADHD tendencies. When a student displayed

aggression or defiance, a tally mark was made under the column where the student belonged. After the five-day period, all data was collected and analyzed by the researcher. Results confirmed a correlation between aggressive and/or defiant behavior and ADD/ADHD tendencies.

Children diagnosed with ADHD, often have many difficulties in the classroom. A study was done to examine the behavioral characteristics of the three ADHD subtypes in a school-based population. The study identified different behaviors seen in the classroom, and then using the DSM-IV teacher rating scales, it was determined what behaviors were seen most often and more specifically in which subtypes. The participants in the study consisted of 221 children diagnosed with ADHD and a comparison group of 221 non-ADHD subjects matched for age, gender, grade and ethnicity. For each child, teacher evaluations were completed; these evaluations consisted of the Teacher's Report Form (TRF; Achenbach, 1991) and a teacher-completed checklist from the DSM-IV for ADHD and oppositional defiant disorder (ODD). There were 19 dependent variables that were observed in the classroom are as follows: liked by peers, disliked by peers, peers neutral toward, ODD symptom rating, hard working, appropriate behavior, learning, happy, withdrawn, somatic complaints, anxious/depressed, social problems, thought problems, attention problems, delinquency, aggressive behavior, internalizing behavior, externalizing behavior, and total problem behavior. These 19 areas strongly indicate how many different difficulties students diagnosed with ADHD can face in the classroom. Focusing on the combined subtype, results showed that peers either felt neutral about them or disliked those diagnosed with the combined subtype than the other groups. They

also showed the least appropriate behavior and scored higher than two of the other groups on the ODD symptom rating. Overall, the combined group showed to be the group with the most somatic complaints, attention problems, social problems, internalizing behaviors, total problem behavior and were the most anxious/depressed. Using the results in the study, it is proven that there are many behavior difficulties in the classroom for children diagnosed with ADHD (Gaub & Carlson, 1996).

Self-Monitoring

Self-regulation has long recognized the importance of a feedback cycle in which individuals systematically self-assess and self-evaluate their behavior. There are four common forms of self-regulation, one being self-monitoring (Reis, Trout & Scharz, 2005). Self-monitoring has been shown to be an effective strategy at reducing problem behaviors and has been used successfully by both general and special education teachers (Sheffield & Waller, 2010). Self-monitoring is a multistage process of observing and recording one's behavior. First the individual must discriminate the occurrence of a target response then self-records some element of the target response. When using self-monitoring, it can also be used in combination with reinforcement; this is called self-monitoring plus reinforcement. Self-monitoring plus reinforcement includes the same steps as self-monitoring, however, in addition the student would be awarded reinforcement from an external agent (Reis et al, 2005).

Reid, Trout & Scharz, (2005) reports the results of a meta-analysis of the literature on the use of four self-regulation interventions (self-monitoring, self-monitoring plus reinforcement, self-management, and self reinforcement) for children with ADHD.

Eleven total studies found in this literature review were conducted using self-monitoring and self-monitoring plus reinforcement, totaling a number of 32 participants across studies. All participants were ages 7-15 with a majority of the individuals being male. Dependent variables varied from on-task behavior, inappropriate behavior, off-task behavior, and number of problem behaviors and rate of appropriate requests per hour. Combined effect sizes for these interventions were greater than 1.0, indicating that self-regulation interventions, self-monitoring being included, are effective for children with ADHD.

A review of single-case studies utilizing self-monitoring interventions to reduce problem classroom behaviors was done by Sheffield & Waller (2010). This review discusses a variety of self-monitoring strategies implemented by teachers and used by students that effectively reduced problem behaviors in the classroom. The researchers limited the review to single-case studies primarily because they specifically wanted to focus on individual intervention responses that are unnoticed in group research designs. There were a total of 146 students analyzed in the studies reviewed aging from 8 to 15 years old; 108 were males and 38 were females. The individuals were labeled as ADHD, at risk for school failure, no identified disability, specific learning disability, severe emotional disturbance, mental retardation, down syndrome, and comorbid with one or more of the following: behavioral disorder, emotional disorder, and speech or language impairment. The dependent variables included from following directions, on task and off task behavior, positive alternative behaviors, work engagement, and academic performance. The interventions used with all participants included self-monitoring,

sometimes paired with another self-monitoring strategy like adding positive reinforcement or self-management procedures. The results found that self-monitoring strategies have been clearly shown to be effective, positive behavioral interventions; only three of the eight studies reported less than desirable results at some point during the intervention.

After reviewing several research articles, studies indicate that self-monitoring is a successful intervention that can be used for students diagnosed with ADHD. Self-monitoring can also be paired with another intervention, for example positive reinforcement, to help motivate students to improve their self-monitoring techniques. In conclusion, self-monitoring alone, or paired with another intervention, has proven to be a successful intervention in the classroom used with students diagnosed with ADHD.

Scheduled Movement/Physical Activity Breaks

Classroom teachers face daily challenges to better meet the needs of all students in a diverse classroom, including those students who are inattentive, impulsive, and have trouble staying on task. All students, especially those with ADHD, need exercise; it assists them with concentration and provides an outlet for healthy impulse discharge, helping to control impulsivity (Mulrine, Prater & Jenkins, 2008). Recess has customarily been a regular tradition in school, but establishing a schedule or routine that encourages additional, or more physical movement throughout the school day, can improve results for student with ADHD. It can help reduce problem behaviors in the classroom and better focus students' attention during instruction. Evidence actually indicates keeping students with ADHD from exercise may cause classroom-related problems (Mulrine et al., 2008).

Some teachers have conflicting views on recess in their instructional day. Some teachers view it as a time for students to run around, get their excess energy out, interact with others and return to the classroom more attentive. Other teachers think recess is an interruption to their day and believe their students are less attentive returning from recess (Ridgeway, Northup, Pellegrin, LaRue & Hightshoe, 2003). Ridgeway, Northup, Pellegrin, LaRue & Hightshoe decided to conduct a study to evaluate the effects of recess on the classroom behavior of children diagnosed with ADHD. These authors also evaluated the effects of recess on students' behaviors that were not diagnosed with ADHD to compare the results of these typical peers with the students diagnosed with ADHD. All participants included were eight years old enrolled in second grade. The primary participants were three boys diagnosed with ADHD based on the criteria of the DSM-IV. The dependent variables included off task, inappropriate vocalizations, out of seat, fidgeting, and playing with objects. Off task behavior was defined as looking away from the instructor for more than three seconds; inappropriate vocalization was defined as any noise or verbalizing from a student that was called out without raising their hand and being acknowledged by a teacher. First, data was taken on 3 primary students and their comparison group for three days before introducing the intervention. After gathering baseline data for those three days, the intervention of alternating recess and no-recess days everyday for 6 days. The overall results show higher levels of inappropriate behavior for all three primary participants on days when they did not have recess, compared with the days they did have recess. However, results did appear similar for both children diagnose with ADHD and the typical peers in the comparison group, but

the results suggest that the effects of recess may have been greater for most of the participants with ADHD than for the peer groups.

According to a study done by Pellegrini & Bohn-Gettler (2013), research demonstrates that recess, a scheduled time for physical movement, has many benefits in physical, cognitive, and social aspects for primary school children. These benefits have a positive effect on classroom behavior and achievement; scientific research consistently documents that recess is an important part in the school day, particularly in those specified areas. Focusing on classroom behavior, research has found that fidgeting increases before recess and decreases after recess, which supports that classroom conduct and academic on-task behaviors is higher for students who receive recess, or scheduled physical activity (Pellegrini & Bohn-Gettler, 2013).

A study done by Mahoney & Fagerstrom, (2006) researched whether strategically scheduled recess breaks throughout the school day would increase on-task behaviors during instruction. Used as an intervention, recess breaks were given often more often, but for a less amount of time. Recess breaks were scheduled before and after academic lessons throughout the entire day. The participants in this study consisted of 16 first-grade students ranging from ages six to seven years old; including 9 males and 7 females. The intervention was put into place for two weeks, or ten school days, and data was taken each day. During those two weeks, recess was placed either directly before mathematics, or right after the mathematics lesson, alternating every other day. This research was designed a quasi-experimental design with baseline data collected prior to the intervention, during the intervention, and after. The teacher used a checklist to collect

data during the intervention; field notes of observation of students' were also taken. Changes to the scheduling of recess were the only changes in the students' day; curriculum and instructed were not altered, or the quality of recess. Results reported that recess before mathematics displayed the most on-task behavior and the least off-task behavior. Field notes also provided feedback from the students that were positive. Students expressed the enjoyment of more recess breaks, even though, unbeknown to the students, the increments were shorter.

Sensory Input

Studies have shown that many children with ADHD also suffer from sensory processing disorder. They either withdraw from or seek sensory stimulation like movement, sound, light or touch and this translates into problematic behaviors at school and home (Koenig & Kinnealey, 2005). Individuals who are considered part of the "norm" process and adapt to sensory stimulation daily, but children with ADHD are unable to adjust to these daily stimulants. There are seven basic sensory systems within the nervous system: tactile (touch), visual (sight), auditory (sound), gustatory (taste), olfactory (smell), vestibular (movement and balance), and proprioception (joint/muscle sense). For purpose related to my study, I focused more towards literature and studies that used tactile interventions.

One study by Temple University researchers, Koenig & Kinnealey, investigated if ADHD symptoms improve with sensory intervention. The study included 63 participants who all were all enrolled in an occupational therapy center in Crystal River, FL. The therapy techniques used, appealed to the three basic sensory systems: tactile, vestibular

and proprioceptive. The tactile system controls the sense of touch, the vestibular system regulates the sensation of gravity and movement, and the proprioceptive system controls the awareness of the body in space. The children in the study received 40 one-hour sensory intervention therapy sessions. Results found significant improvement in sensory avoiding behaviors, tactile sensitivity, and visual auditory sensitivity. The children could better attend to lessons and could participate in more family activities appropriately. In this study, changes were seen within six months.

“In primarily clinical settings, specific interventions derived from the theory of sensory integration have been shown to increase on-task behaviors in students with mild disabilities” stated Karen Voytecki in her study on the effects of hand fidgets on the on-task behaviors of middle school student with disabilities. The primary study participant was a 14 year old male who was identified as ADHD (hyperactivity-impulsive subtype) and specific learning disorder (SLD). The independent variable in the study was the use of a hand fidget, whereas the dependent variable was on-task behavior. The study lasted 11 weeks and was an A-B-A-B design, which is structured to provide a brief withdrawal of intervention between intervention implementation. Data was taken using a on-task checklist, procedural reliability checklist, and an anecdotal log. Results indicate that the participant’s rate of on-task behaviors significantly increased during the intervention phases. Therefore this study supports the theory of the use of hand fidgets as a sensory stimulation to increase student on-task behavior.

Chapter 3

Methodology

Setting and Participants

In this study, the participants were two first grade male students in an urban, South Jersey school district. The school building educates about 250 students in grades pre-kindergarten to eight. There are three pre-kindergarten classes, one kindergarten through first grade self contained class, one fourth through six self-contained class, one pull out resource room rotated between grades two through eight and two general education classes per grades K-8.

The district is made up of this one Pre-K through eighth grade school. Once graduating from eighth grade, the students attend a High School in another community. According to The Official Web Site of New Jersey Department of Education, the school's ethnic make up is 46.6% African American students, 36.2% Caucasian students, 14% Hispanic students, 2.6% Multiracial and 0.7% Pacific Islander. Sixty-eight percent of students are enrolled in Free/Reduced Breakfast and Lunch Program.

Both participants were students in the same kindergarten through first grade self-contained classroom. The classroom consisted of six male students diagnosed with one or more of the following disabilities: Attention Deficit Hyperactivity Disorder Combined Type (ADHD-CT), Emotionally Disturbed (ED), Behavior Disorder (BD), Communication Impaired (CI) and Autism. Study participants were chosen due to their diagnosis of Attention Deficient Hyperactivity Disorder. Both students were selected

based upon their lack of focus ability, and their behavioral outbursts that are due to their disability.

Participant 1. GS is a first grade Caucasian male identified as having Attention Deficit Hyperactivity Disorder Combined Type. He was in an inclusion class for prekindergarten with no diagnosis, but he was placed in that classroom because it was noticed that he had off-task and problematic behaviors. After referral for the Extended School Year Program, GS made progress and was enrolled in a general education kindergarten classroom. During kindergarten this student portrayed deviancy and would often bolt from the classroom to escape school. This student was serviced with a one-on-one aide until a self-contained classroom was created for the primary grades. During his time in the general education setting with the assistance of his aide, he still bolted from the classroom, used high pitch screams and used physical aggression towards his aide. Half way through kindergarten he was transitioned into a new self-contained classroom. He remained in the self-contained classroom for the rest of the year and continued in the same classroom the following year. In kindergarten this student was officially diagnosed with ADHD-CT and was prescribed medication. The medication proved to show improvements in the student's behavior. At the start of first grade, the parents decided to take the student off the medication due to "personal reasoning".

Participant 2. CR is a first grade Caucasian male classifies as having ADHD-Combined Type. He entered the district in kindergarten in a general education setting with no diagnosis. The student portrayed a very short temper and got angry easily. The student physically attacked students by hitting, kicking, and punching. After several

extreme physical aggression actions toward other students along with choking another classmate, the student was put on homebound instruction until a self-contained classroom was created for the primary grades. Once the classroom was formed, CR was transitioned back into school into the self-contained classroom.

Procedure

The three separate behavioral interventions took place in the classroom starting when the students arrived in the morning (8:45 am), until they were dismissed in the afternoon (2:45 am). The first behavioral intervention was introduced to the students and used for four weeks. The special education teacher and a one-on-one assigned aide took data daily. After four weeks of data collection, the intervention was stopped and a new intervention was introduced with the same data collection procedure as the first intervention. This process was repeated again for the third intervention.

The first intervention introduced to the students was a sensory input intervention. Velcro was stuck underneath each of the students' desks for them to rub and touch while they were working at their desks. The second part of the sensory input was the use of a stress ball during whole group instruction at the carpet. The guidance counselor and teacher introduced the first intervention to the students in a small group counseling session. The counselor and teacher explained to the students they would be given a squeeze ball to use during whole group instruction on the carpet to help keep them focused and on task. The students were also counseled on how important it is to practice self-control, and to squeeze the ball and take deep breathes instead of using aggressive physical behavior. The students were given scenarios where the squeeze ball would

benefit them. This intervention combined placing the Velcro under the students' desk to use as another form of sensory input while the students worked at their desks.

The second intervention used in this study was self-monitoring. The students were given a card with the words "Brain Break" typed at the center. The students then had three choices for their break: physical exercise (jumping on trampoline, jumping jacks, somersaults etc.), water fountain, or taking a walk. These three choices were written on the "Brain Break" card along with supporting pictures. The teacher introduced this intervention to the students in a one on one setting. The teacher explained to the student that it would be their choice and decision that if they felt they were getting frustrated or upset that they could use their "Brain Break" card to take a break from the activity instead of becoming physically aggressive or angry. The student was told they were allowed to use this card once every period (45 minute periods). The limit was put on this card so students would not be constantly using this intervention as an escape mechanism.

The last intervention used in this study was a scheduled physical movement behavior intervention. Opposite of the self-monitoring intervention allowing the student to choose their break, this intervention allowed the teacher to choose when the student was to take a break throughout the day. The teacher introduced this intervention in a one on one setting to each student. The teacher explained to the students that they will be told when it is time to take a break; during their break the students jumped on the trampoline for three minutes, then walked down the hallway to take a drink from the water fountain and walked back. Each break took approximately five minutes total.

The teacher and one on one assigned aide, who was trained in the data collection process, took data each day. Data was taken using an Antecedent-Behavior-Consequence (ABC) data sheet.

Table 1
A-B-C Data Sheet

<u>Antecedent</u> Demand Told No Attention Interruption Other	<u>Behavior</u> Screaming Vocal Protest Hitting/Kicking Bolting Destruction of Property Other	<u>Consequence</u> Keep Demand Redirect Ignore Make-Up Work Other	Duration Start-End Time _____:_____ - _____:_____
<u>Antecedent</u> Demand Told No Attention Interruption Other	<u>Behavior</u> Screaming Vocal Protest Hitting/Kicking Bolting Destruction of Property Other	<u>Consequence</u> Keep Demand Redirect Ignore Make-Up Work Other	Duration Start-End _____:_____ - _____:_____
<u>Antecedent</u> Demand Told No Attention Interruption Other	<u>Behavior</u> Screaming Vocal Protest Hitting/Kicking Bolting Destruction of Property Other	<u>Consequence</u> Keep Demand Redirect Ignore Make-Up Work Other	Duration Start-End _____:_____ - _____:_____

An antecedent is defined as what happens directly before the behavior occurs, for example a demand was placed on a student, the student was interrupted in an activity, or the student wants attention. A behavior is defined as the behavior in what the child engaged in, for example hitting, kicking, screaming, or running away. A consequence is defined as what consequence the child received after engaging in the behavior, for example the child was ignored, redirected, or the demand was kept on the child until it was completed. For the purpose of the study, all data collection was taken when a student engaged in any of the following behaviors: cursing, destruction of property, physical aggression towards another person and bolting from the instructor. Data was kept in a binder and was reviewed each day; data was also reviewed and analyzed at the completion of each intervention.

Chapter 4

Results

Summary

In this single subject study, the effects of three behavior interventions to decrease inappropriate classroom behavior with students in first grade diagnosed with Attention Deficit Hyperactivity Disorder was studied. The research questions to be answered were:

1. Will the use of a sensory input intervention help reduce the amount of explosive tantrums in primary students diagnosed with ADHD (CT)?
2. Will the use of a self-monitoring intervention reduce the amount of explosive tantrums in students diagnosed with ADHD (CT)?
3. Can a teacher instructed, scheduled movement intervention help reduce the amount of explosive tantrums in students diagnosed with ADHD (CT)?
4. Which intervention was most effective for reducing the amount of explosive tantrums in the classroom?

The students were observed in the classroom for two weeks before any behavior intervention implementation to collect baseline data. Each intervention was implemented for four weeks before another intervention was introduced while data was collected and analyzed daily.

Individual Results

Figure 1 illustrates the results for Participant 1 on the frequency of explosive tantrums that occurred each day during the baseline, where no intervention was implemented, during Intervention 1 (Sensory Input), Intervention 2 (Self-Monitoring) and

Intervention 3 (Teacher Instructed Scheduled Breaks). During the two weeks of the baseline phase, the frequency of explosive tantrums that occurred in the classroom was an average of 13.5 a day. The occurrence of explosive tantrums during the three-week implementation of Intervention 1 was 13.2 a day, which shows a .3 decrease from the baseline phase. During the implementation of Intervention 2, participant 1 had an average of 10.06 explosive tantrums a day, a 3.44 behavior decrease from the baseline phase. The final phase, which was the implementation of Intervention 3, participant 1 displayed an average of 5.86 per day. This is a decrease of 7.64 compared to the baseline phase.

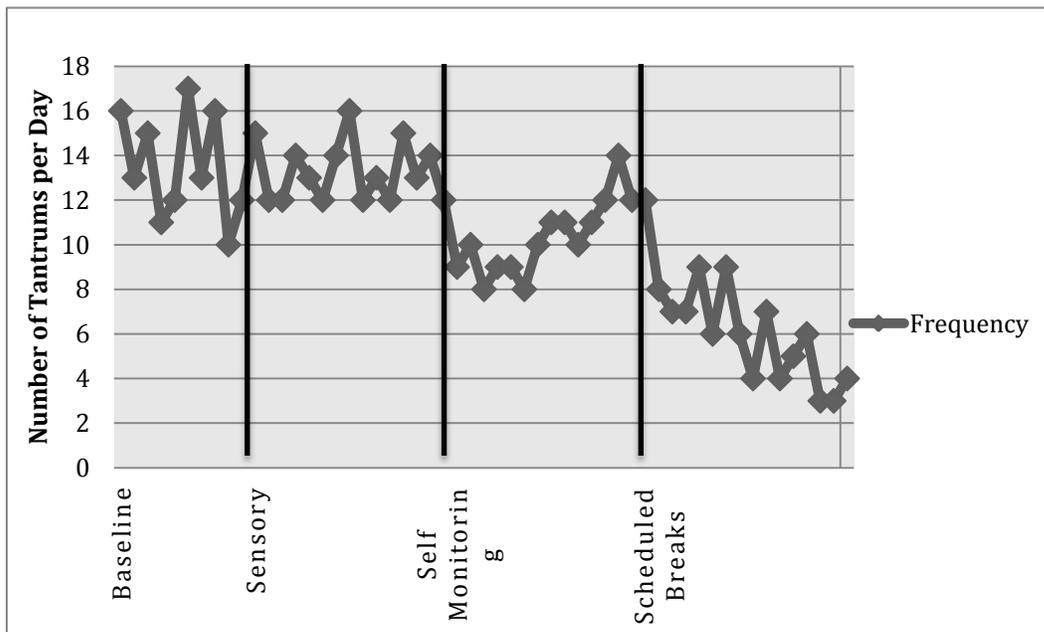


Figure 1. Participant 1 Intervention Implementations

Figure 2 illustrates the results for participant 2 on the frequency of explosive tantrums that occurred each day during the Baseline, Intervention 1, Intervention 2 and

Intervention 3. During the Baseline Phase, Participant 2 had an average of 8.9 explosive tantrums a day. During the implementation of Intervention 1, he had an average of 9.26 a day, which is an increase from the Baseline Phase of 0.36. In the Intervention 2 stage, he had an average of 9.4 tantrums a day, which is an increase of 0.14 from Intervention 1 and an increase of 0.5 from the Baseline Phase. During the implementation of Intervention 3, the student averaged 6.73 explosive tantrums a day, which is a decrease from all other stages. During the Intervention 3, he decreased his average of behaviors by 2.17 compared to the Baseline Phase, decreased 2.53 in relation to Intervention 1, and decreased his average number of daily explosive tantrums by 2.67 compared to Intervention 2.

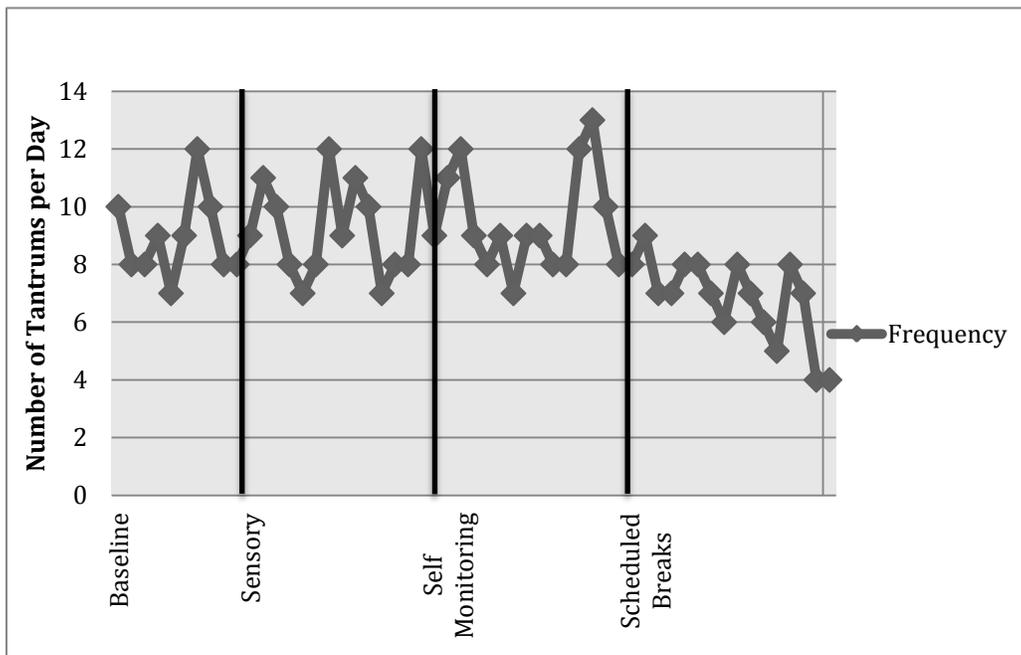


Figure 2. Participant 2 Intervention Implementations

Chapter 5

Discussion

Review

This study examined the effects of three different behavioral interventions for students with Attention Deficient Disorder-Combined Type (ADHD-CT) in an urban, low-socioeconomic community in New Jersey. The three behavior interventions were the following: Sensory Input (use of a squeeze ball and Velcro), Self-Monitoring (use of a “Brain Break” card), and Scheduled Movement Breaks (teacher scheduled breaks). The two participants in the study were first grade male students with special needs who were eligible for special education services under the category Other Health Impaired diagnosed with ADHD-CT.

The Sensory Input intervention had no significant positive effect on improving either of the students’ daily behaviors in this study. Both participants’ behaviors stayed within a .3 range of behaviors that was displayed in the baseline data. Although researchers like Voytecki (Voytecki, 2005) and Koenig and Kinnealey (Koenig & Kinnealey, 2005) found positive effects with sensory interventions for students with ADHD-CT, there is not much supporting data and research for Sensory Input interventions, specifically for students with ADHD-CT.

Self-monitoring has been shown to be an effective strategy at reducing problem behaviors and has been used successfully by both general and special education teachers (Sheffield & Waller, 2010). The self-monitoring intervention started off as being effective for Participant 1 in the first week; during the first week, the student’s behaviors

decreased by about an average of 4 behaviors per day. However, during the second and third week, the student's behaviors started to steadily increase. Although it showed little improvement in Participant 1's behavior for the first week, it showed no significant effect towards Participant 2's behavior frequency during any week implemented. Studies previously discussed by Sheffield & Waller (2010) and Reid, Trout & Schartz, (2005) proved to be effective to decrease problem behaviors for students with ADHD, ages ranging from 7-15. This age range is much older than my Participants and may indicate why my results varied and strayed from other studies.

Research done by Mulrine, Prater, and Jenkins (2008) said that evidence actually indicates keeping students with ADHD from exercise may cause classroom-related problems. Aligning with the research, during the implementation of the behavior intervention of Scheduled Movement Breaks, daily explosive tantrums steadily decreased as the intervention was implemented over the course of the three weeks. This behavioral intervention proved to be most effective for the Participants in my study.

Limitations

During the study, both participants displayed decreases in explosive tantrums per day in the classroom setting with the Scheduled Movement Break intervention was implemented. It was the only intervention that showed any significant decrease; therefore, it seems that for this age group, teacher scheduled breaks is most effective out of the three interventions implemented in this study.

Because the sample size of the study was limited to only two first grade students diagnosed with ADHD-CT, this may or may not be a true indication that Scheduled

Movement Breaks will decrease students' inappropriate behaviors in the classroom. In order to determine an effect size, a much larger group of participants would be needed. This sample was also restricted to students from a district with a low-socioeconomic community with a high level of crime. To determine an effect size for students from various socioeconomic backgrounds, the interventions would need to be implemented and compared by multiple districts.

Implications for Practice

The participants in this study practiced three different behavioral interventions implemented in a self-contained classroom setting. Professionals and educators that are looking to decrease inappropriate behaviors and lack of self-control in their classroom should mostly consider the use of the teacher scheduled break intervention for younger and primary students. Since younger children lack the sense of self-awareness, self-monitoring would be more successful in older students. Educators and professionals working with students who exhibit behavioral difficulties in the classroom of any socioeconomic status could benefit from implementing these behavior interventions.

Future Studies

Future research should study the effectiveness of these three behavioral interventions for students not only diagnosed with ADHD-CT, but any student who is, or is not, eligible for special education services and displaying behavior difficulties in the classroom. Other studies may focus on one particular behavior intervention. Future research may also include a variety of ages to see if age has an effect on how effective the

intervention outcome is. It is recommended that the sample size be larger and include varied socioeconomic and ethnic backgrounds.

Conclusion

This study obtained answers to the questions: Will the use of a sensory input intervention help reduce the amount of explosive tantrums in primary students diagnosed with ADHD (CT)? Will the use of a self-monitoring intervention reduce the amount of explosive tantrums in students diagnosed with ADHD (CT)? Can a teacher instructed, scheduled movement intervention help reduce the amount of explosive tantrums in students diagnosed with ADHD (CT)? Which intervention was most effective for reducing the amount of explosive tantrums in the classroom? The data illustrated that the behavior intervention that was most effective for these two students was a teacher scheduled break intervention. It was determined by a comparison to the baseline and all other interventions implemented on a daily basis of the students' behaviors.

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